Toward A Regional Trail Network

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Executive Summary

The Regional Plan Association (RPA) is a non-profit organization focused on research and advocacy for the long-term viability of the New York metro region. Having released three prior and influential Regional Plans the RPA is currently at work on their Fourth Regional Plan. Included among its numerous stated goals is the re-evaluation and expansion of a regional trail network. Working to assist them towards this end the RPA tasked our Hunter College studio with:

- Cataloging existing trails in the region
- Reviewing trail systems and precedents throughout the nation
- Proposing recommendations for developing a more robust regional trail network

We approached these tasks through a combination of methods, including: research and the review of best practices; close study of existing trails and trail organizations; GIS analysis; and outreach to stakeholders in the field.

In profiling the 31-county New York metropolitan area we highlighted its numerous jurisdictions - with close to 800 independent municipalities and 9 Metropolitan Planning Organizations - as well as its changing demographics.

An underlying theme of our studio was to help change the popular perception of what a trail is and what a trail network can be. As such we defined a trail broadly as a “road for human powered transportation,” serving the primary role of connectivity. Just as the New York metro region has an extensive network of roads for cars we envisioned a complementary network of roads for people. We created a trail classification system made up of Class 1, Class 2 and Class 3 trails. Drawing from various sources at the state, county and municipal level we created a GIS map of the region’s existing Class 1 and Class 2 trails and provided a brief summary as to the state of the current trail network. As connectivity was of prime importance we further analyzed the network’s connection to commuter rail stations. Lastly we outlined the extensive benefits that trails and an integrated trail network can bring, from transportation, to health to economic development as well as helping to address issues of equity.
In laying out our recommendations for a regional trail network we broke them into 2 categories: strategy recommendations and implementation recommendations.

Our 4 specific strategy recommendations serve as tools that can be used to help elucidate where the trail network could be expanded.

- **Strategy 1 - Existing Rights of Way**
- **Strategy 2 - Connecting Population Centers**
- **Strategy 3 - Gap Analysis**
- **Strategy 4 - Street Safety**

For each strategy we provided an example—a specific trail recommendation that can serve as a case study for putting the strategy into use.

Our implementation recommendations are approaches and policies to help facilitate and supplement the creation of both specific trails and the trail network as a whole. They include:

- Improving bike amenities
- Funding
- Coalition building & branding

As a successful example of an inter-regional trail network, and a specific example of coalition building and branding put into action, we highlighted The Circuit in the Philadelphia region and outlined the lessons it provides for the New York metro region.

We closed with our vision for an extensive and integrated regional trail network, the Tri-State Trail Blueprint and shared the working draft of our interactive web-enabled regional trail map.

Taken all together we hope our report can provide the RPA with a detailed road map as to how a regional trail network might be implemented.
Chapter 1
The Regional Plan Association

The Regional Plan Association (RPA) has been a significant force in the New York metropolitan region for nearly 100 years. Established in 1922, the non-profit organization is focused on research and advocacy for the long-range viability of the region, with a particular emphasis on transportation, economic development, and environmental sustainability. Through the release of its three prior regional plans the RPA has strongly influenced the development of the 31-county metro area, advocating for such notable achievements as the formation of the Metropolitan Transit Authority, the location of the George Washington Bridge, and the development of Gateway National Recreation Area.
The First Regional Plan

The Regional Plan of New York and its Environs was introduced to address growing concern around the urban core’s overpopulation and expansion. Released in 1929, the plan was the first to consider the New York metro region as a whole, with a detailed inventory of facilities, infrastructure and resources. In addition to calls for the establishment of planning boards and the preservation of open space, the plan advocated for the development of an expansive and interconnected transportation network, with a particular focus on highways.

The Second Regional Plan

The second regional plan was released as a series of reports in the 1960s and suggested a move away from further suburban growth towards a concentration of employment in urban centers. Though still calling for some additional highway expansion the plan also made a strong push for transit oriented development, as a tool to both preserve open space and to address inequality throughout the region.

The Third Regional Plan

A Region at Risk, released in 1996, called for the “greening” and revitalization of urban parks and streetscapes, the conservation of open spaces, and the expansion of municipal and regional rail systems. The plan aimed to achieve these goals via five major campaigns, including:

- Concentrating central growth
- Improving mobility
- Creating a regional greensward network

Which included a specific call for the expansion of greenways throughout the metro area.
The Fourth Regional Plan

The upcoming Fourth Regional Plan is “a multi-year initiative to create a blueprint for our region's growth, sustainability, good governance and economic opportunity for the next 25 years.” It aims to create dynamic, livable and resilient communities, expand the region's economic prosperity in an equitable and sustainable way and reform the structures needed to implement smart planning decisions. Among its numerous stated goals for the Fourth Regional Plan the RPA seeks to re-evaluate the role of a regional trail network.

Our Mission

Working towards this end the RPA has tasked u with:

- Cataloging existing trails in the region

- Reviewing trail systems and precedents throughout the nation

- Propose recommendations for developing a more robust regional trail network.
Chapter 2
The New York metropolitan region is massive, spanning 3 states, 31 counties and close to 800 municipalities. Though all of the 31 counties have strong ties to New York City as an employment, entertainment and transportation hub, they encompass a variety of landscapes and are home to people with diverse lifestyles. As distance from the region's dense urban core increases, the development pattern gradually grows more suburban and eventually rural in many places, with locations in Sussex and Hunterdon Counties, New Jersey, and Sullivan and Ulster Counties, New York successfully preserving a farming lifestyle. Demographics range dramatically throughout the area, with counties in Long Island and Connecticut among the richest in the United States and others, like the Bronx in New York City, economically depressed. To build a successful and meaningful regional trail system, proposals should respect the differing populations, demographics and terrains of this large region.
New York

Official jurisdictions in New York State can be divided into counties, cities, towns and villages. The RPA’s New York catchment area is made up of 14 counties containing 130 cities and towns and 176 villages. Counties in New York have administrative power and provide services similar to those of a municipality with home rule. The town is the baseline political unit in the state; with the exception of residents living in cities or Indian reservations, all of New York’s citizens live in a town and as such it is towns that are responsible for the primary functions of government. The only legal difference between a city and a town is that cities tend to have their own charter. A town cannot be in a city, or vice versa, while villages are incorporated areas that fall entirely within one or two towns’ boundaries. They can provide some municipal services themselves, though anything they do not do is the responsibility of the surrounding town. This confusing political structure is compounded by the frequent occasion in which villages and surrounding towns have the same name.
<table>
<thead>
<tr>
<th>COUNTY</th>
<th># Of Cities or Towns</th>
<th># of Villages</th>
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</thead>
<tbody>
<tr>
<td>Bronx County</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Kings County</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Nassau County</td>
<td>5</td>
<td>64</td>
</tr>
<tr>
<td>New York County</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Orange County</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Putnam County</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Queens County</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Richmond County</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Rockland County</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>Suffolk County</td>
<td>10</td>
<td>33</td>
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<tr>
<td>Sullivan County</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Ulster County</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Westchester County</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>130</strong></td>
<td><strong>176</strong></td>
</tr>
</tbody>
</table>

Figure 2.1
New Jersey

The RPA’s New Jersey catchment area includes 14 counties and 396 municipalities, with individual powers differing by the level of government. New Jersey municipalities have significant latitude in regards to self rule, possessing independent local governments and planning boards to deal with localized issues. Counties on the other hand have no legislative role and are limited in their capability; those county-wide functions that do exist focus mainly on basic regional activities such as water management, as well as advocating for sound planning on the regional level. The number of municipalities within a county can vary widely. Bergen County has a total of 69 municipalities in an area of 247 square miles, with many municipalities in the eastern half under 3 square miles in area, while Sussex County, on the other extreme, has 24 municipalities in an area of 536 square miles.

