Parks, Trails, and Health Workbook

A Tool for Planners, Parks & Recreation Professionals, and Health Practitioners

NATIONAL PARK SERVICE

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

National Park Service

Rivers, Trails, and Conservation Assistance Program

The National Park Service Rivers, Trails, and Conservation Assistance program supports community-led natural resource conservation and outdoor recreation projects across the nation.

Our national network of conservation and recreation planning professionals partners with community groups, nonprofits, tribes, and state and local governments to design trails and parks, conserve and improve access to rivers, protect special places, and create recreation opportunities.

http://www.nps.gov/rtca

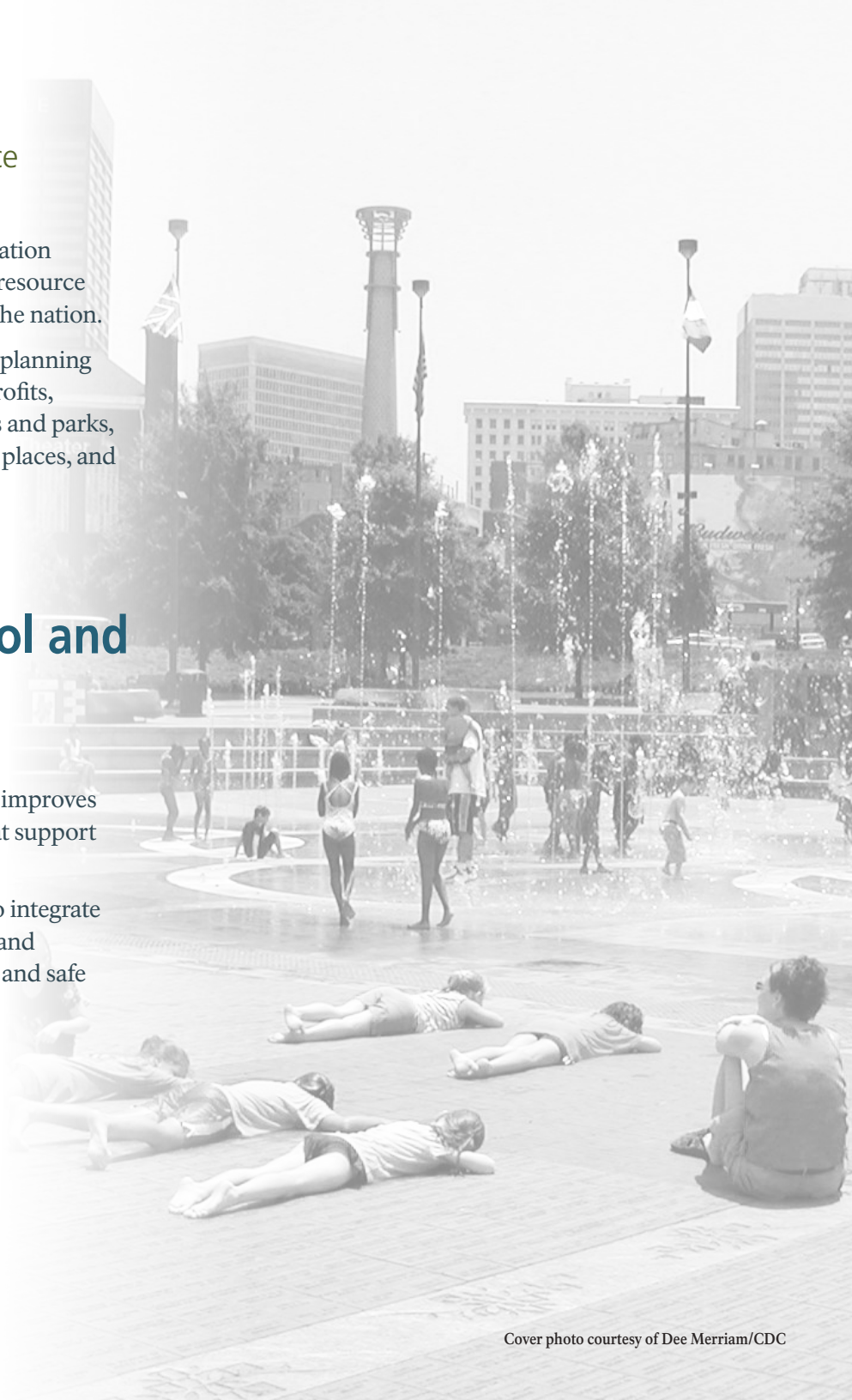
Centers for Disease Control and Prevention

Healthy Community Design Initiative

CDC's Healthy Community Design Initiative (HCDI) improves public health by helping create built environments that support healthy choices where people live, work, and play.

HCDI works with local, state, and national partners to integrate public health into community design, transportation, and land-use decisions to provide people with convenient and safe opportunities to walk, bicycle, or use public transit.

http://www.cdc.gov/healthyplaces



Cover photo courtesy of Dee Merriam/CDC

Workbook at a Glance

Parks and trails support community and individual well-being. Access to these resources can help increase residents' physical activity, support mental health, and foster community and social interactions.[i]

Parks and trails development can also benefit local environments and support community wellness. Sensitive areas such as flood plains may be protected, ecosystem services preserved, and areas prone to natural disasters shielded from development that would put people at heightened risk.

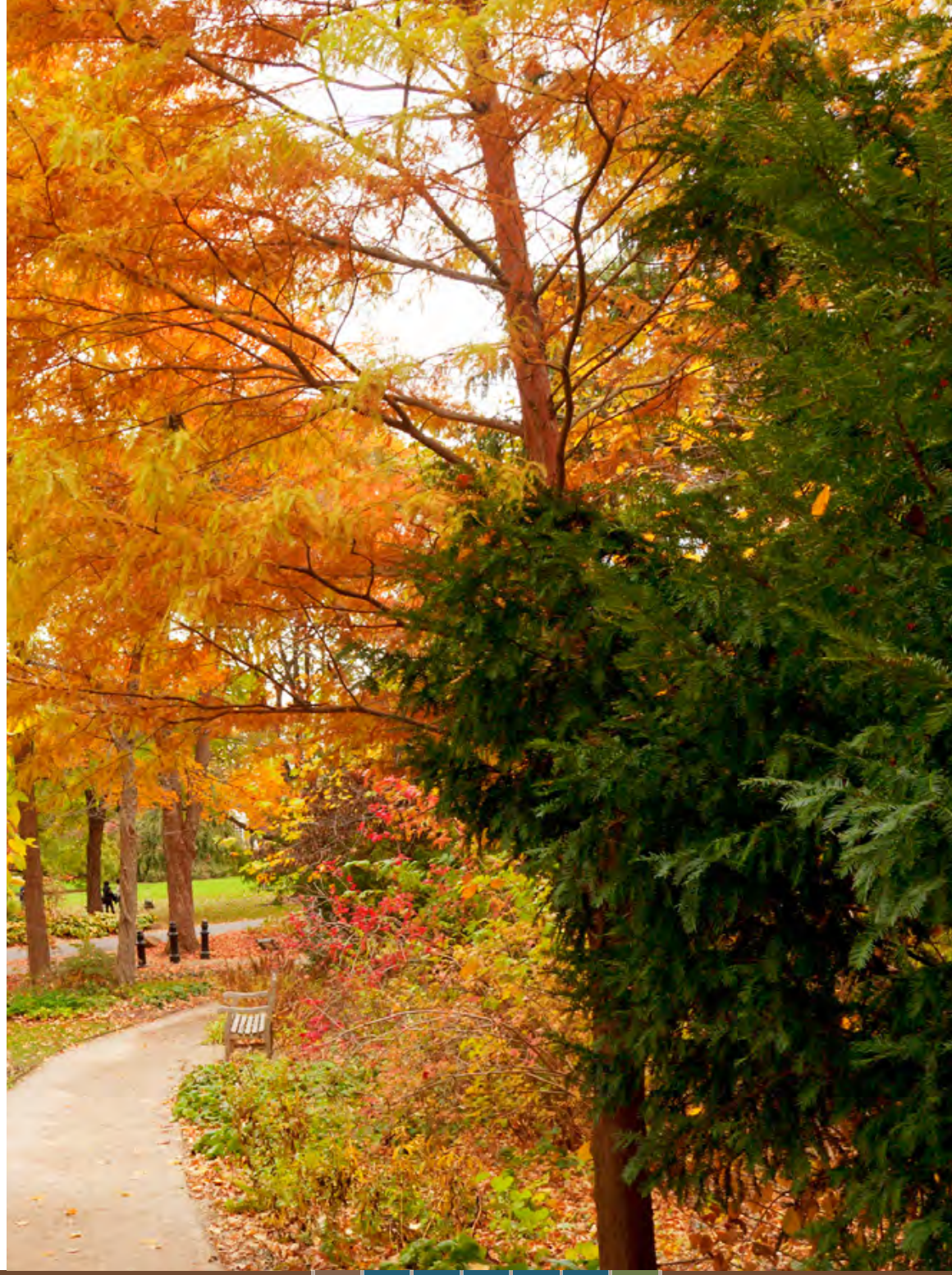
Why is a health workbook for park and trail planners needed? Explicit recognition of public health connections and goals in relation to planning efforts is not always obvious. Integrating public health concepts in planning processes can best ensure the full realization of park and trail health benefits.

Parks and trails can provide health benefits by:

- √ **Providing opportunities to practice healthy lifestyles**
- √ **Creating destinations and venues for physical activity**
- √ **Reducing stress and improving mental wellness**
- √ **Fostering community interaction & social support networks**
- √ **Providing beneficial, low impact use of sensitive areas, reducing injury and property loss that could occur if the land was used for other functions**
- √ **Reducing air and water pollution**
- √ **Mitigating urban heat islands**
- √ **Preserving important habitat, environmental, and cultural sites**

[i] Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth. Washington, DC: U.S. Department of Health and Human Services, 2012.

HCDI Healthy Places web site for parks and trails; Trust for Public Land, "The Health Benefits of Parks"



Purpose of Workbook

This workbook is intended as an outline and quick guide for incorporating public health considerations in the development of a park or trail. Its intended and potential uses include helping you:

- Facilitate interagency and stakeholder discussion and collaboration related to parks, trails, and community health issues.
- Find data and information to engage and enlist new health partners, funding resources, and stakeholders.
- Assess the health and community needs for a new park/trail project or enhancement
- Prepare for a health impact assessment (http://www.cdc.gov/healthyplaces/hia.htm) or for health grant applications.

