

## Statewide Trails & Pathways Initiative

*Goal #1: Make Delaware walkable and bikeable by creating a premier interconnected network of multi-use bicycle and pedestrian trails and pathways.*

*Goal #2: Design, construct and maintain a sustainable network of trails and pathways.*

The benefits of trails and pathways extend well beyond their physical boundaries by revitalizing communities, helping to keep local economies strong, increasing access to healthy outdoor recreation and providing places for active transportation. Investing in trails and pathways makes our communities more desirable places to live.

Communities around the country know that trails are good for business. They have reaped the rewards as trail users buy from small businesses and rely on local restaurants and lodging providers. Study after study demonstrates the many societal

*“... one of the best ways we can improve our quality of life, and promote healthy lifestyles at the same time, is to make our state more walkable and bikeable. Building on the strong foundation of existing trails and greenways already in place, we can make Delaware one of the most walkable and bikeable states in America.”*

Governor Jack Markell  
State of State  
January 19, 2012

and economic benefits are directly attributed to trail development. Medical research has shown that our health improves when we are physically active. Economic research has shown that a trail can bring at least \$1 million annually to a community, depending on how well the town embraces their trail system.<sup>i</sup>

Trail-related pursuits are the number one outdoor recreation activities in Delaware with 74% of Delaware households walking or jogging; 53% bicycling; 34% hiking; 23% canoe/kayaking; 18% mountain biking; and 13% horseback riding. Based on a comparison of findings (from previous SCORP surveys published in 2002 and 2008), the trend for trail related activities continues to be

popular among the recreating public.<sup>ii</sup> The overwhelming demand for linear facilities resonates throughout every SCORP Planning Region as well as all five oversampled municipalities.

In his 2009 Executive Order #6, Governor Jack Markell required all future investments in transportation infrastructure to evaluate and include, if reasonably cost effective and logistically achievable, accommodations for bicycle and pedestrian facilities. In 2011, Governor Markell extended his support for bike and pedestrian pathways by launching the Statewide Trails & Pathways Initiative ([www.trails.delaware.gov](http://www.trails.delaware.gov)) to create a premier system of recreational and alternative transportation facilities for our residents and our visitors. The Delaware General Assembly has answered the call in Fiscal Year 2012 and Fiscal Year 2013 funding \$7M and \$13M respectively in trail and pathway projects. While the earliest projects are being completed, there is much more work to be done to achieve an interconnected trail system that both meets the public's desire for recreational trails, and, provides active non-motorized transportation.

***Recommendation:***

*Increase the system of interconnected trails and pathways by extending existing trail hubs within municipalities and State Parks. Construct new or upgrade fifty miles of shared-use trails in state parks.*

*Develop concept plans with focus on identifying new trail and pathway corridors that extend existing trails into county regions.*

*Allocate a steady and reliable funding stream for trails and pathways that builds on and extends the existing network.*

*Coordinate planning efforts to connect neighborhoods with places of work, schools, businesses, parks and other community facilities.*

*The New Imperative:  
Building the Case for  
Trails and Pathways*

A hundred and fifty years ago individuals were responsible for managing their own sewerage, garbage and water. Public investments dedicated to these functions, were born of serious public health issues and concerns. Public health in turn improved with publicly-funded,



centralized delivery and disposal systems. Today, we are facing new imperatives that include epidemics of obesity, cancer, respiratory and cardiovascular diseases and too much screen time on computers, televisions and mobile devices.

Living active lifestyles to combat these modern epidemics can reach the greatest number of people and have the largest impacts through community design and building community connections to trails and pathways. Personal health and wellness, as well as community livability are enhanced and improved by expanding the availability of trails and pathways. When trails and pathway are viewed as basic services that must be incorporated into our community fabric, the healthy choices of walking and biking become second nature. Parks, trails and recreation services nurture a sense of belonging, ownership, and community pride among people who live and work together. Trails and pathways play a significant role in fostering community connection both in spirit and in activity.