<table>
<thead>
<tr>
<th>County</th>
<th># of Municipalities</th>
<th>County</th>
<th># of Municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergen County</td>
<td>69</td>
<td>Morris Township</td>
<td>39</td>
</tr>
<tr>
<td>Essex County</td>
<td>22</td>
<td>Ocean County</td>
<td>33</td>
</tr>
<tr>
<td>Hudson County</td>
<td>12</td>
<td>Passaic County</td>
<td>16</td>
</tr>
<tr>
<td>Hunterdon County</td>
<td>26</td>
<td>Somerset County</td>
<td>21</td>
</tr>
<tr>
<td>Mercer County</td>
<td>13</td>
<td>Sussex County</td>
<td>24</td>
</tr>
<tr>
<td>Middlesex County</td>
<td>25</td>
<td>Union County</td>
<td>21</td>
</tr>
<tr>
<td>Monmouth County</td>
<td>53</td>
<td>Warren County</td>
<td>22</td>
</tr>
</tbody>
</table>

Connecticut

The RPA’s Connecticut catchment area encompasses 3 counties and 76 separate towns, with around 25 towns per county. In a move towards greater home rule, county governments in Connecticut were abolished in 1960. As such, the distinction between counties is merely a tool for identifying a town’s location within the state, as well as for Census purposes. All local governmental functions are carried out by individual towns. In an effort
to promote cooperation, the state set up Regional Councils of Government (RCOG) in the 1980s. The RCOGs are designed to cluster towns with similar demographics. They have no taxing powers, and all of their funding comes from the state and the towns within their jurisdiction. Their functions are limited to long term planning, emergency preparedness and land use policy. There are nine RCOGs in the state, five of which are located within the RPA catchment.

<table>
<thead>
<tr>
<th>COUNTY</th>
<th># of Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairfield Country</td>
<td>24</td>
</tr>
<tr>
<td>Litchfield County</td>
<td>25</td>
</tr>
<tr>
<td>New Haven County</td>
<td>27</td>
</tr>
<tr>
<td>TOTAL</td>
<td>76</td>
</tr>
</tbody>
</table>

Figure 2.3

**Metropolitan Planning Organizations**

Transportation planning and funding in the New York metropolitan region is dispersed between numerous entities and levels of government. The Federal Aid Highway Act of 1962 recognized the challenge this kind of political system would pose to regional initiatives. As part of this law, it was determined that Metropolitan Planning Organizations (MPOs) would have the responsibility for administering the federal funding of transportation projects. Today there are nine regional MPOs operating in the RPA catchment area, ranging in size and influence. Certain MPOs in upstate New York represent individual counties while others in the catchment area are only tangentially involved, such as the Delaware Valley Regional Planning Commission which focuses on the Philadelphia area but includes Mercer County, New Jersey. The most significant MPOs are likely to be ones that are primarily focused on the study area and cover the largest number of separate municipalities. These entities are important because they provide access to federal funding and are some of the only organizations taking a more regional and comprehensive view of transportation planning in the area.
<table>
<thead>
<tr>
<th>Jurisdictions</th>
<th>Counties/Region</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New York</strong></td>
<td></td>
</tr>
<tr>
<td>New York Metropolitan Transportation Council (NYMTC)</td>
<td>10 Counties</td>
</tr>
<tr>
<td>Ulster County Transportation Council</td>
<td>Ulster County</td>
</tr>
<tr>
<td>Orange County Transportation Council</td>
<td>Orange County</td>
</tr>
<tr>
<td>Poughkeepsie - Dutchess County Transportation Council</td>
<td>Dutchess County</td>
</tr>
<tr>
<td><strong>Connecticut</strong></td>
<td></td>
</tr>
<tr>
<td>Housatonic Valley Council of Elected Officials</td>
<td>Northwest Connecticut</td>
</tr>
<tr>
<td>Greater Bridgeport Valley - MPO</td>
<td>Bridgeport - New Haven</td>
</tr>
<tr>
<td>Southwestern Regional Metropolitan Transportation Council</td>
<td>Southwest Connecticut</td>
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<tr>
<td><strong>New Jersey</strong></td>
<td></td>
</tr>
<tr>
<td>North Jersey Transportation Planning Authority</td>
<td>13 Counties</td>
</tr>
<tr>
<td>Delaware Valley Regional Planning Commission</td>
<td>Mercer County</td>
</tr>
</tbody>
</table>

Figure 2.4
Demographic Trends

With a population of over 23 million residents in 2013, the New York metropolitan region is the most populous in the United States, with a correspondingly high population density. Four out of the five counties making up New York City (New York, Kings, Bronx and Queens) have the highest population densities in the country - ranging from New York County’s 69,468 people per square mile to Queens County’s 20,554. As one moves further out from New York City, population density slowly decreases - from very dense inner suburbs such as Hudson County, NJ (13,732 people per square mile), to outer suburbs such as Suffolk County, NY (1,637 people per square mile - and still quite high relative to the rest of the country), to more rural settings such as Sullivan County, NY (77 people per square mile).²
Population Growth

The entire metropolitan region experienced a population growth of 13% between 1990 and 2013. Every county in the metropolitan region experienced population growth - though the rate of growth varied dramatically from county to county. While New York City’s population grew, it’s worth noting that the highest change in population occurred in the region’s suburban and rural counties. Central and Southern New Jersey and the west side of the Hudson Valley in New York saw especially high growth in particular - with Somerset and Ocean Counties in New Jersey, for example, seeing a change in population of over 25%.

