The East Bay Bike Path 30 Years Later
What Have We Learned?

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&
Amy J. Archer, P.E.

The East Coast Greenway
New England
Bike-Walk Summit
April 27, 2018
National Context
The Rails-to-Trails Movement

"The U.S. rail trail movement began not with a bang—but as an intriguing idea that quietly took hold in the Midwest in the 1960s and eventually spread across the country."

- The railroad industry was in serious decline.

- The railroad was being eclipsed by automobile and air travel.

- From 1930 to 1970, an estimated 38,000 miles of rail lines were abandoned.

- By 1990, the number jumped to 103,000 miles.
Growing Popularity of Bicycles

• Bicycle sales increased from 6 million in 1971 to 15.3 million in 1973.
• Most pre-boom bikes had been sold for children, suddenly 60% were destined for adults.
• In 1973, 252 bicycle-oriented bills were introduced in 42 states.
• The Federal Aid and Highway Act provided $120m for bikeways over three years.
The 1978 National Energy Conservation Policy Act

Congress recognizes that bicycles:
- are the most efficient means of transportation
- represent a viable commuting alternative
- offer mobility at speeds as fast as that of cars in urban areas
- provide health benefits
- reduce noise and air pollution
- are relatively inexpensive
- deserve consideration in a comprehensive national energy plan.
The 1982 Surface Transportation Assistance Act

- Increased the national gas tax by 5 cents
- Rhode Island’s share is $430 million over three years
- Some funds are earmarked for bicycle transportation
- Federal funds will cover 100% of the cost of the bike path through the Federal Highway Association (FHWA).
Congress amends the National Trails System Act

- Preserves abandoned rail corridors for future rail -- called "railbanking"
- Allows them to be temporarily repurposed for other uses such as bikeways
- Converts them to interim trails.
The Fruition of the East Bay Bike Path
The Rail Line

- Part of the Old Colony Railroad
- Built in the mid-1800s for train service from Providence to Bristol
- Multiple owners
- Freight service continued intermittently until the railroad went bankrupt
- Completely abandoned in 1973
- RIDOT purchased the corridor for approximately $200,000 in 1976.
Many, including RIDOT, believed that the train would come back.

The path was only considered as a placeholder.
Introducing the Concept

In March 1976, Brown Student Clinton Andrews completed an independent study.
Rhode Island Joint Commission

March 1980, Representative Thomas Byrnes introduces a bill to study the use of bicycles as an alternate form of transportation and as an energy saver.

The Joint Commission consisted of six General Assembly Representatives from various statewide towns and one each from:

- AMTRAK
- RI Department of Environmental Management
- RI Department of Transportation
- RI Public Transit Authority
- Narragansett Bay Wheelmen / RI Bike Coalition
- Governor’s Energy Office
Feasibility Study

Lee Pare & Associates was hired in March 1982 to:

- identify demographic, social and environmental impacts
- garner public input
- recommend the best path route and design
- develop anticipated cost.
Public Outreach

Extensive outreach in all communities along the East Bay.
The Objections
NO TRESPASSING
NO SITTING ON WALLS
NO LOITERING
POLICE TAKE NOTICE
Bike path funds can be used for other projects

Last year the DOT had prioritized the top 150 projects in the state and turned away requests for others. Then in February, funds from the gasoline tax and from unexpended 895 appropriations became available and the DOT asked each municipality to submit a list of more projects to be done. A total of 204 projects have been selected.

The federal funding is available, and the bike path (at an estimated cost of $1.2 million) qualifies for that funding. If it isn’t spent on the bike path, the funding could be lost, Arruda said.

But some residents have expressed concern.

Bike path opponents say that:

"Lack of proper control could result in increased vandalism and house breaks along the route"

"the unduly high cost of the project which would be used by a small portion of the public"

"waste of the taxpayers' money"
Ownership of the Land

Does RI own the land slated for bike path?

A report by one of Rhode Island’s leading title examiners shows that the state might not own all of the railroad right-of-way, which has been chosen for the site of a bike path through Bristol County.

A Department of Transportation (DOT) official says the state does have clear title to the land, however, and plans to connect this path with a second one proposed along the right-of-way from Woonsocket to East Providence.

Findings of Francis E. Mullen, hired by the DOT to make a title examination of the property, were made known in an April 6 letter to Gov. J. Joseph Garrahy from Arthur N. Read, state representative in District 87 (Barrington).