How to Use this Workbook

The workbook is separated into five sections, along with appendices, all of which build on each other to strengthen the design and implementation of a community-based park or trail project. Each section should be probed for its relevance to the project and should be completed with community stakeholders and expert partners, if possible.

Please note:

- Discuss suggested topics with experts in that field before dismissing. Topics that initially seem to have little relevance to a project may become very important when reviewed with experts.
- Be flexible as to what data to use. Data related to some of the suggested topics may be easily obtained. Other data may need to be adapted from a similar area of concern. Suggested approaches and web links are provided for your convenience and are not endorsements.
- Review appendices for ideas and resources that may inform your group discussions.

Consider this workbook as a starting point. Every project is different. This workbook is intended as a guide to be adapted for specific situations.

It is unlikely that all the items listed will be relevant for a particular initiative or project; conversely, additional items might need to be addressed that are not reflected here. You can use a flowchart or logic model to determine the best way to include this workbook in your efforts.

Photo courtesy of the National Park Service

Workbook Sections

Section 1 – Community Health Profile

This section of the workbook establishes the health profile of the community or specific study area of your project. Completion of this section is best accomplished early in the project planning process. This section makes use of existing data. Collection of the data and the rationale behind it begins the park/trail planning–community health collaboration.

Section 2 – Site Assessment

This section of the workbook helps users understand the dynamics and physical elements of the neighborhoods or communities where park and trail projects are proposed.

Gathering information for Section 2 lends itself to a community workshop where participants:

- Become informed of community health issues.
- Are able to offer input on problems and solutions.
- Are able to identify and map the area's resources and challenges.

This workshop might be done with assistance from project stakeholders and health practitioners.

Section 3 – Site Planning

This section of the workbook addresses design considerations related to a specific site. It is intended to ensure that a project is promoting physical, mental, and social well-being. As community ideas become focused, the site planning checklist can be revisited to assure the strategies that address health issues within the community are being considered.

Illustration courtesy of the National Park Service

Section 4 – Park and Trail System Planning

This section of the workbook highlights planning principles to take into account as part of a community's comprehensive planning process. The planning principles may be used to identify opportunities to create linked park and trail systems through planning and development policies. They also help in identifying areas outside of park boundaries that affect park access, visibility, and safety. Examples include:

- Identifying opportunities to increase park or trail visibility.
- Locating entrances to encourage walking and biking to the site.
- Making parks more accessible by adding entry points serving nearby neighborhoods.
- Creating walk and bike routes that shorten distances to park entry points.
- Instituting universal access when possible.

Section 5 – Monitoring and Evaluation

This section of the workbook covers evaluation and monitoring to measure a project's progress toward stated goals and to ensure the project actually promotes health after it is complete and open for use. Establishing baseline conditions before project implementation is essential if its impact is to be understood.

Appendices

Appendix A – Finding Health Data about Your Community: A How-To Guide

Offers resources on how to find health data for your community. Your health department may have data that are more detailed and nuanced.

Appendix B – Example Matrices

Provides examples of matrices. These examples should be adapted to include information specific to your project. A stakeholder matrix helps identify interest groups potentially affected by park or trail issues and opportunities. A design matrix assures the development has a broad appeal.

Appendix C – Health Impact Assessment Resources

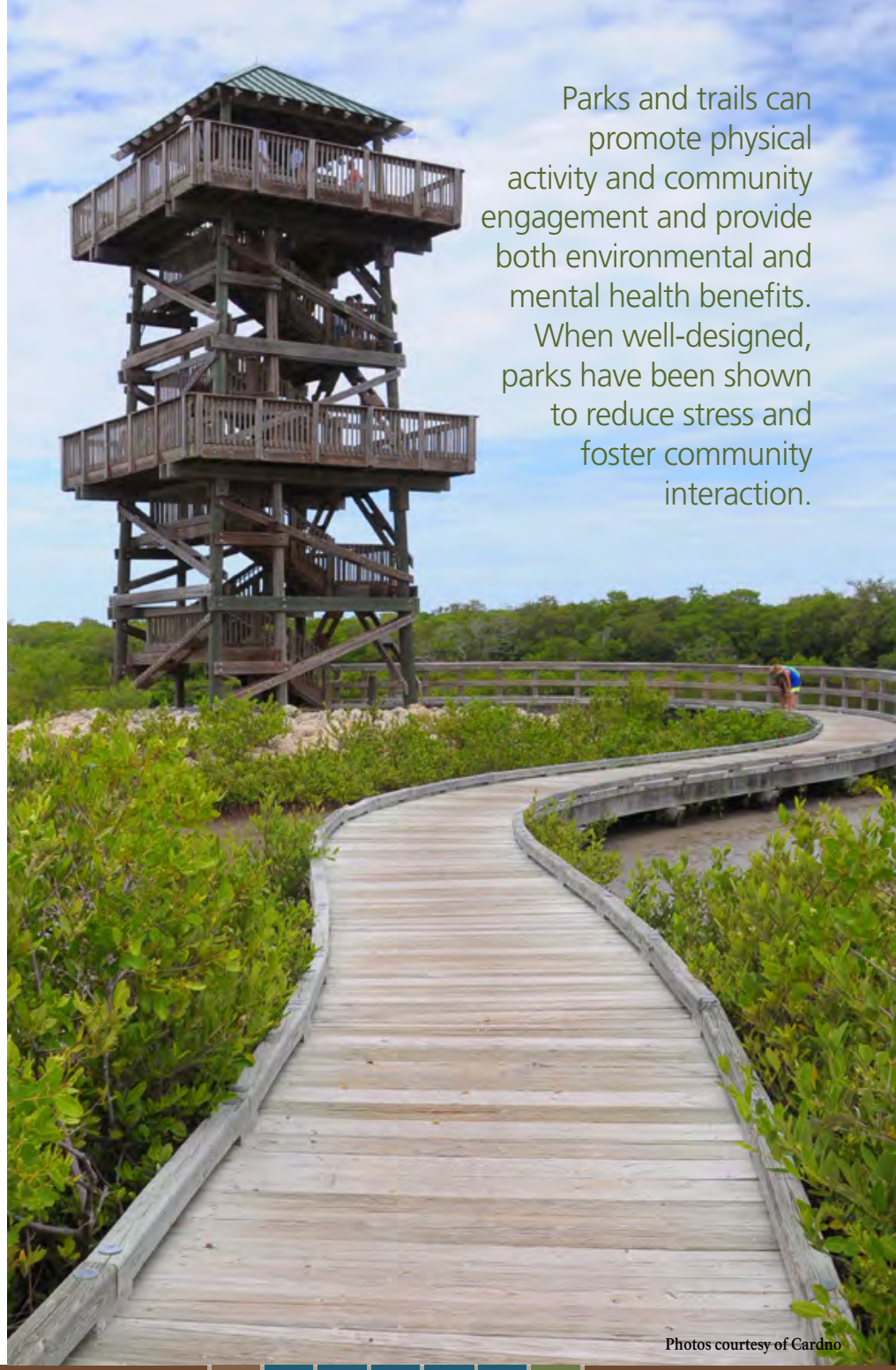
Explains how this workbook is similar to a health impact assessment and lists examples of completed health impact assessments that include parks, trails, and/or greenways. These examples can be used as resources to gain a better understanding of how health considerations can be identified and integrated into planning processes.

Appendix D – Case Studies

Presents two successful case studies illustrating this workbook process.

Appendix E – Workbook Summary Report Example

Presents an example of how one community developed an executive summary capturing potential health impacts and health outcomes using a logic model illustration.



Parks and trails can promote physical activity and community engagement and provide both environmental and mental health benefits. When well-designed, parks have been shown to reduce stress and foster community interaction.

Photos courtesy of Cardno

Section 1: Community Health Profile

Neighborhood health statistics and demographic data provide a useful profile of potential park visitors or trail users and community health issues. With this knowledge, planners, consultants, and technical staff can make informed decisions and tailor their projects to best serve the health needs of visitors and the surrounding communities.

Links that may help you create your community health profile are included in the text and in Appendix A. We also strongly encourage you to contact your local health department during data collection. The local health department likely will have more relevant, detailed, and up-to-date information. This step is especially important for rural communities, because comprehensive online data may not be readily available in less populated areas.

Material in this section is intended to start conversations between nontraditional partners. Before deciding that specific data are too difficult to obtain, check with experts in that area. Then your project team should determine what information is most important and relevant for the park/trail project and whether important topics are missing.

(Additional information is available in Appendix A – Finding Health Data about Your Community).

Photo courtesy of the U.S. Soccer Foundation

1.1 Identify potential partners

Identify partners who may play a critical role in achieving specific health outcomes. These groups and individuals may also assist in data collection. Check those that apply, brainstorm who else might be appropriate for this project, and develop a contact list of interested parties. A matrix listing interests and who represents those interests can help assure that your stakeholder list is balanced (Appendix B). The earlier they become involved, the more likely stakeholders will be able to help. Potential partners include the following:

- Health care providers, health departments, hospitals, local clinics.
- Mental health clinics; social service agencies, departments, or organizations; homeless shelters.
- Oversight health councils, health organizations, and coalitions.
- Nonprofit organizations (American Heart Association, American Cancer Society, etc.)
- University public health, nursing, and medical programs.
- University planning, architecture, and landscape architecture programs.
- Health insurance companies.
- Local park, planning, development, and public works departments.
- Police and emergency medical services.
- Adjacent property owners, neighborhood associations, and others served by a park.
- Walking and bicycling groups and participants in programs such as Park Prescriptions, Safe Routes to School, or Walk with a Doc.
- Task force or committee on persons with disabilities.
- Youth service organizations (YMCA of the USA, Boys/Girls Clubs, 4-H, etc.)
- Senior services.
- Veteran services.
- Faith-based organizations, churches, and youth groups.
- Local businesses with park or health interests.
- Community garden and farmer's market advocates.
- Other: _____

1.2 Review demographic data to construct a community profile

The community profile will help you understand who you are designing the park/trail for and help you identify trends (e.g., more families moving to your study area or an aging population). Information you might want to review includes:

- Basic population and density estimates and changes in the past 5-10 years.
- Age and sex distributions and changes in the past 5-10 years.
- Educational attainment levels.
- Employment and income levels.
- Race and ethnicity statistics.
- Living situations (e.g., household type, marital status).
- Other: _____

Photo courtesy of the National Park Service

Planning departments or local universities may be able to assist with the collection of demographic data. Presenting the data in a visual map format can have the most impact on community members. Resources for finding demographic data include the following:

- U.S. Census Bureau – a database that provides demographic information about communities within the United States. http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml
- Community Commons – an interactive mapping, networking, and learning utility for the broad-based healthy, sustainable, and livable communities' movement. Registered users have free access to GIS data layers and tables. http://www.communitycommons.org
- County Health Rankings – a tool that provides health data at the county level. http://www.countyhealthrankings.org
- National Environmental Public Health Tracking Network Built Environment Indicator "Access to Parks and Schools" – a resource that presents the number and percentage of population living within a half-mile of a public park by state and county in map and table formats. http://ephtracking.cdc.gov/showAccessToParksAndSchools.action

1.3 Collect disease prevalence and risk factor data to determine the health needs of the service population.[ii]

Contact your local health department for data most relevant to your area. Visit websites such as http://www.countyhealthrankings.org and http://www.cdc.gov/brfss for comparative data.