Figure 2.6
Unemployment rates vary throughout the region. 8 counties in the area saw unemployment above the national average of 7% in 2013: all 3 counties in Connecticut (New Haven, Fairfield, Litchfield); Bronx & Sullivan Counties, NY; and Essex, Hudson & Union Counties, NJ. The remaining 23 counties had unemployment rates below the national average, with 4 counties coming in below 5%: Richmond, Nassau & Suffolk Counties, NY and Somerset County, NJ. Between 1990 and 2013, New Haven County, CT and Sullivan County, NY saw the highest growth in their unemployment, rising 5% and 4% respectively (though Sullivan’s unemployment rate declined between 2010 and 2013). The greatest decrease in the unemployment rate between 1990 and 2013 occurred in Kings and Bronx Counties, NY, declining 4% and 3% respectively, though both have seen an increase between 2010 and 2013.4
Poverty

As may be expected, higher levels of poverty are generally found in the region's more urban counties - such as Bronx County, NY, (with roughly 26% of its adult population living in poverty), Essex County, NJ (15%) and New Haven County, CT (13%). However, high poverty levels are not the exclusive domain of these urban counties. All the counties in the western Hudson Valley have over 12% of their adult population living in poverty, with Sullivan County over 18%. Most of the east side of the Hudson Valley and large swaths of central New Jersey see percentages over 8%. It is further notable that all 31 counties in the region saw their percentage of adults living in poverty grow between 1990 and 2013. The highest growth occurred in Bronx County, NY (a gain of 11%) and Passaic County, NJ (9%) while the lowest growth occurred in Hunterdon County, NJ & Monmouth County, NJ (both just over 1%).

While county level data does a good job of describing overall trends, it masks the differences occurring in cities within the counties. This discrepancy becomes clear when examining the percentages of people in poverty as of the 2013 5-year American Community Survey (ACS). For example 9.6% of Fairfield County, CT residents above the age of 16 are living in poverty. However, the city of Bridgeport in the eastern end of Fairfield County has 20.4% of its citizens older than 16 living in poverty. A similar case can be seen in Passaic County, NJ, where 13.7% of the population above 16 is living in poverty compared to the 24.8% of adult residents of Paterson in poverty. This can be repeated for many city-county relationships throughout the region. Obviously poverty is a problem in cities; this is not surprising. The larger point is that the geographies throughout the metro area are experiencing different problems, both based on location but also on the scale of what type of jurisdiction is being examined.
Figure 2.10

- Hempstead
- Nassau County

Percent in Poverty (2013)

Figure 2.11

- Paterson
- Passaic County

Percent in Poverty (2013)

Figure 2.12

Demographics
A SNAPSHOT OF THE REGION’S POPULATION

Between 1990 and 2013, the New York Metropolitan Area has grown approximately 12.7%
Chapter 3
At its simplest definition, a trail is a road for human-powered transportation. This can include walking, biking, roller-blading and more, essentially any type of non-motorized travel. One important feature of a road is that it leads somewhere; it serves the purpose of connectivity. As such we have generally limited our definition of a trail to those following a linear path, with the primary purpose of connecting different points. Just as our region has an extensive network of roads for cars, we envision a complementary network of roads for people. For the purposes of envisioning a regional trail network it is additionally necessary to distinguish between the caliber of different types of trails. We have created a hierarchy of trails as follows:
Trail Classifications

A robust regional trail network would feature primarily Class 1 trails, as these allow for the safest, most reliable, and hence most enjoyable trips. While Class 2 trails are more limited in their access, they still allow for the easy travel of at least certain kinds of human-powered transportation and so have a role to play. Class 3 trails are roads that do not qualify as Class 1 or 2 but serve as necessary connectors between these facilities within a larger regional trail network.

Class I Trails

These are the best and most inclusive trails to travel on. Class I trails are “ideal trails”. They are multi-modal, have a separate right of way and have good, clear signage.
Hudson River Greenway, New York City, New York

Eastern Parkway, Brooklyn, New York
Class I Trails - Graphic Displays

Figure 3.1 - Potential Class I Trail Street Design

Figure 3.2 - Rendering of Potential Class I Trail Street Design
Hometown Trail

Bike
Skateboard
Rollerblade
allowed
(Yield to pedestrians)

New York - 12 m
Jersey City - 10 m
Hoboken - 11 m

Total trail length
24 miles

Signage for Potential Class I Trail
Class II Trails

Class II trails are less accessible than Class I trails, but share similar features. They have a protected right of way and have good to limited signage, however they only allow one use. Typically they are protected bike lanes like what you’d find on Kent Avenue or 8th Avenue, but also include a trail like the High Line, because it does not allow cyclists.
Class III Trails

Class III trails are the necessary connections that are needed to keep a trail running continuously. They are often shared rights of way that have limited to no signage. They can be as formal as a bike sharrow lane or as informal as a parking lot or sidewalk.
Chapter 4
Existing Trails and Transportation

Because the RPA’s catchment area is so vast and varied, we have organized our discussion of existing trails and transit facilities into “sub-regional” sections. We will be discussing New York City, Long Island, the Eastern Hudson Valley, the Western Hudson Valley, the Gateway Region, Rural New Jersey, and Southwestern Connecticut. These distinctions are not political, but based on cultural and geographic similarities grouped at the county level. In addressing our study area this way, we were able to organize the entire region into more bite-size pieces to better highlight both existing strengths and identify needed improvements.
Data Collection

From various sources, including state, county, and municipal agencies such as the New York City Department of Transportation, the New Jersey Department of Transportation and Connecticut Transit as well as non-profit organizations, such as the OpenStreetMap database our studio has compiled an inventory of existing Class 1 and 2 trails in the region. These trails can be found everywhere across the RPA catchment: from alongside a busy avenue in Manhattan to paths cutting through fields in rural New Jersey. GIS work included re-projecting and merging these datasets into one Shapefile. The layer was further edited to fit our Class 1 & 2 trail definitions. Our studio eliminated most small looping trails, such as those found in parks, as well as erroneous records--the Lincoln Tunnel, for example, was classified as a “shared use” trail according to one dataset. The trail system as currently exists is fragmented, with responsibilities for development and maintenance divided by state lines as well as local jurisdictional boundaries.

New York City
(New York, Kings, Queens, Bronx, and Richmond Counties)

New York City possesses the most extensive and integrated trail network of any municipality in the region: with a diverse collection of trails providing connections to open space and transit, including Class 1 greenways, Class 2 protected bike lanes, and on-street Class 3 bike lanes. Trails in Manhattan tend to be concentrated in the downtown and midtown area with Class 1 trails such as the Hudson River Greenway running along the waterfront. The trail network in the Bronx and Brooklyn is relatively well dispersed. However, this is not the case in Staten Island or Queens. Despite Staten Island’s reputation as the borough with the most green space, Staten Island has the fewest trails in the city, while Queens’ trails are not well dispersed throughout the borough. Trails in the City are predominantly owned and operated by the New York City Department of Parks and Recreation though some are owned and operated by the federal or state government and others are maintained by private or non-profit agencies.
The three counties of New York’s eastern Hudson Valley have a well developed network of trails to serve their populations, including some of the longest and most continuous trails in the metro area. With just one short break in connectivity the South County Trailway connects to the North County Trailway which connects to the Putnam Trailway, to provide an almost 50 mile continuous Class 1 trail running from Van Cortlandt Park on the Bronx border, through Westchester to the Brewster Metro North Station in Putnam County. Westchester County has the most developed trail network of the three counties. Their length and close proximity to transit, along with Westchester’s relatively high population density and proximity to New York City, suggest the possibility of many of these trails serving as an alternative method of transportation.
Western Hudson Valley
(Rockland, Orange, Sullivan and Ulster Counties)