*Quality of life & healthy lifestyles*

While park settings tend to have a wide range of facilities to encourage physical activity, research has revealed that there are specific types of facilities that promote

*Parks that have trails and wooded areas are seven times more likely to be used for physical activity than parks*

higher levels of physical activity than others. Park users engage in higher levels of physical activity in parks that have playgrounds, sports facilities, and trails.

Furthermore, parks that have either paved or unpaved trails and wooded areas are seven times more likely to be used for physical activity than parks that did not have these features.<sup>iii</sup>

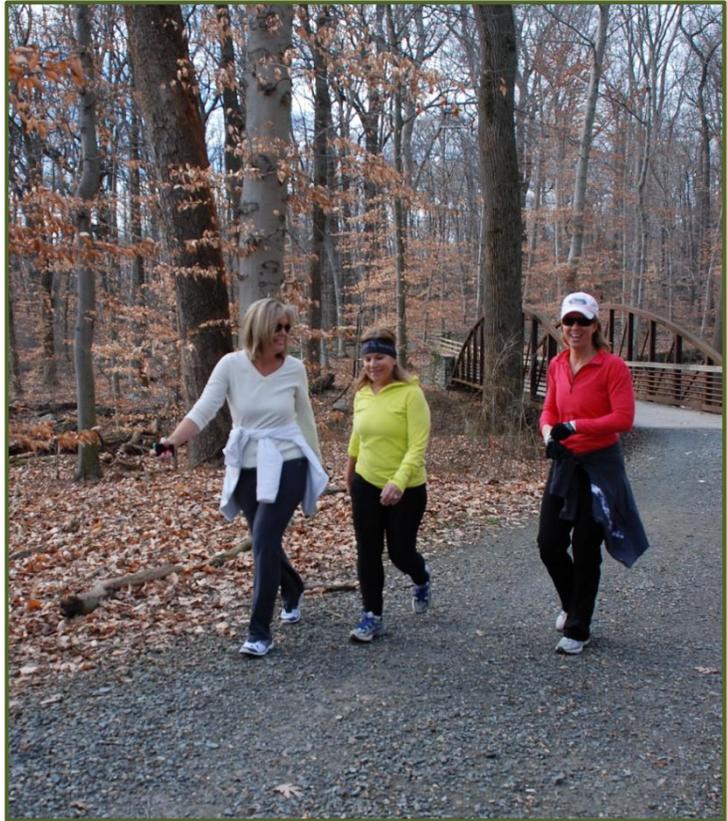
A community connected by trails, pathways, and sidewalks promote, and results in, active living and healthy lifestyles. Both research and public demand underscore that trails and pathways are a necessity in our communities. Safe, convenient trails and pathways near homes are known to motivate people to walk and bike more, in turn, improve the health of children and adults. A complete pedestrian network provides a means for communities to be more active and healthy.

This is critical when you consider the obesity epidemic nationally and in Delaware. In Delaware, nearly 60% of adults and 30% of children are overweight or obese. Regular physical activity, which can be achieved by trail walking, biking and running, helps maintain a healthy weight and prevent heart disease, type 2 diabetes, and other chronic diseases.<sup>iv</sup> Parks and trails provide children outlets for engaging in positive energetic



activities. Studies show evidence demonstrating that healthier citizens means reduced overall healthcare costs.<sup>v</sup>

Amidst competing priorities in tough economic times, park and recreation facilities may sometimes be regarded as ‘nice to have’, rather than a necessity. Park and recreation services are an essential component of the fabric of our communities, significantly contributing to our quality of life. Creating active, inviting and comfortable parks will entice residents and visitors to stop, explore, and become stewards these



public spaces. The unique feel and appearance of a community parks are essential to create a strong sense of place, pride and stewardship.