- Diabetes rates.
- Asthma rates.
- Cardiovascular disease rates.
- Depression hospitalization rates.
- Physical inactivity rates.
- Obesity rates.
- Smoking rates.
- Prescription, illicit drug, and alcohol abuse rates.
- Availability of healthy foods (e.g., grocery stores with fresh foods, farmers' markets).
- Other: _____

[ii] **Service population:** Establish the population to be served by identifying the segment(s) of the population or a geographic service area, the residents of which are expected to use the project. Geographic service areas can be based on political boundaries, proximity (those who live within a specified distance of a site), or access (those who have walk, bike, or driving routes to entrance points within a specified distance).

1.4 Identify community health goals that have been defined by your local health community, schools, and nonprofit organizations.

- Physical activity plans.
- Comprehensive plans.
- County health strategies.
- School district health strategies.
- Wellness coalitions.
- Other: _____

1.5 Agree on baseline data that address project goals and support monitoring and evaluation.

Develop a monitoring and evaluation strategy early on to document community infrastructure and health outcome improvements. (See Section 5 for additional guidance.)

- Number of park and/or trail users.
- Percent of population who can walk to a park entrance.
- Community satisfaction and perception ratings.
- Programs offered (events, classes, other).
- Health outcome changes (obesity rates, asthma rates, mental health rates).
- Other: _____

_____

Group Discussion[iii]

- Which items on your list rate better or worse when compared with rates for your state and the nation?
- Based on your findings, which community health concerns could be addressed by your project?
- Which are most important?

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Actions

- Are any partners missing from your list based on the identified community health concerns?
- Are any additional data needed for sound decision making?
- Are there additional methods for gaining and sharing the data, knowledge, and information with your community? Identify them.
- Is there an additional target audience that should be considered? Using your community profile, identify populations with specific or special needs.
- What key baseline conditions might be changed by the project? (It is important to document these before project initiation. It might be helpful to think of these in terms of your project goals.). Baseline information will help you determine if your project is successful and to evaluate the impact of your project.

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[iii] Review resources and case studies in appendices for additional ideas.

Section 2: Site Assessment

Geography, visibility, safety, and accessibility are all important factors that can influence the design and ultimate use of parks and trails. Understanding a project's setting points to opportunities and possibly problems that might otherwise be overlooked. Site information can be collected during a community mapping workshop (see example in Case Study 1). Park audit tools, available at sites such as Active Living Research (http://activelivingresearch.org/community-park-audit-tool-cpat), could help project partners with site assessments. (See Section 5.1 and Appendix B for more resources and details.):

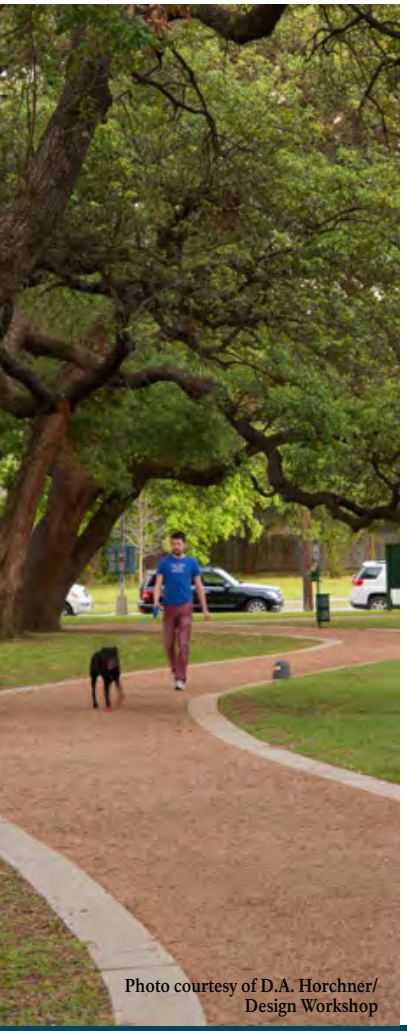


Photo courtesy of D.A. Horchner/ Design Workshop

A COMMUNITY MAPPING WORKSHOP is a planning technique that brings together project stakeholders to develop a map of park or trail site information, assets, and challenges. This map may be in paper or web form, and information can be collected through online research, park or trail audits (see Section 5.1 and Appendix B), and community institutional knowledge.

Benefits of hosting a community mapping workshop:

1. Taps into local knowledge and understanding of the project site.
2. Fosters a greater understanding of community and project challenges and opportunities.
3. Provides a tangible resource (a map) to incorporate and use formally or informally in the park/trail planning process.
4. Generates stakeholder buy-in and ownership.
5. Builds community and stakeholder trust in the planning processes.

2.1 Collect and map data about existing geographic conditions around the project location to identify opportunities and constraints to public health benefits.

Data about geographic conditions are often available through the U.S. Census Bureau (http://www.census.gov/geo/maps-data), the Environmental Protection Agency's EJView (http://epamap14.epa.gov/ejmap/entry.html), local tax commissions, and online mapping sites. Planning departments and local universities may be able to assist with the collection and presentation of this data. A site visit to supplement data available from other sources is strongly recommended.

Collect data about:

- Existing parks and trails.
- Publicly owned parcels.
- Surrounding streets and undeveloped rights-of-way.
- Adjacent land use.
- Site features and amenities.
- Topography.
- Vegetation (e.g., areas with trees, tree lines, and specimen trees).
- Water (e.g., streams, ponds, shorelines).
- Ecologically sensitive areas (e.g., old-growth forests, flood plains, wetlands, water features, and drainage ways).
- Potentially hazardous land unsuitable for development (e.g., flood plains, steep slopes, unstable soils, and brownfields [iv]).
- Cultural and historic sites and important scenic areas.
- Other: _____

[iv] Brownfield information is available at ATSDR's Brownfield / Land Reuse Initiative

Photo courtesy of Etienne Frossard, City Parks Alliance (Brooklyn Bridge Park)

2.2 Identify pedestrian entry points and routes within a half-mile of the site. Web-based mapping platforms can be used to collect this information.

- Identify bus and light rail routes and stops, particularly any within a half-mile of the project site.
- Examine park and trail entrances and walking and bike routes serving them.
- Pinpoint nearby destinations such as schools, libraries, restaurants, special interest sites, hotels, clinics and hospitals, and other parks/trails within one mile of the project boundary and map potential access routes.
- Recognize unsafe roads and deficient walkways as possible barriers.
- Identify streets with high speed limits and volumes that impact walking and bike routes to and within the site.
- Identify potential populations served within a half-mile radial buffer, compare those to the actual population served by mapping route distances less than a half-mile to entry points.
- Other: _____

[v] Some tools for doing this can be found at http://activelivingresearch.org/node/10638

[vi] Review resources and case studies in appendices for additional ideas.

2.3 Create conditions for people to feel safe will help ensure maximum and appropriate use of parks and trails.

Safety information can be found at your public safety department, law enforcement agencies, departments of transportation, and online at http://www.fbi.gov/about-us/cjis/ucr.

- Identify vacant or poorly maintained properties. (This can be found using a tax parcel map as a base map and conducting a driving survey of the neighborhood.)
- Evaluate the condition and use of existing park features such as exercise equipment, picnic tables, and amphitheaters.[v]
- Determine park visibility from a range of vantage points, especially from adjacent property, streets, and key points within the park.
- Evaluate park and trail signage.
- Identify nearby land uses or businesses that might affect park safety or security.
- Plot locations of existing light fixtures and quality of lighting along access routes, entry points, and areas designed for use during non-day-light hours.
- Determine crime rates for the area and map hot spots. (Contact your public safety department to request locational data on armed robberies, pedestrian and bicycle crashes with motor vehicles, etc.)
- Map pedestrian and bike collisions with motor vehicles within the site service area. (Contact public safety and transportation agencies for this information.)
- Other: _____

Group Discussion[vi]

- Which items or approaches could best be used to improve safety perceptions and conditions?
- Which items best support potential community health programming and best practices at this site?
- What are the top issues and opportunities you identified?

Actions

- Is more fieldwork needed?
- Who else could contribute information?
- What could be accomplished in the short term to address trail corridor and park safety issues?
- Who can do it?

A. Physical Health

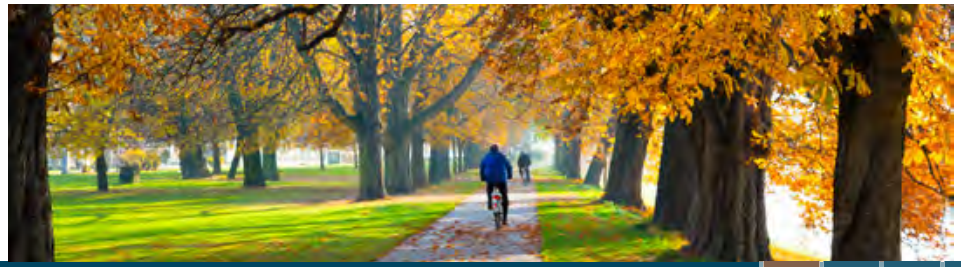
Parks and trails afford opportunities for outdoor recreation and active lifestyles. This section can help you establish diverse and connected facilities so that all visitors can experience better health. Physical health should be considered as part of the design and concept development.