The four counties of New York’s western Hudson Valley are sparsely populated for the region, and as a result have a large cache of undeveloped open space. On the edges of New York City’s commuter shed, this part of the metro area has several long, well-developed trails that serve both as potentially viable options for robust transportation and as opportunities for recreation. The dominant mode of trail-building in the western Hudson Valley has been based on rights-of-way from disused rail lines. The longest trail in the region, the Wallkill Valley Rail Trail, runs just over 20 miles and connects the Ulster County population center of Kingston to the Orange County village of Walden. Taking users near Minnewaska State Park, the Mohonk Preserve and the vibrant town of New Paltz, this trail is an excellent example of the rail trail’s potential for connectivity. Despite not being supplemented by dynamic public transportation, this trail has the potential to be used for real connections between important places in the area. Shorter but similar is the Orange Heritage Trail which runs 14 miles from Goshen to Monroe in Orange County. Orange County’s development tends toward large, strip-mall style commercial areas connected by highways, so the trail is less useful as transportation but provides a serene piece of preservat sprawl without real growth.
Long Island
(Nassau and Suffolk Counties)

Long Island has a number of Class 1 trails, ranging in length from approximately 1 to 12.5 miles; most of them are paved for their entire duration. The majority of these trails - such as the Wantagh State Parkway Shared Use Path and the Ocean Parkway Coastal Greenway - tend to focus on providing connections to parks and open space more than to transit or employment centers. One important exception is the Hempstead Turnpike Shared Use Path, a 7 mile trail connecting several landmarks in the “Nassau Hub,” including Nassau Community College, Hofstra University and the Nassau Coliseum. It’s notable that at least half of these trails run along state parkway or highway right of way for at least some of their distance, an important precedent for a region so full of motorways.

Long Island is further notable for its 3 long Class 2 trails, the longest of which - the Paumanok Path - runs for over 100 miles in Suffolk County. These trails are fairly unique in the region; in structure they are close to hiking trails but their long length, linear nature and connections to other existing trails, towns and open space, mean they have a possible role to play in a regional trail network.
Gateway Region, New Jersey

(Bergen, Essex, Hudson, Middlesex, Passaic, Union Counties)

New Jersey last released a Bicycle and Pedestrian master plan in 2004. Although the document offers policies to make streets more “Complete” and to develop infrastructure for active transportation, the development of a regional trails network was not identified as a key issue.

The development of trails in northern New Jersey has instead developed in piecemeal fashion. In Bergen County, there are clusters of bicycle paths that at times approximate a network. One of the more significant efforts to develop a bicycle-friendly greenway running through multiple municipalities is the Saddle River Area Bike Path. From Maywood to Ridgewood, the 8-mile paved Class 1 trail connects five different municipalities making up the linear Saddle River County Park.

Trails in Essex County are somewhat sparser; trails flourish within parks (ex: Cameron Park, Branch Brook Park) but are harder to find in developed areas. An exception is the West Essex Trail: although unpaved and situated in woodland apart from the local street network, the 3-mile trail can function as a transportation greenway in one of the most urbanized parts of the state.

In Hudson County, bike lanes abound in dense neighborhoods such as in Hoboken and downtown Jersey City, but industrial areas, rail yards and wetlands disconnect municipalities’ lane networks. Physically separated trails, both existing and proposed, are usually found along the waterfront—the Hudson River Waterfront Walkway is roughly 11 miles long and stretches from Bayonne to the George Washington Bridge. In the 1980s NJDEP required developers building near the Hudson River to dedicate public space along the water’s edge. Because the development of the Walkway depends on redevelopment, construction has occurred intermittently, with the Walkway’s quality and access dependent on developers’ design choices and local municipalities’ concerns.
Gateway Region, New Jersey
(Bergen, Essex, Hudson, Middlesex, Passaic, Union Counties)

Aside from bicycle path networks on university campuses, Middlesex County lacks many multi-use trails. Middlesex Greenway is the exception: a 3.5 mile, paved, Class 1 trail that connects the towns of Edison, Metuchen, and Woodbridge together. Formerly an abandoned rail line, the right-of-way was purchased by Metuchen and the County in the early 2000s through Open Space funds. The western terminus is approximately half a mile from the Metuchen commuter rail station. While Passaic County lacks substantial bicycle path networks and trail networks, parts of Union County feature clusters of multi-modal trails: Warinanco and Oak Ridge Parks include networks of trails within them. A few jurisdictions within Union County have also taken advantage of linear parks to install trails--in Lenape Park, parts of the East Coast Greenway have been developed.

Rural & Suburban, New Jersey
(Sussex, Morris, Warren, Hunterdon, Somerset, Mercer, Monmouth, and Ocean Counties)

Trail development efforts have been spearheaded by a wide variety of government and non-profit organizations such as the Delaware Valley Regional Planning Commission, the New Jersey Highlands Council and the NJDOT; each has developed a bicycle and pedestrian section as part of their master plans. More localized initiatives are also taking place throughout the region, with Morris County's bicycle master plan serving as a prime example of trail planning on the county level. The larger and more established traditional urban centers have addressed bicycle and pedestrian issues within their own jurisdiction; Princeton is an example of a small town actively expanding a trail
There are about 11 linear Class 1 trails in the RPA catchment in Connecticut, all of them in Fairfield and New Haven Counties. Four trails cross town boundary lines, though only two of them do so as connected segments: the Farmington Canal Trail and the Larkin State Park Trail. The other two have plans to make these connections. None of these Class 1 trails connect to Metro North stations, and only 2 of them run within even 2 miles of a station.

The most robust trail is the Farmington Canal Trail. This is a linear path that follows an old canal right of way that was converted into a railroad. The plan is for this trail to run 84 miles from New Haven to Northampton, Massachusetts. Today, 16 miles of this trail exist within the RPA region, passing through New Haven, Hamden and Cheshire. In central New Haven the trail crosses many intersections at grade, though its intersections are well marked. As the trail winds north it runs over an old railroad right of way, which can only be accessed from dedicated ramps. Access points on the trail come less frequently as the human environment turns more rural. The trail ends in Cheshire, though it picks back up in the next town north, Southington, in Hartford County. A great feature of the trail is that it is completely paved in New Haven County.
Existing Mass Transit

The New York metropolitan area is home to America's most active public transit system. According to the 2010 census, upwards of 30% of all workers in the New York metropolitan region took public transit to work. This was nearly twice as many as the second highest metropolitan area, San Francisco. The three busiest commuter rail systems in the nation are in our region: the Long Island Railroad, the Metro-North Railroad and the New Jersey Transit Railroad. Public transit in the area is extensive and connects people throughout the region.
Through GIS analysis, we’ve analyzed trail connections to commuter rail stations. Approximately 6% of the network is within a half mile of a station, 17% is within a mile, and 40% is within 2 miles of a station, which is the standard used to determine bikeability. The RPA catchment varies significantly in how well the trail network connects to these stations. In New York City, urban New Jersey, and western Long Island, many trails connect or come close to rail stations. Further out in New Jersey and Connecticut, though, we see more substantial gaps.
Chapter 5
Benefits of a Regional Trail Network

An interconnected trail network presents several important benefits: improved transportation options, opportunities for new forms of economic development, improvements in public health, reduced harm to the environment and increased equity. To ensure these potential benefits are realized they should be incorporated into the trail planning process as goals for trail planners, developers and advocates.
Why a Regional Trail Network?