### *Environmental return*

The environmental return of increasing bicycle and pedestrian pathways are obvious: no carbon emissions from walking and bicycling, reduction of vehicles usage and vehicle miles travelled on Delaware roads-thereby reducing emissions of greenhouse gases and improving air quality. There are even quantifiable impacts in reducing vehicle miles traveled and supporting alternate transportation modes, such as:

- Traffic congestion wastes nearly 3.9 billion gallons of gas per year in the U.S.
- For every 1 mile pedaled rather than driven, nearly 1 pound of carbon dioxide is saved.

While Delaware's sources for poor air quality are primarily derived from out-of-state facilities, investment in recreation trails and shared pathways provide opportunities to reduce mobile greenhouse gas sources and provide credits to the State's Improvement Plan under the Clean Air Act.<sup>vi</sup>

Lastly, trails and pathways provide opportunities for visitors and Delawareans to experience the State's natural amenities, such as wildlife, wetlands, forests, streams and rivers without detrimental impacts to the environment. They are also a conduit to immerse children in nature.

### *Economic rewards*

Nationally, trail-related expenditures are reported to range from \$1 to \$75 per day, depending on the trail mileage covered. A network of trails and pathways will boost local businesses and tourism. Trail economic impacts studies around the country, including one of the Junction & Breakwater Trail between Lewes and Rehoboth, demonstrates that trail users pump additional revenue into local marketplaces with their food, lodging and gear purchases. Analyses show that bicycle projects create an average of 11.4 jobs per million dollars spent, compared to just 7.8 jobs for road only



projects. In a Junction & Breakwater Trail user survey, 49% of the users reported that their purchases of a bike, bike supplies, footwear or clothing were influenced by their trail use. And, 53% said they purchased soft goods in conjunction with a J&B Trail trip. Returns are high for the relatively low cost investment for trail development. This is good news for local businesses.<sup>vii</sup>

Delaware is in the geographic center of the heavily populated Mid-Atlantic region, a short day trip from major U.S. cities. Approximately 11.8 million people live within an hour drive of our borders in Maryland, Pennsylvania, New Jersey and Virginia. This central location delivers tremendous potential to boost trail tourism for both day visitors, overnight tourists and residents alike.

A number of reports show the impact of outdoor recreation on the economy. Nationally, the recreation industry contributes \$730 billion annually to the U.S. economy and supports nearly 6.5 million jobs. When trail facilities are in place, overnight visitors spend an average of \$98/day in trail communities, while local trail users spend an average of \$13 for each trail use. Bicycling alone generates \$289 billion annually in retail sales and services, and \$88 billion in annual state and national tax revenue. The outdoor recreation industry accounts for over 1.1 million jobs. Outdoor recreation sales (gear & trips) generate \$325 billion in annual returns. This is more than the economic returns from pharmaceutical/medicine manufacturing (\$162 B) and legal services sector(\$253 B).<sup>viii</sup>

The Delaware real estate sector promotes the value of trails in its sales advertisements highlighting properties that adjoin trails or are near state and local



parks. Studies have shown that homes closer to bike paths are more valuable than comparable properties elsewhere.<sup>ix</sup> Aside from property value increases, households reap economic benefits by using these close to home pathways. The average American household spends \$7,179 per year on owning and driving their cars. Using trails and pathways, on a round trip commute of 10 miles, bicyclists save around \$10 daily.<sup>x</sup>

### *Growing Demand for Walkable and Bikeable Communities*

A 2011 survey by National Association of Realtors found Americans favor walkable mixed-use neighborhoods. A growing majority prefer these types of neighborhoods over ones that require more driving between home, work and other destinations. To support this information, an independent survey found that nearly half of drivers ages 18-34 are driving less and 66% said they would drive less if transportation alternatives were more readily available.<sup>xi</sup>

*Walking and biking rank in Delaware's top 5 most participated in outdoor activities*

The number of people who bicycle to work nationwide has increased 64% in 10 years, though in Delaware, the number remains very low (0.37%). The bicycle



commuter demographic is distributed evenly among all income groups. Yet, the percent of bicycle trips for recreational purposes remains relatively high in Delaware (53%) and rises with increasing income.<sup>xii</sup>

### *Local Demand: What do Delawareans want?*

Walking and biking rank within the top five most participated in outdoor activities in Delaware. Trails and pathway facilities are in high demand as half of all Delaware residents want close to home trail-related opportunities.