Mullen’s reports show that the state does not have clear title to even a major portion of the land in question.

The land was acquired from Conrail and the now-defunct Penn Central Railroad over the past century in a variety of ways, Read wrote. Some of it was purchased and title of this land is not in question.

But some lots were deeded to the railroad with the restriction that they would revert to the owners in the event railroad activity should cease.

“Therefore, it is clear that the state’s ownership to much of this land is in grave doubt,” Read wrote.

To continue with plans for the path through Bristol County would mean the rightful owners of the land could bring suit against the state and claim title to the land before or even after the path were built.

JOSEPH ARRUDA, CHIEF of the DOT’s Planning Division said, however, that the state does have title to the property even though most railroad activity has ceased because there still is the opportunity to continue rail freight service along the right-of-way.

The corridor is being preserved and freight trains could run next to the bike path, Arruda said. If the property were found to have reverted to the original heirs, the state simply would condemn the property and pay the owners fair market value at the time. Federal funds would be available for that expense, he said.

In his letter to the governor, Read suggested this procedure, called eminent domain, would be the only way the state can legally acquire title to the land, although it would be an expensive and time-consuming procedure.

Meanwhile, Read questioned the use of the federal funds slated to finance the $1.2 million bike path because they are earmarked for transportational, not recreational purposes.

The bike path is being designed as a transportational facility, however, according to Arruda. The path will reduce traffic on nearby highways and many bikers will be able to use the path to commute to work.

The path will not interfere with plans for a Park-N-Ride facility planned for the old freight station on Franklin Street, Warren. In fact, commuters from Bristol, for example, would be able to ride their bikes to the Park N Ride, lock their bikes in racks there and carpool into Providence, Arruda said.

Meanwhile, Arruda said the DOT would work in conjunction with the DEM to acquire federal funding for the bike path proposed for Woonsocket to East Providence. The Bristol County path is seen by the state as the beginning of a major system in the state, he said.

A portion of the corridor in East Providence still is used for freight purposes, however, and that poses a problem as to where the two paths would connect, he said.

It was also suggested that the land “should be sold to abutting property owners (to generate) tax revenue for the towns.”
Major Objections

- Will attract crime, graffiti & vandalism
- Decrease property value
- Increase noise
- Safety Concerns
- Waste of Taxpayers' Money
- Many called the path “idiotic”, “ludicrous”, and a “criminal’s highway”.

Escalation of Opposition

1984:

The RI Senate passes resolution to stop construction of the bike path.

Opposition reaches the Federal level. A letter of opposition is sent to the Reagan White House.

1985:

Bristol Town Council reverses itself and withdraws its support of the path.
April 13, 1985 the Hikers Club of RI conducts “Walk the Bike Path” to overcome objections and garner support.
"the perfect confluence of people and talents"

“It was one of the toughest things I ever did in state government, because of really deep seated opposition from many politically connected people. I think Representative Tom Byrnes and I drove Governor Garrahys crazy and many times he wished the whole thing would just go away, but eventually we persevered.

In later years Governor Garrahys said that there were few projects which gave him more headaches while he was in office, but that after it was done he got more positive comments about it than any other thing that he had ever done."

Ed Wood
RIDEM and RIDOT Director
Building the Path
Rhode Island Act 82-H 7762 Section 31-2-23 (J)

Rhode Island State Law Introduced March 11, 1982

“to establish a definition of a bicycle trail or path now being constructed by the state to be used for bicycles, excluding motor vehicles from therefrom and provide penalties of persons operating motor vehicles thereon”

Any person who operates a motor vehicle upon any bicycle trail or path shall be guilty of a misdemeanor, punishable by a fine of One Hundred ($100.00) Dollars
Funding and Cost

- Pare's original estimate was $1.3 million dollars
- November 1984, the FHWA awards $1.3 million
- 100% federal funded by FHWA
- Final Cost $7.5 Million ($517,000 per mile)
- Today's cost of average mile ranges $5k to $535k.
Giving the Narragansett Bay Coastline to the Public

- Construction began May 1986
- 14.4 miles constructed in four phases
- Connects 5 communities
- Joins 8 parks together
- 49 crossings, 2 signalized
- Ten-foot-wide asphalt path
- Five rehabilitated railroad bridges.
Maintenance