3A.1 Encourage physical activity through park design, features, and amenities:

- Install diverse recreation amenities and space with varying levels of difficulty, such as trails and unstructured fields that support running games.
- Design park features and programs to attract a wide range of visitors throughout the day, week, and seasons of the year. Appeal to age groups, cultures, and ability levels represented in the targeted service area.
- Design entrances and, where appropriate, add or move entry points to promote universal access and encourage the use of active modes of transportation (walking and biking) for park access.
- Include signage that is fun, aesthetically pleasing, and informative about best exercise practices for youths and adults.
- Other: _____

3A.2 Promote equity (across race, age, sex, income, ability levels, and at-risk populations) in the distribution of outdoor recreational resources:

- Incorporate public opinion into park and trail planning via community meetings, surveys, websites, focus groups, social media, etc.
- Tailor park facilities to ensure relevance for target populations.
- Include health benefit considerations in criteria used to prioritize projects.
- Determine if new park/trail entry points would increase pedestrian/bike access, particularly for at-risk populations.
- Other: _____



3A.3 Institute programming and install facilities that will improve physical health outcomes for visitors:

- Include access to drinking water, seating, and shade.
- Evaluate healthy eating strategies such as healthy vending, farmers' markets, produce stands, community gardens, cooking demonstrations, and local restaurants.
- Encourage partnerships that provide free/low-cost physical activities and social programs.
- Work with local health providers and health insurance companies to establish formal walking and physical activity programs, such as Park Prescriptions and Walk with a Doc.
- Provide facilities that support activities such as classes, events, and clubs.
- Other: _____

3A.4 Refer to public health recommendations for environmental design:

- Assure water features are designed with proper filtration to avoid bacterial infections.
- Include shade protection to mitigate hot temperatures and reduce UV exposure.

Group Discussion[vii]

- What critical physical health goals have we identified?
- How can our project expand elements and programing opportunities to attract users at times when the park has few people using it? What elements could attract underserved and at risk populations?
- How can our project site visibility be increased?
- How can we expand the number of people who can walk or bike to park/trail entrances? _____

[vii] Review resources and case studies in appendices for additional ideas.

Photo courtesy of the National Park Service

Action

- Does the site master plan need to be updated?
- Does the planning/ development department need to flag projects for discussion of opportunities to increase site access and visibility?
- Are activities that have major impacts on the site anticipated?

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B. Social and Mental Wellness

Parks and trails also can create social and psychological wellness benefits for their users. Public spaces promote community involvement and social interactions, which can enhance mental health. Access to nature may reduce stress and restore the mind, leading to higher productivity at work and enhanced learning in school environments. [viii]

PROGRAMMING AND COMMUNITY EVENTS provide tangible and effective opportunities for healthy activity, mental stimulation, relaxation, social wellness, and health promotion in parks and on trails. Identify potential programs needed within your community and plan for including supportive facilities. Including programs, such as the following, can expand park use to a wider audience:

- ☐ **Park Prescription programs:** Doctor-prescribed outdoor activity in parks and trails.
- ☐ **Cyclovías:** Permanent or temporary street closures for pedestrian and bicycle traffic around or connected to a park or trail.
- ☐ **Trail programs:** Prizes for youth and family outdoor adventures in a park or on a trail.
- ☐ **Competitive geocaching:** Races that involve orienteering and the collection of hidden items throughout the park or trail.
- ☐ **Art in the park:** Musical performances, art exhibitions, festivals, theater in a park or on a trail.
- ☐ **Education:** Outdoor classes or special activities for students during or after school in a park or on a trail.
- ☐ **Fitness classes (by age and ability):** Regular fitness classes such as yoga, Zumba, cardio, running clubs in a park or on a trail.
- ☐ **Races:** Philanthropic or community races through a park or on a trail.

3B.1 Position the park/trail to serve as a gathering place for community members and facilitate social interaction. During planning, consider the following ideas:

- Install amenities such as seating, shade, drinking fountains, bike racks, picnic tables, pavilions, and open lawns that promote opportunities for congregation and socialization.
- Install features that facilitate and promote participation and inclusion of elderly persons and persons with disabilities into physical and social activities.
- Allow for permits to reserve park spaces and trails for group activities.
- Design parks to accommodate festivals, street fairs, and other community gatherings.
- Foster community and stakeholder collaboration in development decisions to create a strong sense of place.
- Provide signage and information about facilities, features, programs, and contacts; include a prominent place to post notices about community events, programs, and activities near park entrances and gathering points as well as online. Develop distribution plans for sharing information.
- Develop relationship frameworks that support "friends of the park/ trail" groups and volunteer activities.
- Other: _____

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[viii] See Green Cities: Good Health for an extensive literature review.

3B.2 Characterize the park/trail as a destination for relaxation:

- Provide strategically placed benches and other comfortable seating with pleasant views in both sunny and shaded areas.
- Limit noise pollution within park boundaries and include traffic calming measures.
- Consider water resources and features.
- Support inclusive programming such as yoga, meditation, and restorative walks.
- Other: _____

3B.3 Enhance park security for all users:

- Reinforce natural surveillance, establishing views into and within a site to allow observation and reaction to adverse events.
- Establish visual cues that clearly indicate acceptable areas for activity so that sensitive areas can be protected.
- Install lights in strategic and heavily trafficked locations within the site.
- Ensure properly designed and constructed universal access entrances and recreation areas within the site.

Group Discussion [ix]

- What facilities and amenities will appeal to our target populations?
- Which ideas make sense for this project?
- How can the ideas we have identified be leveraged to have the greatest impact on social and mental wellness? _____

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Actions

- Establish critical social and mental wellness goals that can help prioritize site planning opportunities. _____

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[ix] Review resources and case studies in appendices for additional ideas.

Photo courtesy of D.A. Horchner/Design Workshop

Section 4: Park and Trail System Planning

This section suggests broader ideas to consider as part of comprehensive planning and considerations about areas surrounding parks or trails. In addition to using these techniques as part of park and trail planning, they can be considered during development of comprehensive or general plans and subdivision reviews. The following overarching ideas are key to creating a system of linked sites that serve a whole community and provide opportunities to leverage park and trail access with other development initiatives.

4.1 Comprehensive/General Planning

- Create a prospective map of resource areas which the community wishes to protect (such as floodplains, stream corridors, steep slopes, cultural sites) that includes additional buffers needed to 1) protect the resource and 2) leverage its use for outdoor recreation.
- Establish overlay zones beyond the mapped resource areas that allow for a discussion of projects that impact those areas in a pre-design review among developers, planners, and resource experts.
- Evaluate proposed developments within overlay zones and near parks and trails for connectivity and better access to existing and future parks and trail corridors. Consider street pattern designs that decrease distances to parks and trailheads, decrease risks to pedestrians and bicyclists, and increase walk route choices.
- Coordinate public transit stops with park and trail entrances.
- Create or coordinate with existing community-wide walking and biking master plans.
- Consider park/trail adoption into local or state parks and recreation policy or system plans.
- Evaluate water management regulations to support the creation of greenways and neighborhood storm water detention facilities that also create wildlife habitat, recreation space, and trails. (The need for additional land can be a barrier to making storm water detention areas multifunctional; incentives for this approach may be needed.)
- Other: _____

4.2 Park/Trail Context and Subdivision Layout

- Space for parks and trails is most easily established early when dividing larger sections of land into smaller lots. Use overlay zones to identify development projects eligible for design guidance, concept reviews, and incentives.
- Establish pedestrian-friendly streets as park edges, with adjacent buildings having windows and entrances that face the park.
- Design streets to reduce distances to desirable destinations within walking distance of a park.
- Consider making sidewalks supporting park and trail access wide enough to accommodate groups of children walking together. Consider complete streets[x] as a design concept and guiding principle.
- Increase access to a park by limiting the distance between intersections for blocks close to the park.
- Reduce design speeds[xi] and use traffic calming for streets along park edges, near trailheads, and the pedestrian routes leading to entry points.
- Encourage mixed-use development, such as sidewalk cafes, small retail stores/services, and residential development with views into the park in adjacent parcels and across pedestrian friendly streets from the park boundary.
- Maximize the value, visibility, and accessibility of the park by placing narrow lots facing and across the street from a park.
- Other: _____

[x] Complete streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. For more information, see http://www.smartgrowthamerica.org/complete-streets-2014-analysis

[xi] A street's design speed is used to determine its geometric features such as lane width, tightness of curves, and edge treatments. Lower traffic speeds result in fewer crashes and less severe injuries. Consider design speeds under 25 mph. For more information see http://contextsensitivesolutions.org/content/reading/selecting-a/ and http://humantransport.org/sidewalks/SpeedKills.htm.

Illustration courtesy of the National Park Service

Group Discussion[xii]

- What general or specific planning efforts—walking/bike trail master plans, neighborhood plans, etc.—can our project enhance or support through promotion of health benefits of parks and trails?
- Other: _____

Actions

- Identify the related system plans in our project area that require further research.
- Contact the appropriate policy and decision makers to ensure your park or trail project is considered in relevant system plans.
- Initiate system planning, such as communitywide walking and biking master plans, if they do not already exist.
- Evaluate development review procedures and recommend incentives for storm water management techniques that include opportunities for outdoor activities such as play fields and trails.[xiii]
- Encourage project reviews that include creation of walking routes and park sites as part of the subdivision and development process.
- Establish procedures to encourage developments with pedestrian access routes to park and trail entrances and improved visibility in the park and on the trail.

[xii] Review resources and case studies in appendices for additional ideas.

[xiii] Expanding storm water management facilities so they also provide publicly accessible outdoor space may require additional land. Developers that decide to pursue such an approach can be supported by allowing the same number of units, but on smaller lots or other methods of encouraging good community design.

Section 5: Monitoring and Evaluation

Monitoring and evaluation measurements demonstrate whether a project has met expectations. If visitors see the need for additional features or programming, planners and technical staff may modify park design to suit users' needs and ensure the project's success. Data about a project's or policy's impact are needed to identify trends and inform future decisions. Most critical is the establishment of baseline conditions—how things are before the project begins. Using this workbook as a guide to collect data, collaborate with local partners to establish baseline conditions and assessment, monitoring, and evaluation procedures. Those partners might include university public health, nursing, medical, planning, architecture, and landscape architecture programs. Potential partners also include high schools, public health departments, insurance companies, and nonprofit health coalitions such as the Diabetes Association, American Heart Association, and American Cancer Society.

Photo courtesy of Cardno

5.1 Conduct predevelopment and post-development evaluations. Some potentially useful methods and tools for doing that include the following:

Methods

- Administer neighborhood and individual health and access surveys. http://activelivingresearch.org/node/11951
- Organize stakeholder photography exercises such as PhotoVoice to create before and after assessment of conditions. http://en.wikipedia.org/wiki/Photovoice
- Prepare for evaluation of project impact on specific health outcomes in conjunction with local health officials.
- Collect qualitative data such as quotes, photos, and stories.
- Conduct periodic walks to inspect the functioning and condition of the site and document findings.