According to the 2011 Outdoor Recreation Participation and Trends Survey (ORPTS 2011), 74% of survey respondents expected a member of their household to participate in walking or jogging; 53% participate in bicycling; 34% in hiking; and 18% in mountain biking. Based on a comparison of findings (from the 2002 and 2008 published surveys), the trend for trail-related activities continues to be widespread among the recreating public. This trend is mirrored at the national level, running, jogging and trail running are the most popular outdoor activities with almost 51 million participants while biking (road, mountain and BMX) and hiking are also in the top five most popular outdoor activities.<sup>xiii</sup>

Despite the state's diverse population, varying landscapes types and regional variations in outdoor recreation needs, the need for linear facilities – trails and paved pathways for walkers, joggers, hikers, and bicyclists – ranked highly in every corner of Delaware. And, these activities ranked high among different ethnic groups and across age categories. This informs citizens, advocates, planners and policymakers that more

linear facilities are essential to keep pace with the population growth and the public's participation in trail-related outdoor activities.

Delawareans are clear in their overwhelming demand for trails and pathways. Sixty-six percent of survey participants reported that bike and pedestrian facilities (trails and pathways) are very important funding priorities for state and local policymakers. To strengthen this finding, 68% of respondents say funding for trails/parks and conservation areas should be a priority even during economic hard times.

***Recommendation:***

*Identify gaps in trail and pathway systems to prioritize critical community connections.*

*Identify needed land and support the development of future trail extensions and connections that encourage healthy lifestyles and increase recreational opportunities.*

*Conduct a detailed spatial analysis to determine geographical representation of trail, pathway and sidewalk related needs.*



***Existing Conditions***

Currently, there are 506 miles of trails and multi-use pathways in our state - 149 miles of trails in the State Park System. Though there are over 100 miles in our communities, this is not enough to satisfy the public's expressed need for biking, hiking, walking, running, and nature exploration, or routes for non-motorized transportation.

Outdoor Recreation Participation and Trends Survey participants clearly reported that they are not walking, biking, or jogging to a great degree because they perceive that roads are too dangerous and because community facilities/services are often too far

away. These sentiments are reinforced by the increase in statewide bicycle crashes reported each year. In other words, there are insufficient, safe bicycle and pedestrian facilities like trails and pathways that advance biking or walking to schools, businesses and community centers.

***Recommendation:***

*Advocate and identify funding sources to conduct local walkability and bikability analyses to assist local communities in trails and pathways planning and development.*

*Provide the most up to date trails and pathways data during the comprehensive planning processes to demonstrate the necessity of close to home community connections.*

*Conduct trail volume and use surveys to understand and enhance trail use.*

*Promote and support a bicycle and shared-use trail safety campaign aimed at educating bicyclists/drivers and bicyclists/walkers about rules and responsibilities of sharing facilities.*

*Develop a cohesive trail and pathway wayfinding signage system that is comprehensive, coordinated and functional. Sign functions may be categorized as: informational signs showing orientation; directional and trailhead signs guiding users to locations/features/landmarks; interpretative signs explaining natural and cultural information; and regulatory signs proscribing trail and pathway use, behavior and local laws.*

***Principles of Sustainable Trail Design & Development***

Designing and constructing sustainable trails is of paramount importance to maintaining the designed experience, health, and life span of the trail system. Many trail management problems, from erosion to user conflict, stem from poor trail planning and design. A poorly designed trail, no matter how well it is built, will degrade at a faster rate and cause problems for managers and trail users. All trail users affect the trail surface and surrounding environment, especially when trails are poorly planned and constructed. Those impacts range from vegetation loss, soil displacement, erosion, water quality problems, and disruption of wildlife.