RIDEM Parks & Recreation:
- mowing
- trimming
- weedwacking
- split-rail fence maintenance

RIDOT:
- pavement
- structures
- repairs over $5k
Path Design and Innovations
The proposed bicycle facility will be constructed with sufficient width to allow for two cyclists and lateral movement between them. However, ten feet is given as the minimum desirable width of a two-way bicycle facility, allowing for two feet of additional maneuverability.
Bridge Rehab and Design

- Maintain rail substructures
- Re-deck with timber planks
- Sidewalks for fisherman
Design Criteria

Design Speed = 20 mph

Design Radii = 33' / 63'

The minimum design speed for a bicycle path should be 20 mph (AASHTO, 1981). This speed can be achieved on a paved surface over level terrain with no curves. The actual average speed of the majority of bicyclists (85%) with these conditions is 15 mph, although much higher speeds can be reached by cyclists who have the capability of doing so.

<table>
<thead>
<tr>
<th>Design Speed (mph)</th>
<th>FHWA</th>
<th>AASHTO*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>17.5</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
<td>25</td>
<td>35</td>
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<tr>
<td>20</td>
<td>33</td>
<td>63</td>
</tr>
<tr>
<td>25</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>30</td>
<td>48</td>
<td>143</td>
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</table>

*e = 2%
Intersection Treatments

Signalization

S-Curves
Signage and Striping
Root Barriers

Geosynthetic root barriers installed along path edges in appropriate areas.
Minimal Impact = Minimal Permitting

10-b Environmental

The bicycle path project was given a Catagorical Exclusion classification by the Federal Highway Administration, removing the requirement that the study include a detailed environmental assessment.

In addition, the runoff from the bikeway pavement will be free from pollutants such as oil, lead and asbestos deposited on roadways from automobile emissions.

A bikeway, unlike a roadway, will have no negative impacts on the air quality of the surrounding area. Instead, by encouraging people to switch to a non-polluting mode of transportation, the bicycle path will have a positive impact on air quality.
### Ridership Projections

#### Trip Purposes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Estimated Average Daily Bicycle Trips</th>
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</thead>
<tbody>
<tr>
<td>Utilitarian/Destination</td>
<td></td>
</tr>
<tr>
<td>To Work</td>
<td>4.9/1000 Empl.</td>
</tr>
<tr>
<td>To School</td>
<td>20.3/1000 Enroll.</td>
</tr>
<tr>
<td>To Personal Business</td>
<td>11.5/1000 Pop.</td>
</tr>
<tr>
<td>Recreational/Destination</td>
<td></td>
</tr>
<tr>
<td>To Recreational Facility</td>
<td>19.1/1000 Pop.</td>
</tr>
<tr>
<td>Recreational/Non-Destination</td>
<td></td>
</tr>
<tr>
<td>To Visit Friends</td>
<td>22.4/1000 Pop.</td>
</tr>
<tr>
<td>Riding in Neighborhood</td>
<td>57.3/1000 Pop.</td>
</tr>
<tr>
<td>Long Distance</td>
<td>2.6/1000 Pop.</td>
</tr>
</tbody>
</table>

**Trip Gen Calcs**

**Area of Influence**

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*Base Map Source: T.R. #25, October, 1975, Office of State Planning*
Ridership Projections

Estimated Average Daily Bicycle Volumes

- Railroad Right-of-Way
- 1980 Bicycle Volumes
- 2000 Bicycle Volumes
Impact on the Community
Comparing the Objections to the Reality

Concern: Attract crime, graffiti and vandalism
Reality: Self-monitored and community pride
Infrequent incidents not isolated to the path per local police

Concern: Waste of money
Reality: "Best investment in the State" per local abutter
Property Values

Concern - Decreased property values
Reality - Incentive for buyers - mentioned in 20% of real estate listings

"Enjoy being steps from the bike path, marina, Hines Memorial State Park, and of course the Barrington School System!"