Tools

- Community Park Audit Tool (CPAT). http://activelivingresearch.org/node/12700
- Path Environment Audit Tool (PEAT). http://activelivingresearch.org/node/10652
- Environmental Assessment of Public Recreation Spaces Tool. http://activelivingresearch.org/environmental-assessment-public-recreation-spaces-eaprs-tool
- Bedimo-Rung Assessment Tool–Direct Observation. http://activelivingresearch.org/brat-direct-observation-brat-do (If using this tool, please ignore the first section about hurricane preparedness and impact, unless applicable.)
- CDC Walkability Audit Tool. http://www.cdc.gov/nccdphp/dnpao/hwi/toolkits/walkability/index.htm
- Toolkit for the Assessment of Bus Stop Accessibility and Safety. http://www.pedbikeinfo.org/pdf/PlanDesign_Tools_Audits_EasterSealsBusStopAccess2006.pdf
- Active Neighborhood Checklist. http://activelivingresearch.org/sites/default/files/Protocol_ActiveNeighborhoodChecklist.v2.pdf
- Analytic Audit Tool and Checklist Audit Tool. http://activelivingresearch.org/analytic-audit-tool-and-checklist-audit-tool
- Environmental Pedestrian Audit. http://planningandactivity.unc.edu/RP1.htm
- Walkability Checklist. http://live.heartfoundation.org.au/SiteCollectionDocuments/HFW-Walkability-Checklist.pdf
- Other: _____

Photo courtesy of Cardno

5.2 Work with local medical and public health providers to document changes in medical conditions. Tracking changes in activity and perceptions is also useful.

- Survey and analyze park and trail use via user counts and community questionnaires. http://activelivingresearch.org/node/10654
- Record vandalism incidents and nearby crime rates.
- Track volunteer hours.
- Scan park/trail usage at established intervals and report trends.
- Use this workbook to periodically update your community health profile and goals.
- Other: _____

_____

_____

_____

Group Discussion[xiv]

- What are key indicators for future evaluation?
- Who in your community has the resources to evaluate and report your project's impact after completion? After 2 years? After 5 years?

_____

_____

_____

_____

Actions

- Outline the steps your group will take to collect predevelopment and post-development evaluations.

_____

_____

_____

_____

_____

[xiv] Review resources and case studies in appendices for additional ideas.

Photo courtesy of Cardno

Appendix A

Finding Health Data about Your Community: A How-To Guide

We strongly urge you to work with your local health department when developing your community profile. Asking for their help will give you points of contact and alert the department to the issues and opportunities presented by your project. A goal of this workbook is to connect the public health community to those planning, designing, and providing places that support healthy lifestyles.

Developing a plan for the future requires knowledge of past and current conditions. Knowing the health status of your community members is an essential part of planning for healthier communities. Using data to create a health profile of your community will identify important local health issues so that you can best address them through planning. There are three basic steps:

1. Know the health issues affecting your community – Find and interpret health-related data.
2. Prioritize needs – Identify the most critical causes of death and disease in your community. Use the key health priorities to position park and recreation facilities/services in your community.
3. Take action – Suggest policies and develop park and recreation facilities to address specific community needs and promote a higher quality of life. Understand the role parks can play in mitigating environmental hazards, such as floods, and providing ecosystem services, such as cooling heat islands.

Resources for Local Data Relevant to Planning and Public Health

- Your state, county, or local health department. Your local health department and its website often have health resources for your community. They might have health information for your county or even for the census tract(s) where your community is located (census tracts are small, statistical subdivisions of a county). Sometimes county or local health departments also monitor this information or have created profiles based on data available from the state.
- Your state, county, or local public safety department. Your public safety and state law enforcement departments keep records of crime rates, types of crime, and incidence, and they often have these data organized and available by neighborhood, census tract, or community statistical area. Police departments can also be a good resource for traffic crash statistics. They might have data identifying the types of crashes, the areas with the highest crash rates, and contributing factors such as alcohol use.
- Your state, county, or local transportation department. Not all places have an independent department of transportation. In some places, planning, construction, and maintenance of the transportation network is handled by a department of public works or related agency. These departments might also be a good resource for records on traffic crashes, as well as information on traffic safety improvements that have been done in your community.
- Your local park and recreation department. It is important to know where parks are located, their access points, what is in them, and programs that occur there. The parks and recreation department can provide information about programs and parks; for example, who are the program targets and who uses the parks and programs. Such information can be used to identify poorly served groups. Geographic Information Systems (GIS) departments can assist the local agency in developing powerful graphics showing the half-mile radial buffer around park boundaries and then the half-mile walk route network to park entrances. This is a useful technique to illustrate where new entrances and walk routes can greatly expand access to a particular site or where there are gaps in the park system. If correlated with demographic data, it can also show who does and does not have park access. The technique can also be used to determine the percent of a jurisdiction's population living within a half-mile walk of a park entrance.
- Your Environmental Protection Agency regional office and state, regional, and local agencies for environmental management. These organizations can identify the locations of hazardous waste sites and areas with poor air quality. They will likely have maps delineating areas of concern that might impact design strategies.

HINT: Finding data for the smallest available geographic area (e.g., census tracts) is one of the best ways to create a health profile of your community. Those data provide localized insights.

County Health Rankings and Roadmaps

The County Health Rankings and Roadmaps website ranks counties based on a model of population health that emphasizes the many factors that, if improved, can help make communities healthier places to live, learn, work, and play. You can use the website to compare your county to others in your state and see rankings for counties in other states.

- Data viewable by county.
- Comparison provided to state and national benchmarks.
- http://www.countyhealthrankings.org/

  Step 1: Open the Rankings tab to learn about data and methods and explore the rankings data.

  Step 2: Within the Ranking tab, enter in your county to see its health outcomes (morbidity and mortality) and health factors (health behaviors, clinical care, social and economic factors, and physical environment).
- **Optional:** Scroll down the main page and click on "Build Your Own Roadmap." Building your roadmap will provide you with the tools and resources to help make your community a healthier place to live, learn, work, and play.

Community Health Status Indicators (CHSI)

CHSI provides an overview of key health indicators for local communities. CHSI gives detailed information about your county and a comparison to counties similar in population composition and selected demographics.

- Data viewable by county.
- Comparison of preselected peer counties.
- http://wwwn.cdc.gov/CommunityHealth/

  Step 1: On the left side, choose the most current year, your state, and your county.

  Step 2: Click Display Data to see demographics for the selected county.

  Additional data: Data are also available on the left side in the yellow column. Click on each link to find

  - Demographics—population size, density, living in poverty, age, and race.
  - Summary measures of health—average life expectancy, all causes of death, self-rated health status.
  - National leading causes of death—broken down by age group and race.
  - Relative health importance—your county's health status when compared to its peers.
  - Vulnerable populations—prevalence of people in your county who may face unique health risks and barriers to care.
  - Risk factors for premature death—a bar graph of leading factors for premature death such as lack of exercise, lack of eating fruits and vegetables, obesity, high blood pressure, and diabetes.
  - Access to care—the number of Medicare/Medicaid beneficiaries and uninsured; service availability.

HINT: Sharing data from the risk factors for premature death section is a simple way to show in graph form the risk factors in your county for the leading chronic disease killers in the United States.

CDC Chronic Disease Indicators (CDI)

CDI provides a set of 97 indicators that allow states, territories, and large metropolitan areas to uniformly define, collect, and report chronic disease data that are important to public health practice. In addition to providing access to state-specific indicator data, the CDI website serves as a gateway to additional information and data resources.

- Data viewable by state and select counties.
- Comparison by multiple selections http://www.cdc.gov/cdi/index.html

  Some of the categories for which data are available include

  - Physical activity and nutrition.
  - Tobacco and alcohol.
  - Cancer.
  - Cardiovascular disease.
  - Diabetes.
  - Arthritis.
  - Overarching conditions (i.e., poverty, high school completion, health insurance, etc.).
  - Other diseases and risk factors (i.e., asthma, dentist visits, flu vaccinations, etc.).

  Step 1: Select your state/area. Some counties are represented, but not all.

  Step 2: Select one area (or more) for comparison. To compare multiple areas, hold the *Control* key as you select areas.

  Step 3: Select a category of indicators from the drop-down menu or select *All Categories* to see them all.

  Step 4: *Click Search.*

Interpreting the data:

- A table will show indicators within a health category, the prevalence of each in your area of interest, and the prevalence in your comparison area of choice.
- You can view indicator definitions by clicking on the View Definition link. The link will give you the background, significance, Healthy People 2020 objectives, and more.

Behavioral Risk Factor Surveillance System (BRFSS)

BRFSS is a state-based system of health surveys that generates information about the health and health risk behaviors of people for cities, counties, and states. BRFSS data can help identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs.

- Data viewable by state and metropolitan area.
- Comparison if "All" is selected.
- http://www.cdc.gov/brfss/brfssprevalence/index.html

Some of the areas covered in BRFSS include

- Alcohol consumption.
- Asthma.
- Cardiovascular disease.
- Diabetes.
- Physical activity.
- Overweight and obesity, measured as body mass index (BMI).

Step 1: Search by specific Metropolitan Statistical Area (MSA) or select All to compare your MSA with others around the country.

Step 2: Choose year and click Go.

Step 3: Choose one of the listed topics and a particular subtopic as appropriate.

Interpreting the data: Results will appear in table and graph form. In the table, percentages are weighted to population characteristics and the "n" represents actual number of survey responses.

Note: The results page may have links to county-specific data.

HINT: If you'd like to see a quick graph of data comparing a selected MSA with state and nationwide data on health status, diabetes, flu vaccination, current smoking, binge drinking, and obesity, click the Quick View Charts link on the left side of the screen (under the CDC logo).

Youth Risk Behavior Surveillance System (YRBSS)

The Youth Risk Behavior Surveillance System (YRBSS) monitors six types of health-risk behaviors (listed below) that contribute to the leading causes of death and disability among youth. YRBSS includes a national school-based survey conducted by CDC as well as surveys conducted by state, territorial, and local education and health agencies and tribal governments.

- Data viewable by state, local site (typically city or MSA), territories, or other populations (Navajo).
- Comparisons available by clicking View 2 Locations on the upper right of the results page.
- http://nccd.cdc.gov/youthonline/app/default.aspx

Information on the following risk behaviors is available:

- Behaviors that contribute to unintentional injuries and violence.
- Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including human immunodeficiency virus (HIV) infection.
- Alcohol, tobacco, and other drug use.
- Unhealthy dietary behaviors.
- Inadequate physical activity.
- Prevalence of obesity and asthma.