- Steady growth in biking
- Also steady growth in bike fatalities
- People's desire for a more livable community (bike access as a large factor)
- Current opportunity to reach less confident bikers
- 3 different types of bikers (brave bikers, interested but hesitant, least likely to bike)
- Need to capitalize on existing infrastructure by connecting it all together to create a system people can use everyday.

Transportation

Trail development can improve transportation options for people traveling to work and to local destinations such as shopping and civic or cultural institutions.

Studies have found that 50% of all trips taken by American households are within a distance of 3 miles or less (People for bikes statistics sheet data from the National Household travel survey).\(^7\) Due to the short distance, these trips can be considered the “low hanging fruit” for modal shifts, those that have the most potential to be converted to biking or walking.

A study conducted in Portland, OR was able to classify people into four different types of bike riders.\(^8\) The image to the right shows that over 50% of people are “interested but concerned”. This segment of the population would like to bike more but are not being given viable options to do so.

Providing safe and direct access to trails allow “interested but concerned” cyclists an opportunity to make these 3 mile trips by bike instead of car. An interconnected trail system will greatly increase the number of origin and destination points and therefore the number of people who have access to trails. Traditional Travel Demand Theory has shown us that road expansions often result in more people using the new road. The same theory applies to bike travel; new trails will increase trail usage by people who already use trails and will also cause some people to switch their choice of travel from car to bike.

Currently, trails in the region are rarely connected to other trails and often start and stop in inconvenient and out of the way locations. Connections to other trails as well as regional destinations should be a part of any trail planning process.
### Four Types of Cyclists

Based on a study of cyclists in Portland, Oregon by Proportion of Population

<table>
<thead>
<tr>
<th>Interested but Concerned</th>
<th>No Way No How</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td>33%</td>
</tr>
</tbody>
</table>

- Strong and Fearless: <1%
- Enthused and Confident: 7%

---

**Transportation Benefits:**

1 person switching from a CAR to a BIKE commute

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Savings per mile saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Congestion</td>
<td>0 - 5 cents</td>
</tr>
<tr>
<td>Reduced Pollution</td>
<td>1 - 5 cents</td>
</tr>
<tr>
<td>Reduced Cost to User</td>
<td>3 cents</td>
</tr>
</tbody>
</table>

During Rush Hour

A 2.5 mile trip results in

$3.58 in total savings

---

**Figure 5.1**

**Figure 5.2**
Economic Development

Economic benefits associated with increased trail use are often the most cited and most researched benefit of trail development. Job creation is often used to justify public infrastructure projects; trail projects, in fact, generally create twice the number of jobs per mile as road construction projects.\(^9\) While road construction projects tend to be heavily materials dependent - hence their high price tag - trail construction projects are heavily labor dependent, creating more jobs at a lower cost.

Misconceptions about trail development and resistance to trails have been pervasive in the past. However, local homeowners are the ones who benefit most, there is evidence that proximity to trails actual increases property values. One study examined property values in trail adjacent and non-trail adjacent home and found that homes within 0.5 miles of the trail sold for 11% more and sold 9% faster than non trail adjacent homes in the same development.\(^{10}\)

The most significant economic benefits are what economists call "spillover" effects. Spillover effects are all the indirect ways trail development and human-powered travel contribute to the economy. Examples range from local to national impacts. Locally, trails have been shown to increase spending at trail-adjacent businesses. Retail along Manhattan's 9th Avenue - the nation's first protected bike lane - saw up to a 49% increase in sales. Pearl Street in Brooklyn saw a 172% increase in retail sales for locally based businesses after the opening of it's protected bike lane.\(^{11}\)

Similar economic calculations are taking place at the international level as well. The Institute of Transportation Economics in Norway conducted a cost-benefit analysis for three Norwegian cities after they began developing a

---

**Figure 5.3**

Costs of operation vs. Benefits of Operation

\[
\begin{align*}
\text{Costs of operation} & \quad \text{vs.} \quad \text{Benefits of Operation} \\
\$191,893 \text{ annual cost} & \quad \text{vs.} \quad \$303,750 \text{ annual benefit}
\end{align*}
\]
Benefits of a Regional Trail Network

regional trail network. Comparing the cost of developing the networks versus the benefits of retail activity, health care saving and savings in external costs such as parking. The study found that the monetary benefits of the trail networks amount to 4 - 5 times the cost of developing these networks. In America, a study commissioned by the CDC found that community based physical activity interventions such as increased access to bike lanes is “money well spent” because it is more cost effective than traditional preventative strategies. National increases in bicycle and walking could reduce overall healthcare spending, revitalize neighborhoods and improve the environment, while contributing to an increase in quality of life.

Health

Active transportation contributes to active lifestyles which have been shown to correlate closely to the health of individuals and populations. Countries with the highest levels of biking have the lowest levels of obesity. America is currently in an obesity epidemic that is weighing heavily on our healthcare system and is severely impacting the lives of millions of Americans.

Maybe the strongest evidence is that “82% of bike commuters believe their health has improved since they started commuting by bike.”

Memphis, Tennessee: Broad Avenue Arts District

The Broad Avenue Arts District is making a comeback. Rebranded after years of economic stagnation and disinvestment. The Broad Avenue Arts District has been actively promoting bicycle travel within the district and claims “bike friendliness” as a major contributor to its ongoing success. The trail visioning event...

“Sparked a re-envisioning of the area and has since inspired over $25 million in economic development.”

Figure 5.4
Environment

Environmental benefits of trails can be calculated at local, regional and national scales. Benefits include improving air quality by reducing carbon emissions and environmental preservation of fragile natural areas.

An improved and expanded trail network leads to fewer carbon emissions in the environment. If just 5% of all commuters in New York City switch from using private cars or taxis to biking or walking, 150 million pounds of CO2 emissions are saved every year.\textsuperscript{17} Furthermore, if 20% of students who live within 2 miles of their school biked or walked to school, an additional 356,000 tons of CO2 would be prevented.\textsuperscript{18} In Philadelphia, cyclists traveling a combined 260,000 miles a day keep 47,450 tons of CO2 from being emitted from cars per year.\textsuperscript{19}

 Trails can also act as environmental buffers, allowing users to experience natural areas while simultaneously protecting natural habitats. Revitalizing these buffers as greenways beautifies the area, decreases noise pollution, directs urban growth and provides an outdoor classroom for interested individuals. Trails can also assist in storm water management, soil erosion and prevent flood damage in their surrounding area. They often provide permeable soil which collects excess runoff during storms.