The basic principles of sustainable trails include the following: maximize natural and cultural resource protection; ability to support current and future use; minimize adverse effects on plant or animal life in the area; require little future rerouting and long-term or reoccurring maintenance; and reduce staff time and funds spent on trail maintenance. In essence, greater level of sustainability relates directly to water and use management. Adopting these principles ensures a more accessible and sustainable trail system for the future.

Designing a sustainable trail and trail systems requires the analysis and evaluation of the following elements and factors: cultural resources; endangered or sensitive plant and animal species; occurrence and health of native plants and animals; mature growth forests; natural drainage; topography, soils, slope and grade changes; ease of access from control points such as trailheads; user type and volume; user safety; and providing interesting experiences within the landscape. A sustainable trail system will offer trail users landscape and experiential variety.

Current research suggests that the most effective way to minimize the environmental effects of trail uses is to build environmentally sustainable trails. A

sustainable trail balances many elements including location, expected trail use, construction methods, grade changes (grade reversals) and employing quality construction techniques and material.

***Recommendations:***

*Develop a unified statewide trail classification and marking system that provides direction on trail care, trail widths, and surface type.*

*Conduct trail and pathway grade analyses to identify existing unsustainable and inaccessible trail sections.*

*Adopt universal sustainability and trail maintenance standards for trail and pathway design and construction.*

*Share trail standards and design knowledge and skills to counties, municipalities and volunteer organizations to cultivate a widespread trail building community.*

## Statewide Trails & Pathways Initiative

*Goal #1: Make Delaware walkable and bikeable by creating a premier interconnected network of multi-use bicycle and pedestrian trails and pathways.*

*Goal #2: Design, construct and maintain a sustainable network of trails and pathways*

<i>RECOMMENDATIONS</i>	<i>IMPLEMENTERS</i>	<i>AGO</i>
1. Increase the system of interconnected trails and pathways by extending existing trail hubs within municipalities and state parks.	DNREC, DelDot, local parks and recreation departments, County and Municipal planners	
2. Develop concept plans with focus on identifying new trail and pathway corridors that extend existing trails into county regions.	DelDOT, DNREC, county partners, trail users, bike commuters	
3. Allocate a steady and reliable funding stream for trails and pathways that builds on and extends the existing network.	DNREC, DelDot, local parks and recreation departments, County and local officials, trail advocates	
4. Coordinate planning efforts to connect neighborhoods with places of work, schools, businesses, park and other community facilities.	DNREC, DelDot, Office of State Planning & Coordination, County and Municipal planners	

<p>5. Identify gaps in trail and pathway systems to prioritize critical community connections.</p>	<p><i>DNREC, DelDot, local parks and recreation departments, County and Local government officials, trail advocates, trail users, volunteers</i></p>	
<p>6. Identify needed land and support the development of future trail extensions and connections that encourage healthy lifestyles and increase recreational opportunities.</p>	<p><i>DNREC, DelDot, local parks and recreation departments, County and Municipal planners</i></p>	
<p>7. Conduct a detailed spatial analysis to determine geographical representation of trail, pathway and sidewalk related needs.</p>	<p><i>DNREC, DelDot</i></p>	
<p>8. Conduct trail volume and use surveys to better understand and enhance trail use.</p>	<p><i>DNREC, DelDot, local trail managers</i></p>	
<p>9. Advocate and identify funding sources to conduct local walkability and bikability analyses.</p>	<p><i>DNREC, DelDot, DRPS, County and Local officials, Sussex Outdoors, DE Heal, Trail users, trail advocates</i></p>	
<p>10. Promote and support bicycle and shared-use trail safety campaign.</p>	<p><i>DNREC, DelDot, DRPS, DE Trails and Pathways Initiative partners</i></p>	
<p>11. Develop a unified statewide trail classification and signage marking system.</p>	<p><i>DNREC, DelDot, County and Municipal officials, local parks and recreation</i></p>	