Step 1: Select your location (above the U.S. map) by state, territory, or other populations. You can also choose your state by clicking on the map. Note: Below the map you can toggle between high school and middle school survey data, but you cannot view both at the same time. Click *Go*.

Step 2: Select all questions, specific questions, or years under *Choose Table Content*. You can also filter data under *Filter Data* in the left column.

HINT: Click on Location then select Local, and you may find a drop-down selection for your borough, county, or city. This will make the data more specific to your community.

Step 3: Filter by Sex, Race, Grade, or Totals Only under View Data by Demographics.

Other useful sites include the following:

American Community Survey from the U.S. Census

http://www.census.gov/programs-surveys/acs/

Environmental Public Health Tracking Network

Provides raw numbers and percent of population living within a half-mile of a park boundary for states and counties. http://ephtracking.cdc.gov/showAccessToParksAndSchools.action (see links on left "Search Community Design Data")

Sortable Stats 2.0 - Interactive Database for Behavioral Risk Factors and Health Indicators

This database has useful state-level data in 31 categories, including death rates by diseases, health burden, risk factors, and preventive services. Public health data are available by state and region. The site enables comparison with other states, regions, and the nation.

http://wwwn.cdc.gov/sortablestats

Community Commons

Community Commons is an interactive mapping, networking, and learning utility for the broad-based healthy, sustainable, and livable communities' movement. Registered users have free access to

- Thousands of map-able GIS data layers and tables displayed at varying geographies for all communities in the United States.
- An application program interface that provides free access to data.
- Contextualized mapping, reporting, data visualization, and sharing abilities.
- Searchable profiles of place-based community initiatives and multi-sector collaborations. http://www.communitycommons.org

Alliance for Biking & Walking Benchmarking Reports for 2010, 2012, and 2014.

In conjunction with the Centers for Disease Control and Prevention's Healthy Community Design Initiative, the Alliance publishes the biennial benchmarking report to collect and analyse data on bicycling and walking in all 50 states, the 52 largest U.S. cities, and a select number of midsized cities. The report combines original research with over 20 government data sources to compile data on bicycling and walking levels and demographics, safety, funding, policies, infrastructure, education, public health indicators, and economic impacts.

http://www.peoplepoweredmovement.org/site/index.php/site/memberservices/C529

Landscape Architecture Foundation: Landscape Performance Series Fast Fact Library

The Landscape Performance Series Fast Fact Library is a searchable collection of landscape benefits derived from published research. Each includes a citation and links to the full article when available.

http://landscapeperformance.org/fast-fact-library

Active Living Research

A report on co-benefits of activity-friendly community design settings including open spaces, parks, and trails based on a literature review. The report includes an analysis of evidence availability and strength.

http://activelivingresearch.org/making-case-designing-active-cities

Photo courtesy of Cardno

Appendix B: Example Matrices

Stakeholder Matrix

A stakeholder matrix (**Figure 1**) helps illustrate issues related to parks or trails that are a concern to various stakeholder groups. The stakeholders would be all the groups and organizations that could be affected by the outcomes of the project. To use this matrix, list all the stakeholders in the first column and list all the identified issues across the columns at the top. Mark the boxes where a stakeholder has identified an issue of concern. Commonalities among groups and issues will emerge, helping your group strengthen partnerships. This example focuses on social and safety issues. It is not an exhaustive list. In addition to other community concerns, storm water management, tree cover, and other environmental issues may also surface with your project.

	no park access	graffitti everywhere	no bus stops	feel unsafe	dangerous to walk to school	diabetes prevalence	30% middle schoolers overweight	busy streets in neighborhood	no trails near neighborhood	
neighborhood association	x	x		x	x			x	x	
parks and recreation dept.	x	x		x					x	
community health clinics						x	x		x	
health dept or council						x	x		x	
school staff					x	x	x	x		
parent teacher assoc.	x			x	x		x	x	x	
transit department			x							
police department		x		x				x		
local bike/pedestrian advocacy	x			x				x	x	
planning / land use dept.	x		x	x					x	
senior programs	x	x	x	x		x			x	
people with disability advocates	x		x					x	x	
YMCA	x					x	x		x	
Silver Sneakers	x					x			x	

Figure 1

Photo courtesy of the National Park Service

Design Program Matrix

A design program matrix (**Figure 2**) is used to ensure that project programs are inclusive. It can identify strengths and weakness in a design program. For example, it is desirable to have multiple park uses and activities available for different groups during the day and across seasons. Some facilities appeal to many groups, others are more targeted. The design program matrix helps identify which areas need additional focus within the design program.

Targets are focus areas that a community wishes to make sure the design program addresses. For example, focus areas could be times of the day, seasons of the year, demographic groups, or other areas the community wants addressed. Each row receives a score based on the number of opportunities it has within the design program. Lower numbers indicate areas where the design program is weakest; higher scores indicate where the design program is stronger.

Opportunities are the facilities that typically address that target. These can be determined by interviews, surveys, or the use of similar opportunities in sites within the community. They can also receive scores. High scoring opportunities indicate activities and areas with broad uses.

In figure 2, the morning, winter, and those older than 70 years appear to have fewer opportunities within the design program. As a result, a community might try to identify additional opportunities that would attract people during those periods or that appeal to this group.

	Opportunity																	
Target	Target Score	tot lot	playground	exercise station	volleyball	tennis	basketball	open field	soccer	baseball	softball	nature walk	seating (sun)	seating (shade)	checkers/ chess	croquet	community garden	picnic area
Opportunity Score		8	8	11	7	10	9	14	7	7	9	15	12	11	7	8	13	13
Time of Day																		
morning	5	1		1								1	1				1	
early afternoon	7	1	1					1				1		1	1			1
late afternoon	15	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	
evening	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Season																		
Winter	6			1			1	1				1	1					1
Spring	16	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1
Summer	12	1	1	1		1	1	1		1	1	1		1			1	1
Fall	15	1	1	1	1	1	1	1	1		1	1	1		1	1	1	1
Age Group																		
Under 10	10	1	1					1	1		1	1	1	1			1	1
10 to 14	11		1			1		1	1	1	1	1	1	1			1	1
15 to 19	13			1	1	1	1	1	1	1	1	1	1	1			1	1
20 to 34	13			1	1	1	1	1		1	1	1	1	1		1	1	1
35 to 54	11			1	1	1	1	1				1	1	1		1	1	1
55 to 70	10			1		1		1				1	1	1	1	1	1	1
Over 70	8							1				1	1	1	1	1	1	1

Figure 2

Adjust / add additional categories and opportunities as appropriate for project
Primary use (suggest basing this on community surveys - current and desired uses)
Totals highlight targets and opportunities that are strongly and weakly represented

Appendix C: Health Impact Assessment Resources

A health impact assessment (HIA) is a process that communities use to improve public health through community design. HIAs are useful in determining what a project, program, or policy's potential effects are on community health. HIA practitioners urge project screening as an important step to determine whether an HIA adds value to a project, program, or policy with respect to health. Typical HIA criteria to consider include:

- The significance of a project, program, of policy's potential health impacts – positive or negative.
- The value of added information from an HIA.
- The feasibility of conducting an HIA.

Using this workbook raises understanding and appreciation for the health benefits that can be derived from parks and trails. The workbook can be used to identify and leverage park and trail benefits for your community. It is designed to be an effective, rapid assessment tool that takes only a few days to complete and costs little to no additional funding. After this workbook is completed, it is possible that the findings could lead to a decision to conduct a comprehensive HIA. A comprehensive HIA would require community leaders' support, funding, and professional services and expertise from a team with experience in this area.

Examples of completed HIAs that included parks, trails, or greenways (as of spring 2013) include the following:

1. Atlanta BeltLine, Atlanta, GA , 2007. http://www.healthimpactproject.org/hia/us/atlanta-beltline
2. East Bay Greenway, Oakland, CA, 2007. http://www.healthimpactproject.org/hia/us/east-bay-greenway
3. Clark County Bicycle and Pedestrian Master Plan, Clark County, Washington, 2010. http://www.clark.wa.gov/public-health/reports/documents/FINAL_RapidHIA.pdf
4. Marquette County Ice Age National Scenic Trail Expansion, Marquette County, Wisconsin, 2011. http://www.co.marquette.wi.us/Departments/Health/pdf/Health%20Impact%20Assessment%20of%20the%20Ice%20Age%20Trail.pdf
5. Knox County Health Department Community Garden, Knox County, Tennessee, 2010. http://www.healthimpactproject.org/hia/us/knox-county-health-department-community-garden
6. HOPE VI to HOPE SF: San Francisco Public Housing Redevelopment, San Francisco, 2009. http://www.pewtrusts.org/~/media/assets/2011/01/hopevitohopesfsanfranciscopublichousingredevelopment.pdf?la=en
7. St. Louis Park Comprehensive Plan HIA, City of St. Louis Park, Minnesota, 2011. http://www.health.state.mn.us/divs/hia/docs/slp_hia.pdf
8. Adams Park Master Plan, Douglas County, Nebraska, 2012. http://www.omahacso.com/files/8313/7401/2026/APMA_Final_Report_2012-11-01_TRANSMIT-Small.pdf
9. Quequechan River Rail Trail, Fall River, Massachusetts, 2012. http://www.mapc.org/quequechan-river-rail-trail-hia
10. Planning for Parks, Green Space, and Trails in Greenville's West Side, Greenville, South Carolina, 2013. http://www.pewtrusts.org/~/media/assets/2013/03/01/hiaofparktrailandgreenspaceplanningingreenvillesc.pdf?la=en

To see a comprehensive list of HIAs completed in the United States, go to: http://www.healthimpactproject.org/hia/us. Health Impact Project catalogs and links reports for these HIAs.

- Click on *List.*
- Choose *Complete.*
- Choose the *Sector* drop-down list to select *Built Environment.*

Case Studies

Appendix D: Case Studies

National Park Service community planners work in local communities with a range of partners to plan and develop close-to-home recreation opportunities such as parks, trails, and open space. Health care practitioners and providers are often the most challenging stakeholders to engage in project planning.

There is increasing evidence nationwide that parks, trails, greenways, and open space can be effective tools to help the U.S. combat our physical inactivity epidemic. Research is being conducted to determine how the public uses parks, how far they travel to access parks, and which facilities or amenities most encourage physical activity.