Central Park, NYC
Environmental Impact of Transportation Options for Commuters

Results shown below are based on a 2010 MIT study examining lifetime environmental costs of common commute options.

The gas pump symbol identifies energy usage for each mode of transportation. Energy usage calculations sum energy used throughout the product lifecycle including: fuel production, infrastructure, maintenance, manufacturing and operation. Results given in Kilojoules per passenger mile traveled.

The car exhaust symbol identifies greenhouse gas emissions per passenger mile traveled for the identified commute transport options. They too take into account greenhouse gasses produced during the various stages of the product lifecycle, including: fuel production, infrastructure, maintenance, manufacturing and operation. Results are given in the Gasoline Gallon Equivalent.

“The results show a significant environmental as well as economic benefit of using human powered forms of transportation” - Shreya Dave, MIT
- Life Cycle Assessment of Transportation Options for Commuters.
Equity

Any trail development effort needs to consider issues of equity; planners must prioritize trail development in marginalized areas. We are interested in addressing the needs of the “invisible cyclist” - primarily low income people and recent immigrants with limited resources whose needs are not often addressed in the traditional planning process. Bike commuting is highest among people making less than $25,000 a year, reflecting their disproportionate reliance on low cost transportation options.

For low income people car ownership can be unaffordable. In 2014, AAA estimates that the average cost to own a sedan amounts to over $8,000 a year, including gas, insurance and maintenance. Workers who don’t own cars are twice as likely to commute by bike. 2.8% of those without car access commute by bike while only 0.6% of the total population commutes by bike.20

Non-profit advocate groups have been trying to reach out to this undeserved population. Aside from a few notable exceptions, however, their outreach has not infiltrated the traditional planning process. Possibly the most widespread and impactful advocacy tactic has been “earn a bike” programs in which participants volunteer in bike shops and youth centers, earning a bike through their efforts. Increased ridership is a first step but ultimately planners must form active partnerships with these advocacy groups in order to capture the needs of this population.

“I’ve Always loved riding my bicycle but I never knew how many worlds it would take me to.”
- Abubakarr, age 17
Recycle-a-Bicycle Program, NYC
Spotlight on the Region: NYC local bike advocacy organizations:

Karen Overton, founder of Recycle-a-Bicycle, became involved in bicycle advocacy in Mozambique, where, for years, she distributed single speed bicycles to women who worked on small farms.

Today, Recycle-a-Bicycle takes donated bikes, gives them a complete mechanical overhaul, and then sells them out of their shops. In conjunction with its salvage operation Recyle-a-Bicycle has these innovative programs:

- Earn-a-bike  - Green Jobs Training  - High School Internships
- Arts Workshops  - Youth Employment  - Kids Ride Club

“Recycle-a-Bicycle provided the opportunity for low income youth to earn a bike by learning how to build and maintain one”

Recyle-a-Bicycle along with Transportation Alternatives have been identifying local issues that can be addressed through increased and safer bicycling. Then advocates and community members work together to come up with locally based solutions that represent the views of the residents.

An advocate’s job is to “listen first” then respect the voices of the neighborhood and work together to reach a solution beneficial to everyone involved.

The BIKING PUBLIC PROJECT started as a way to increase representation of diverse cyclists in the bicycle advocacy discussion.

“Our goal is increasing awareness so that bike organizations incorporate diversity, equity and access into their missions so we can be a stronger bicycle movement”.
- Helen Ho, BPP co-founder
Chapter 6
After cataloging and researching existing trails, precedents and best practices and reaching out to stakeholders in the field, we developed a series of recommendations towards creating a more robust regional trail network. These include four specific strategy recommendations to help elucidate where the trail network could be expanded. For each strategy we’ve provided an example—a specific trail recommendation that can serve as a case study for putting the strategy into use. We’ve also provided implementation recommendations—approaches and policies to help facilitate and supplement the creation of both specific trails and the trail network as a whole.
Strategy 1 - Existing Rights of Way

Our first strategy recommendation is to seek out existing rights of way for trail conversion. Among the most promising sources are the numerous abandoned rail lines throughout the region - shown on the map we’ve created here. Conditions on these rail lines can vary significantly.

Figure 6.1
Still, the majority offer numerous natural advantages for trail conversion. In addition to the potential for easier land acquisition:

- They tend to be separated from busy motor traffic. This makes them safe for family recreation and useful even for sensitive transportation uses like young children traveling to school.
- They facilitate connectivity by being uniquely effective for linking economic and population centers to one another.
- They make use of existing, often neglected infrastructure, like drainage facilities or bridges and they provide non-motorized access between communities and the abundant natural resources in our region.

In addition, there is a strong national precedent for converting rails to trails and a wealth of resources for assisting in the logistics of the process.

Abandoned Rail Line in New Jersey
Example of Possible Railroad Right of Way Trail: Wading River Branch of LIRR

The 12 mile long Wading River Branch of the LIRR, running from Port Jefferson to Wading River, has been out of service since 1938. The tracks and ties are long gone and the entire right of way has been owned by the Long Island Power Authority (LIPA) for some time, with three of their transmission lines running overhead. Besides these lines and the poles that hold them, the former right of way is undeveloped, presenting a prime opportunity for conversion to a trail.

In fact such a trail is already in the works, with the first 3 mile construction phase scheduled to begin shortly, under the jurisdiction of the New York State Department of Transportation. Once finished, the paved, multi-use trail will run some 10 miles, offering connections to towns, open space and cultural attractions. A key component of bringing the trail to implementation was an agreement between the Long Island Power Authority and Suffolk County, allowing public access to LIPA’s land in exchange for the county assuming liability for users and being responsible for trail maintenance. This agreement is itself a hopeful precedent for cooperation between power authorities and county and local municipalities throughout the region and can help point the way towards future trail conversion elsewhere in the metro area.
Example of Possible Highway Right of Way Trail: Sunrise Highway

Officially State Highway 27, the Sunrise Highway runs from the Belt Parkway in Queens through the entirety of Nassau County, crossing or coming close to numerous trails along the way. For the majority of Nassau the highway parallels the Babylon Branch of the LIRR, the busiest branch of the railroad. For large portions of its route the highway runs so close to the rail line that its north side is undeveloped, opening up the possibility of creating a Class 1 trail running the length of Nassau County, with access to towns and commercial centers and numerous transit connections along the way.
Recommendations for a Regional Trail Network

Figure 6.2

Sunrise Highway, Lynbrook, NY
Strategy 2 - Population Centers

Our second strategy recommendation is to use trails as connections between population centers. This may prove most valuable outside of the extremely dense urban core (where everywhere is essentially a population center). The more rural counties of New Jersey for instance, are dotted with small, dense population centers punctuated by more rural, open space, revealing some tailor-made opportunities for such connections. Currently, these types of geographies have some trails but don’t always complete connections between nodes.

Figure 6.3

Figure 6.4

Figure 6.5

Recommendations for a Regional Trail Network
The Henry Hudson Trail in Ocean County, for example, leaves a formidable gap between the densely populated communities on either end. A connection could easily, and usefully, be made by installing a constellation of Class 3 facilities. High activity on these routes could galvanize support for a newer, more robust facility in the future.