	<i>departments, County and Municipal planners, trail advocates</i>	
12. Conduct trail and pathway grade analyses to identify unsustainable and inaccessible trail sections.	<i>DNREC, DelDot, Trail managers, volunteers, UD-Center for Disability Studies, DPH</i>	
13. Adopt universal sustainability and trail maintenance standards for trail and pathway design and construction.	<i>DNREC, DelDot, DRPS, trail managers, trail builders, trail advocates, trail users, volunteers</i>	
14. Share trail standards and design knowledge and skills with counties, municipalities and volunteer organizations.	<i>DNREC, DelDot, DRPS, local parks and recreation departments, trail builders, trail advocates, volunteers</i>	

<sup>i</sup> Delaware Trails & Pathways Initiative; Economic Benefits of Trails and Pathways-  
[www.trails.delaware.gov/EconomicBenefits.aspx](http://www.trails.delaware.gov/EconomicBenefits.aspx)

<sup>ii</sup> 2011 Delaware Outdoor Recreation Participation and Trends Survey, Delaware State Parks

<sup>iii</sup> Parks & Recreation in Underserved Areas; A Public Health Perspective, NRPA

[http://www.nrpa.org/uploadedFiles/nrpa.org/Publications\\_and\\_Research/Research/Papers/Parks-Rec-Underserved-Areas.pdf](http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Parks-Rec-Underserved-Areas.pdf)

<sup>iv</sup> Gordon-Larsen, P., et al. Active commuting and cardiovascular disease risk. *Archives of Internal Medicine*, 169, 1216-1223. July 13, 2009. <http://archinte.ama-assn.org/cgi/content/short/169/13/1216>

<sup>v</sup> Wang, G., et al. Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails. *Health Promotion Practice*, v.6, no.2, 174-179. April 2005. [www.americantrails.org/resources/health/trailinvest.html](http://www.americantrails.org/resources/health/trailinvest.html)

<sup>vi</sup> Delaware Trails & Pathways Initiative; Environmental Benefits of Trails and Pathways-  
[www.trails.delaware.gov/Benefits.aspx](http://www.trails.delaware.gov/Benefits.aspx)

<sup>vii</sup> Delaware Greenways, Junction & Breakwater Rail-Trail 2011 Trail Use Study and Economic Analysis, January 2012

<sup>viii</sup> Outdoor Industry, *The Outdoor Recreation Economy*.

[www.outdoorindustry.org/pdf/OIA\\_OutdoorRecEconomyReport2012.pdf](http://www.outdoorindustry.org/pdf/OIA_OutdoorRecEconomyReport2012.pdf)

<sup>ix</sup> Racca, D. and Dhanju, A., Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas. Center for applied Demography and Research. November 2006.

[http://www.ce.udel.edu/dct/publications\\_files/Rpt.%20188%20Bike%20Paths.pdf](http://www.ce.udel.edu/dct/publications_files/Rpt.%20188%20Bike%20Paths.pdf)

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<sup>x</sup> Commute solutions online calculator. October 4, 2011. October 31, 2011.

<http://commutesolutions.org/external/calc.html>

<sup>xi</sup> Davis, B and Dutzik, T., Transportation and the New Generation; Why Young People Are Driving Less and What It Means for Transportation Policy, April 2012.

[http://www.uspirg.org/sites/pirg/files/reports/Transportation%20%26%20the%20New%20Generation%20vUS\\_0.pdf](http://www.uspirg.org/sites/pirg/files/reports/Transportation%20%26%20the%20New%20Generation%20vUS_0.pdf)

<sup>xii</sup> 2011 Delaware Outdoor Recreation Participation and Trends Survey, Responsive Management, Inc.

<sup>xiii</sup> Outdoor Recreation Participation Report 2012-

[http://www.outdoorindustry.org/images/researchfiles/OIA\\_OutdoorRecreationParticipationReport2012.pdf?170](http://www.outdoorindustry.org/images/researchfiles/OIA_OutdoorRecreationParticipationReport2012.pdf?170)