The *Parks, Trails, and Health Workbook* builds on this research. A collaborative exercise in the workbook helps parks and recreation planners and community health professionals better understand local health issues and, consequently, design and construct parks, trails, and open space facilities that could specifically address those issues.

During the development of the *Parks, Trails, and Health Workbook*, the National Park Service (NPS) and Centers for Disease Control and Prevention (CDC) project managers coordinated with five communities that pilot tested this workbook approach. Each project stakeholder group worked through the workbook sections to determine its overall value in facilitating stakeholder collaboration and to identify public health elements that should be considered in park or trail developments. Workbook sections cover community health profiles, local site information, local site planning, park and trail system planning, and monitoring and evaluation.

These two case studies demonstrate pilot use of the *Parks, Trails, and Health Workbook* in two communities. They are good examples of how to make use of this workbook.

Case Study 1

Tularosa Creek Discovery Trail
Mescalero Apache Tribe, New Mexico

Mescalero Apache Boys and Girls Club participants at trail design workshop.

The Mescalero Apache Tribe in south-central New Mexico was a recipient of a New Mexico Department of Health (DOH) Community Transformation Grant award. To help determine the success of the grant, the Mescalero Apache agreed to meet these population performance measures by 2016:

- 5% decrease in prevalence of childhood obesity,
- 5% increase in prevalence of children's healthy eating behaviors, and
- 5% increase in prevalence of children's increased physical activity behaviors.

The Mescalero Apache Healthy Kids Coalition and the DOH applied for technical assistance from the NPS Rivers, Trails, and Conservation Assistance program to help plan a 0.75-mile trail along Tularosa Creek and assess other walking opportunities within the Mescalero community.

The NPS Rivers, Trails, and Conservation Assistance program and the Healthy Kids Coalition used the *Parks, Trails, and Health Workbook* to:

- Better understand the health issues facing the Mescalero Apache people;
- Engage a broader section of health partners including Indian Health Services, senior programs, and health education and mental health services; and
- Help stakeholders understand how properly designed trail corridors could help address a multitude of health issues.

Our Process:

1. After an orientation to the workbook steps, the Mescalero Healthy Kids Stakeholder Group collected community health data from various sources. The Community Transformation Grant coordinator organized and compiled the health data over a two-month period.
2. The stakeholder group held a workshop to share data and learn about trail design as it relates to physical, mental, and social well-being. Workshop participants engaged in discussions about how the Tularosa Creek Discovery Trail could affect positive change in physical activity among youth and hypertension and depression among adults. Emphasis was on health profile, physical, social, and mental health site planning and monitoring. Large-scale park and trail system planning was beyond the scope of the project.
3. Mescalero residents were engaged in park and walkability audits (Rural Active Living Assessment and Physical Activity Resource Assessment).
4. The stakeholder group developed a draft trail plan. The Mescalero community was invited to participate in a workshop to walk the trail alignment and refine healthy trail ideas.
5. A final Tularosa Creek Discovery Trail Plan was presented to the Mescalero Tribal Council and adopted by tribal resolution.

Key Outcomes:

- The Tularosa Creek Discovery Trail became the anchor for other informal walking paths within Mescalero lands, including the Diabetes and Senior walking routes.
- To foster social and mental health, the trail will become a gathering place featuring a drumming/singing circle; Mescalero War Chiefs memorial; and places for community gardens, flea markets, and rustic pavilions.
- To address physical activity, discovery play pockets are envisioned for climbing, balance, swinging along with new traditional playgrounds.
- A liquor store will be relocated away from the trail corridor.
- Tribal members performing community service will provide trail and walking path maintenance.

Case Study 2

Birch Bay Drive and Pedestrian Facility Project Whatcom County, Washington

A Birch Bay bicyclist after the huge winter storm and especially high tide hit the shoreline road.

Birch Bay is a rural, unincorporated, coastal community in northwest Whatcom County, Washington, and a popular destination for outdoor recreation in summer months. The current population is 8,400, a mix of long-term residents, retirees, and young families; this doubles in summer months with an influx of tourists and seasonal residents. Designated as an urban growth area in the county comprehensive plan, it is anticipated that Birch Bay will experience significant population growth in coming years.

The Whatcom County Health Department (WCHD) made Birch Bay a priority area for efforts promoting healthy communities and sought support from NPS-RTCA because of

- higher rates of obesity among the local population compared with those of populations in other areas of the county and
- a lack of safe environments for walking and biking.

The Birch Bay Drive and Pedestrian Facility Project is a comprehensive community and environmental legacy project that includes shoreline restoration, flood hazard mitigation, and road repair, in addition to the construction of a two-mile pedestrian pathway (trail) and beachfront park. Although many people use Birch Bay Drive as a place to walk, bike, and recreate, particularly in summer months, no

safe pedestrian facilities currently exist along the waterfront thoroughfare. Pedestrians alternately share a narrow shoulder with bicyclists or walk along a narrow dirt track adjacent to the road or through parking lots. Community members are actively engaged in the project and WCHD and Whatcom County Public Works have worked with a citizen-led group in the planning of the facility and in promoting its use and manifold benefits to the community.

The *Parks, Trails, and Health Workbook* provided a framework for WCHD and NPS-RTCA to

- organize planning efforts to include community health among the decision-making criteria for the project and to engage the Birch Bay Waterfront Group as active participants in that work,
- share the group's community health assessment and goals with the community and partners,
- create a baseline assessment to compare with post-construction evaluation of the trail's health impacts, and
- develop a structure for assessing health impacts that will lead to the creation of a standard practice for WCHD involvement in active living projects.

The Process:

1. WCHD and NPS-RTCA encouraged the group to undertake a healthy community assessment for Birch Bay. The group established the following goals for the project:
   - evaluate public health impacts of a shoreline trail;
   - increase community support for beach restoration;
   - recommend site design that will enhance health benefits;
   - provide a health perspective to inform plans for future parks, trails, and community design; and
   - recommend programs to support the new facility.
2. Generally following the NPS-CDC workbook, WCHD created a custom data worksheet for the group to finalize and compare Birch Bay to the rest of the county and country. The group wanted additional data to better understand the extreme seasonal fluctuations in population and the social and economic impacts of tourism and to establish a pre- and post-trail baseline.
3. The section on monitoring and evaluation strategies inspired the group to start a program of quarterly pedestrian/bike counts (using the National Bike and Pedestrian Documentation Project methodology; http://bikepeddocumentation.org) to establish a baseline and build community awareness of the shoreline and trail project. As one member said, "Collecting data is part of the infrastructure." More than 30 volunteers participated in the counts, including families with young children and teens.
4. WCHD consolidated the assessment data and graphed the information for the group's discussion and use.
5. An introduction to community health and the draft Birch Bay health assessment were presented to the community in coordination with a project update by the public works department.
6. From the data collected and current literature, WCHD prepared a fact sheet, "Community Health Impacts of Birch Bay Shoreline Enhancements," which is used by the community group and partners to inform and advocate.

Key Outcomes:

The community health assessment was an opportunity for the health department to share pertinent health data with the community. It also provided an opportunity to educate the community and partners, such as the public works department, parks and recreation district, and Whatcom County Council, about the connection between the built environment and health.

The Birch Bay group and WCHD have been invited to provide recommendations on the trail design based on findings from the workbook process.

The assessment efforts sparked renewed interest in, and provided evidence for the health benefits of, an additional beachfront park and community center. Community members advocated acquiring additional property for the park, and the Whatcom County Council approved $2,500,000 for land acquisition and park development.

The Blaine/Birch Bay Parks and Recreation District recently embarked on a bicycle and pedestrian master planning process. The plan will include regional routes (trails and/or bike lanes) to connect communities and a network of trails, pedestrian paths, and/or bike lanes that will improve internal connections within communities.

WCHD was also able to engage Birch Bay representatives in a process to provide public health input to the update of the Whatcom County comprehensive plan, including recommendations to set higher standards for park and trail access in urban growth areas.

Appendix E: Workbook Summary Report Example

Promoting the potential health impacts of your park or trail project is critically important. Community leaders, project partners, and grant funders may desire a summary report or document that captures the important health issues facing the community and how your proposed park or trail project aims to address those issues. Although a standard template does not exist, this example, created by the Birch Bay Waterfront Group in Whatcom County, Washington, captures the summary of potential health impacts, health outcomes described in a logic model, and recommendations for project implementation.

Executive Summary Example

Community Health Impacts of Birch Bay Shoreline Enhancements

In January 2013, the Whatcom County Health Department and the Birch Bay Waterfront Group were invited to participate in a national pilot test of a tool developed by the Centers for Disease Control and Prevention and the National Park Service to assess potential impacts on health attributed to parks and trails. The tool offered guidance on data collection, measures of health and safety, and ways to use this information to maximize health benefits of parks and trails projects. The Birch Bay Waterfront Group provided community input on the selection of factors to assess and final recommendations. This fact sheet summarizes the results of that process.

Summary of Potential Health Impacts

Based on current literature and public health data, changes to the Birch Bay shoreline would likely have an overall positive impact on the health of the community.

Physical Activity

Bike lanes, a dedicated pedestrian facility, and increased access to open space along the Birch Bay waterfront will increase opportunities to engage in physical activity through recreation and active transportation, especially for vulnerable populations such as children and the elderly. In turn, this can reduce the risk of obesity and help prevent chronic diseases such as diabetes and cardiovascular disease. Given the relatively high obesity risk in Birch Bay, the benefits of physical activity may help reduce health disparities in Whatcom County.

Key Data:

- Availability, proximity, size, and density of recreational facilities, such as parks and trails, are all correlated with increased physical activity levels.
- Neighborhood connectivity, street design, and the presence of bicycle and pedestrian infrastructure are also linked to increased physical activity.
- Birch Bay residents are among those most likely to be obese in Whatcom County, affecting 28%–30% of the adult population.

Economic Development

The economic benefits observed in communities that invest in trails and recreation spaces will likely provide the same kind of boost to the Birch Bay economy through increased tourism, more local business activity, and increases in home values. Local economic growth may have some positive effect on health outcomes associated with income and can help reduce stress for business owners.

Key Data:

- Trails and green spaces significantly increase property values and attract home buyers.
- Up to 56 existing tourism-based businesses in Birch Bay could benefit economically from shoreline enhancements.

Safety

Proposed changes made to the Birch Bay shoreline will likely enhance the safety of users of Birch Bay Drive. Separated pedestrian walkways and safe crossing facilities can reduce collision risks and prevent injuries.