Figure 6.6
Example of Population Centers Strategy in Orange County, NJ

Strategy 3 - Gap Analysis

Gaps Analysis looks at the distance between existing trails and selected locations to highlight where connections might be made. A variety of locations such as large employment centers and transit centers are appropriate for gap analysis. A hierarchy of gaps can then be created by using a matrix which quantifies specific variables to prioritize which gaps should be addressed first. Closing "last mile" gaps between trails and the region's very active mass transit network can increase the benefits of trails by promoting modal-shift, connecting needy populations to job opportunities and building a truly integrated regional transportation system that is not automobile dependent.
By entering distances between trails into a matrix we can begin to make sense of where these “last mile” gaps might easily and necessarily be bridged. Here is an example of a matrix focusing on Nassau County - looking at gaps between LIRR train stations and existing trails and prioritizing them based upon 3 variables.

<table>
<thead>
<tr>
<th>Station</th>
<th>Trail</th>
<th>Gap Score</th>
<th>Gap Score Weighted (x 1.5)</th>
<th>Gap Class Score</th>
<th>Struggling Score</th>
<th>Total Score</th>
<th>Census Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inwood</td>
<td>Nassau Expressway Shared Use Path</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
<td>1</td>
<td>3.5</td>
<td>Inwood</td>
</tr>
<tr>
<td>Massapequa Park</td>
<td>Bethpage Bikeway</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
<td>3</td>
<td>5.5</td>
<td>Massapequa Park</td>
</tr>
<tr>
<td>Valley Stream</td>
<td>Valley Stream State Park</td>
<td>1</td>
<td>1.5</td>
<td>3</td>
<td>2</td>
<td>6.5</td>
<td>Valley Stream</td>
</tr>
<tr>
<td>Wantagh</td>
<td>Wantagh Parkway Bikeway</td>
<td>1</td>
<td>1.5</td>
<td>3</td>
<td>3</td>
<td>7.5</td>
<td>Wantagh</td>
</tr>
<tr>
<td>West Hempstead</td>
<td>Hempstead Lake State Park</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>West Hempstead</td>
</tr>
<tr>
<td>Hempstead Gardens</td>
<td>Hempstead Lake State Park</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>West Hempstead</td>
</tr>
<tr>
<td>Lakeview</td>
<td>Hempstead Lake State Park</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>Lakeview</td>
</tr>
<tr>
<td>Hempstead</td>
<td>Hempstead Tumpke Shared Use Path</td>
<td>3</td>
<td>4.5</td>
<td>3</td>
<td>1</td>
<td>8.5</td>
<td>Hempstead</td>
</tr>
<tr>
<td>Seaford</td>
<td>Bethpage Bikeway</td>
<td>3</td>
<td>4.5</td>
<td>1</td>
<td>3</td>
<td>8.5</td>
<td>Seaford</td>
</tr>
<tr>
<td>Westbury</td>
<td>Hempstead Tumpke Shared Use Path</td>
<td>3</td>
<td>4.5</td>
<td>2</td>
<td>2</td>
<td>8.5</td>
<td>Westbury</td>
</tr>
</tbody>
</table>

The gap score reflects the distance between the train station and the trail (½ mile to 2 miles). With an eye towards pragmatism (generally the shorter the gap the easier to build), we gave this variable the most weight.

The gap class score reflects the type of trail that could most likely serve as a connection, with Class 1 being the most preferable.

With an eye towards equity we included a variable reflecting percentage of the local population living at or close to the poverty line - what the census describes as struggling.

The lower the score the higher the priority. So with our lowest score - the Inwood Train Station on the Far Rockaway line - we see there’s the possibility of a short, Class 1 connection to an existing trail, in an area with a high percentage of its population economically struggling.
Inwood Station proposed Class I trail connection “bridging the gap” to the train station from existing trail section.

Strategy 4 - Street Safety

While using matrices and other forms of deductive analysis are indeed effective ways of revealing locations in need of attention, trail development can also be used as a direct planning solution for long-existing challenges. Reserving roadway space for dedicated uses has become an increasingly popular technique to promote traffic calming.

Conduit Avenue, a multi-lane highway style road running from the Brooklyn/Queens border nearly out to JFK airport and the Belt Parkway, is a perfect example. Between three eastbound lanes and three westbound lanes, the roadway has a large, planted median ranging from 60’ to 140’ in width. While efficient for motor traffic, the Conduit frequently interrupts recreational potential, like here where it bisects adjacent baseball fields. Despite its encouraging risky crossings and unsafe behavior. As a result, what should be a park has become a
cemetery. Conduit Avenue has some of the highest crash volumes in the City, among the top 10%, and its ample unlegislated space has been a threat to neighborhood vitality instead of an asset. Developing a robust, class 1 multi-use facility on the Conduit would do much for connectivity; bridging a gap in planned facilities from Highland Park to Jamaica Bay and the Belt Parkway greenway. It would also facilitate community, economic development and momentum toward traffic calming and pedestrian and
Improving Bike Amenities

Train Stations

In order to use trails for last mile connections to transit stations, dedicated, easily-accessible accommodations need to be provided to increase a station's bike storage capacity. Current bike storage options include rent-able storage lockers, electronic bike lockers (eLockers), and traditional bike racks. These storage options promote cycling as transportation to train stations by eliminating the worry of not being able to find a spot to secure a bike. Traditional bike racks are a simple, cost-effective way to improve storage capacity at train stations, and take up less space than the aforementioned options, making them a “quick fix” for increasing capacity. Incorporating technological advances such as the ability to check if bike parking spaces are available, or rent lockers at stations before people leave their houses could help promote trails as last mile connections, allowing people to know ahead of time if they would be able to get a place to secure their bikes. Currently, many cities within the United States have made multi-modal transportation a priority by providing an excellent variety of bike storage options at train stations, an example we suggest our region follow.

Onboard Trains

Likewise, onboard train bike storage needs to be expanded. Anyone who has been on a commuter rail line knows it is difficult to accommodate people and bikes in a small area. There are currently two predominant forms of bike storage onboard commuter rail lines. The first are hooks allowing people to hang their bikes vertically along...
the wall of the train. The second option are bike racks that allow for individual bikes to be stored horizontally, much like you see on the street. The Massachusetts Bay Transportation Authority (MBTA) has a railcar specially designed for bike storage where the seats have been removed from one side and bike racks have been installed. Providing more bike storage will help to make traveling with bikes easier for all passengers and allow broader access to the wealth of benefits that a regional trail network can provide.

On Street

Finally, increasing on-street bike parking will help to promote last mile connections, healthier lifestyles, and safer streetscapes for everyone. Bike shelters, like the NYCDOT shelters, provide covered and secure storage for bikes and if located outside of subway or train stations helps to promote the use of trails for transit connections.
Funding

Funding is a crucial aspect of expanding the regional trail network, necessary for both new trail development and on-going maintenance. Recently developed local and national trails provide examples of traditional and alternative funding though it is evident that no one funding strategy will work for every development scenario. Types of funding to pursue is highly dependent on the type of trail and its intended use. The Federal Government has several programs that were specifically designed to fund bicycle and pedestrian projects. Many of these programs are established and funded under the umbrella of the latest federal transportation funding bill (MAP - 21), passed in 2012. MAP-21’s Transportation Alternatives Program (TAP) includes the Safe Routes to School Program and the Recreational Trails Program. Along with the TAP program the Congestion Mitigation (CMAQ) Program provides funding to cities suffering from air pollution. The Surface Transportation Program (STP) provides more general funding for projects.

The application process to receive federal funding involves many actors, from all levels of government. A local project may be advanced by buy-in from a state agency which can then complete the federal grant application and advocate on behalf of the project. Each state has a state administrator responsible for administering the federal Recreation Trails grant and can be a valuable resource for agencies attempting to secure funding.

Another, often complementary, source of funding comes directly from the State government. There are many options states can use to fund trails. Not all states have the same or even similar programs and some states provide significantly more funding opportunities than others. Some common funding sources include the establishment of dedicated funding sources, approved bond proceeds, specific development impact fees, local planning assistance grants, severance fees and fees associated with vehicle registration and operation.

According to the trail research organization Advocacy Advance and 2012 state reporting, the table below shows the percentage of projects with a bike/ped component and the percentage of spending devoted to those projects.
When government funds are not available or when the specific trail project does not neatly fit within government funding criteria, private funding sources are sometimes available to fill the gap. High quality trail facilities often add value to a community or business district therefore it is no surprise that these projects can sometimes attract private funding. Developers seeking to develop or redevelop an area are sometimes obligated to pay for street construction outside of the proposed development. Strong complete street policies can force developers to build trails along with the original development option. Some private institutions like hospitals and universities have developed trails that then benefit the larger area. Finally, private philanthropy through individuals and foundations have provided significant sources of funding for trail development. Buy-in from alternative sources such as these can be leveraged to prove existing support and secure future funds from state and federal entities.

Communities need to be nimble and flexible in regards to the range of funding sources they use to build their trail network. A complete trail network will invariably rely on all the above mentioned funding sources; state funds may be used to implement immediately needed actions, federal funds to fund more long term capital projects and local funds to implement localized spot solutions.

The Philadelphia Circuit

The Philadelphia Circuit is a regional trail initiative that aims to create an integrated trail network for the Philadelphia metro region, including 5 counties in Pennsylvania and three counties in southern New Jersey. Upon its projected completion in 2040, the network will feature 750 miles of primarily Class 1 trails, accessible to at least 50% of the region’s population. Currently 300 miles of trails have been incorporated into the network and 450 remain to be developed.22
The Philadelphia Circuit plays a crucial role not only in creating a trail network but in collecting research and disseminating information to the public. This is especially true through their interactive website, allowing individuals to access trail information and engage with the network as a whole. The Circuit was essentially started with a critical ten million dollar grant from The William Penn Foundation, allowing them to leverage other funds from government agencies like the Delaware Valley Regional Council. Today The Circuit is supported by a broad coalition of not for profit and government entities throughout its region.

The Circuit can serve as a helpful guide for developing a regional trail network for the New York Metro Region, with its positive examples of successful branding, coalition building, fundraising and interregional cooperation.

**Branding**

Branding efforts and an interactive approach to informing and engaging the public are key elements in any initiative's success, particularly that of an interregional model, and The Circuit seems to excel at both. All of the affiliated trails on The Circuit are branded as “Circuit Trails,” creating a visual and visceral connection to the trails as being part of one grand network.

Branding materials are important in that they transform a grand idea into a concrete reality. Trail signage, for example, alerts the individual that they are traveling on a road that is a part of a greater network which connects to other resources and facilities. The Philadelphia Circuit goes one step further in its branding by allowing its supporters to become active participants in the trail effort. The Circuit does this quite brilliantly, by providing individuals with the opportunity to nominate a trail to become a part of the “brand” or, rather, the network.

**Coalition Building**

Coalitions may be built with a variety of organizations, which may approach ideas and projects from different perspective. However, the goal is always successful collaboration and, in this regard, The Coalition can be used as a successful example - with a broad coalition of nonprofit, foundational, governmental and corporate entities with which to fundraise and plan. The Circuit’s 34-member coalition consists of groups such as; the Delaware...
and Lehigh National Heritage Corridor, the Cooper’s Ferry Partnership and the NJDEP among others. Different departments within the City of Philadelphia and its surrounding municipalities are also involved as well as a proposed request for the Delaware Valley Regional Council to reapportion .2% of their capital funds (from a 2012 estimated budget of $1.4 billion) towards into The Philadelphia Circuit’s trail fund.

There is great opportunity in applying the branding and coalition building concepts in a New York Metropolitan area regional trail. Branding could be connected to New York City tourist attractions thus creating tourist revenue in previously unvisited areas of the region. Furthermore, branding could encourage outdoor recreation, which can lead to improved public health and improved environmental sustainability. This branding effort may also urge corporations, nonprofits and government agencies to coalesce and create a coalition for the common goal of creating and maintaining a regional trail effort.

Figure 6.12 - Shows Philadelphia Circuit interactive map and branding efforts
The Tri-State Blueprint

The Tri-State Trail Blueprint is a vision of what a New York metropolitan regional trail network could look like. Although this network is hypothetical, the data used to create the connections are based off of real world data. Strategies outlined in this report were used to determine connection locations. We sought out existing rights of way such as the region’s numerous abandoned rail lines as well as its extensive parkway and highway system; we looked to place trails where they can easily connect population centers, especially outside of the dense urban core. And we sought to close gaps between existing trails and important locations such as mass transit stations and open space.

Figure 6.13

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Taking the Philadelphia Circuit’s model a step further, we are working toward developing an interactive web platform with which our users can explore existing trails and contribute ideas for future developments. Still in its early stages, the website maps selectable trails and displays their attributes, name and length, when clicked. Eventually, the site could feature user-added photographs, offer directions for route connection and leave space for new trail recommendations. Like in Philadelphia, the Blueprint website could be maintained by volunteers or a small non-profit organization of active administrators.

![Figure 6.14 - Shows Tri-State Blueprint interactive map](image)

**Conclusion**

In order to visualize the future of trails under our vast study area, we took many factors into consideration. By outlining the benefits of trail development and evaluating regional demographics, we provided a social justification to the project. By defining trail classes, exploring strategies for expansion and collecting recommendations for implementation, we have worked towards developing a picture of what the network might look like. Finally, our web platform and analysis of trail network precedent establish a vision of the future. RPA’s Regional Plans have certainly evolved from their initial idea of trails as pure, isolated recreation convenient to highways, and we hope that the Fourth Regional Plan will use our ideas to further expand that vision and advocate for a cohesive regional trail network.

**Recommendations for a Regional Trail Network**
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