Key Data:

- Off-street walkways can prevent up to 88% of pedestrian-motor vehicle collisions.
- On average, bike/pedestrian users of Birch Bay Drive range from about 40 people in less-trafficked areas to more than 150 people at high-volume locations per hour at peak times.

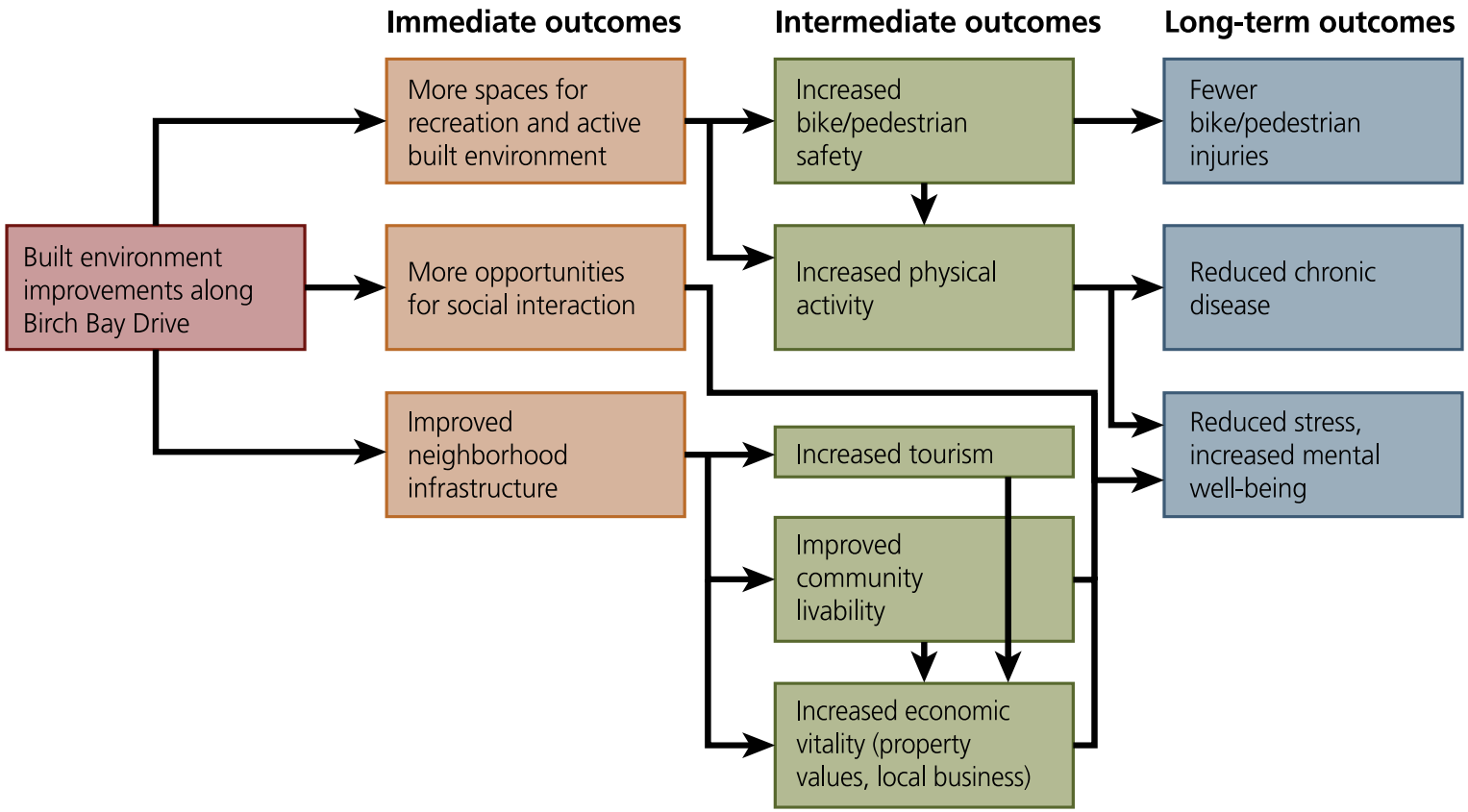
Social Cohesion

Outdoor spaces for recreation and physical activity provide physical and mental health benefits. They help reduce stress, provide opportunities for social interaction, and foster social support among neighbors, leading to increases in social cohesion. Enhancing the community outdoor spaces along the Birch Bay waterfront would likely improve the social environment of the community and lead to better well-being for residents.

Key Data:

- Park spaces have been shown to reduce stress by fostering social support and by creating a space for relaxation and physical activity.
- Communities that are more walkable are known to promote a healthier social environment.
- Communities with better social connectedness tend to have better health outcomes.

HEALTH OUTCOMES Associated with Shoreline Enhancements



Recommendations

Design/Engineering

- Install signage, pedestrian crossing facilities, and appropriate traffic calming at high-volume pedestrian/bike locations
- Provide highly visible bicycle parking
- Consider incorporating fitness stations into pedestrian pathway design
- Design to promote use by all types of user groups, especially older adults and young children

Community Use/Maintenance

- Continue to collect community data on use of facilities, including bicycle and pedestrian counts on Birch Bay Drive
- Encourage use of shoreline facilities through educational and physical activity programs
- Create maintenance plan that includes community groups and volunteer-led programs
- Include permanent facilities—such as picnic areas, restrooms, drinking fountains, event space—to attract year-round users and promote social interaction

Long-Term Connections

- Plan for connectivity between Birch Bay Drive and upland neighborhoods to enhance walkability and decrease car trips
- Promote community use of outdoor space through festivals, events, and other civic engagement opportunities.

This summary of community health impacts was prepared with assistance from members of the Birch Bay Waterfront Group Healthy Communities Assessment Team, Whatcom County Health Department, and the National Park Service Rivers, Trails & Conservation Assistance Program: Alex Stone, Doralee Booth, John Gargett, Joyce Dippold, Judy Osman, Kathy Berg, Melissa Morin, Nicole Willis, and Terry Terry.

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Please keep us informed as to whether this workbook was helpful to more explicitly incorporate health into your parks and trails planning projects. If you have any suggestions, successes, case studies, or photos to share, please send them to the authors:

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Park Service

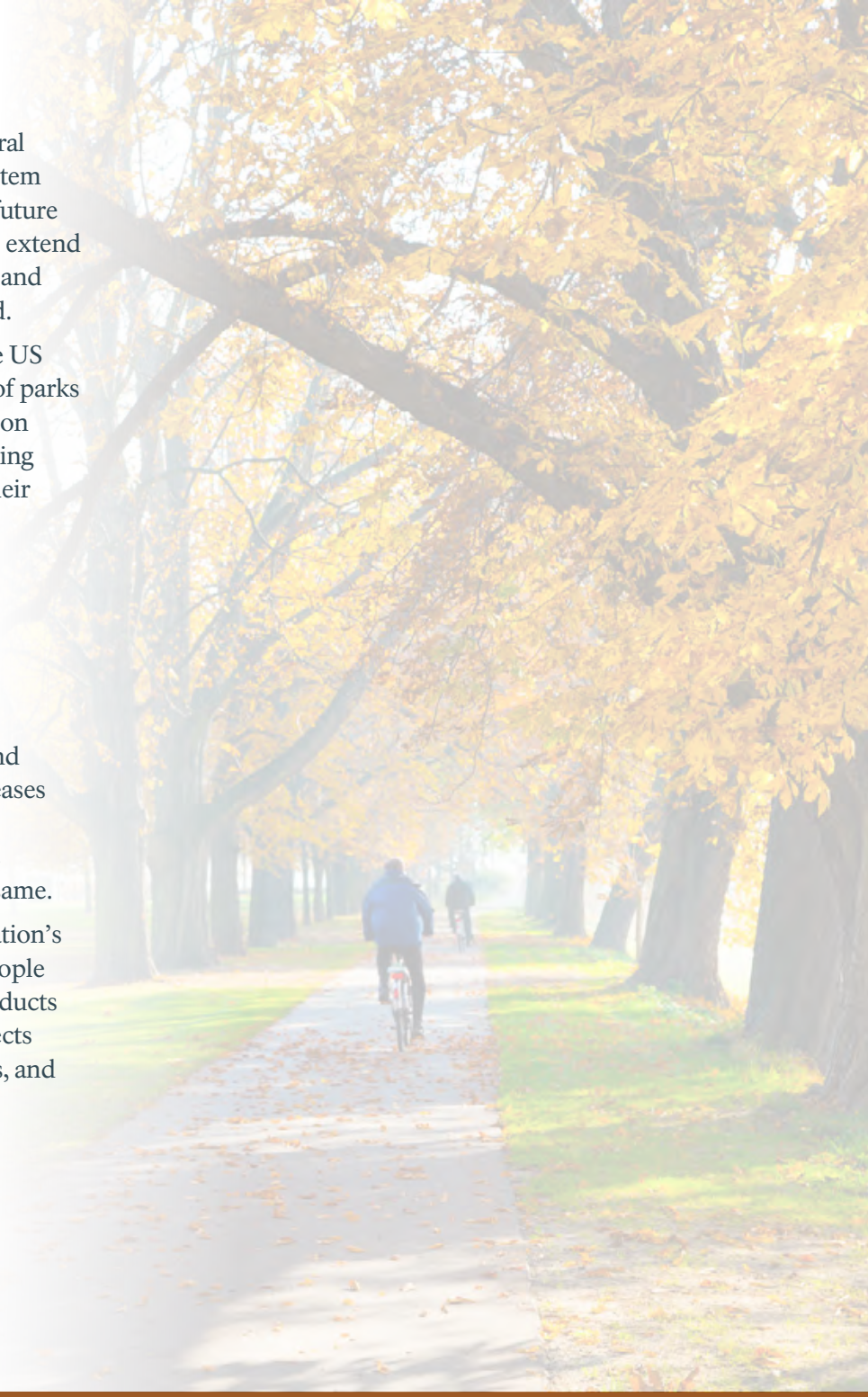
The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The National Park Service's Healthy Parks Healthy People US program, established in 2011, intends to reframe the role of parks and public lands as an emerging, powerful health prevention strategy. With this renewed focus on health, we hope to bring about lasting change in Americans' lifestyle choices and their relationship with nature and the outdoors.

Centers for Disease Control and Prevention

CDC works 24/7 to protect America from health, safety and security threats, both foreign and in the U.S. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease and supports communities and citizens to do the same.

CDC increases the health security of our nation. As the nation's health protection agency, CDC saves lives and protects people from health threats. To accomplish our mission, CDC conducts critical science and provides health information that protects our nation against expensive and dangerous health threats, and responds when these arise.



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