"Walk to the town, harbor shops, and the bike path!"
Spurring Economic Development

[Images of a railway station, a bulletin board, a bike shop, and an information sign with a map]
## Points of Interest

<table>
<thead>
<tr>
<th>Point of Interest</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audubon Society of RI Environmental Center</td>
<td>1401 Hope St.</td>
</tr>
<tr>
<td>Blithewold Mansion and Grounds</td>
<td>101 Ferry Rd.</td>
</tr>
<tr>
<td>Bristol Art Museum</td>
<td>10 Wardwell St.</td>
</tr>
<tr>
<td>Bristol Historical and Preservation Society</td>
<td>48 Court St.</td>
</tr>
<tr>
<td>Bristol Maritime Center</td>
<td>127 Thames St.</td>
</tr>
<tr>
<td>Bristol Town Hall</td>
<td>10 Court St.</td>
</tr>
<tr>
<td>Coggeshall Farm Museum</td>
<td>1 Colt Dr.</td>
</tr>
<tr>
<td>Herreshoff Marine Museum</td>
<td>1 Burnside St.</td>
</tr>
<tr>
<td>Linden Place Museum</td>
<td>500 Hope St.</td>
</tr>
<tr>
<td>Mount Hope Farm</td>
<td>250 Metacom Ave.</td>
</tr>
<tr>
<td>Quinta Gamelin Community Center</td>
<td>101 Asylum Rd.</td>
</tr>
<tr>
<td>Roger Williams University</td>
<td>1 Old Ferry Rd.</td>
</tr>
<tr>
<td>Rogers Free Library</td>
<td>525 Hope St.</td>
</tr>
<tr>
<td>Town Beach Complex</td>
<td>40 Asylum Rd.</td>
</tr>
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This map is for planning purposes only.

Print Date: 9/18/2017

Data sources: RIGIS, E911, MassGIS, Town of Bristol
And Tourism, Too!

**Bike Providence Package**

Experience Providence from a totally new perspective - on two wheels!

**BIKE PROVIDENCE**

*When you upgrade your stay, you are upgrading your experience. Book the Bike Providence package and receive 2 top-of-the-line bicycles designed for the Providence Marriott Downtown by Priority Bikes. Your rental is for 2 hours and that should give you plenty of time to discover Providence.*

**THE PACKAGE INCLUDES**

- Overnight accommodations
- Bicycle rental for up to 2 hours
- A map to find places to bike in Providence
- A top bike rental map and information
- We have created routes for you that display scenic views from a quick three-mile trip to the historic East Side to the famous Federal Hill and the shrines and landmarks it has to offer.

**THE EAST BAY BIKE PATH**

The East Bay Bike Path is the longest multi-use bike path in Rhode Island. It travels 14.5 miles from Wickford to Tiverton. Perfect for walking, jogging, or cycling.

**Our Bike Providence Team**

Our Bike Providence team has created partnerships with multiple local bike shops including the East Bay Bike Path. Once you are done exploring Providence, you can take your bike to one of the over 100 bike shops in Rhode Island for repairs.

**VIEW OTHER BIKE RENTALS**

- Bike Rentals in Providence
- Other Bike Rentals

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**APPALACHIAN MOUNTAIN CLUB**

**DISCOVER**

**Rhode Island**

**AMC guide to the best hiking, biking, and paddling**

Christie Matheson
Bike Providence Package

Home > Specials & Packages > Bike Providence Package

BIKE PROVIDENCE

Experience Providence from a Totally New Perspective - on two wheels!

When you upgrade your stay, you are upgrading your experience. Book the Bike Providence package and receive 2 top-of-the-line bicycles designed for the Providence Marriott Downtown by Priority Bikes. Your rental is for 6 hours and that should give you plenty of time to discover Providence.

THIS PACKAGE INCLUDES

- Overnight accommodations
- Bicycle rental for up to 6 hours
- Maps to cool places to go in Providence
- East Bay Bike Path Map and Information

We have created maps for you that display routes from a quick three mile trip to the historic East Side or the famous Federal Hill be satiated and well as mesmerized.

The East Bay Bike Path is the first multi-town bike path built in Rhode Island. It travels 14.5 miles from India Point Park in Providence to Bristol, passing parks, lots of nature and recreation areas. Connecting neighborhoods, schools and business districts, the East Bay Bike Path is perfect for commuting cyclists heading into Providence.

Our Bike Providence Team has created partnerships with restaurants and even a Bike Shop along the East Bay Bike Path. Stop in the Bike Shop and ask for your room key or your Providence Marriott water bottle, you will receive special treatment. It’s great to have connections. Be sure to record your bicycling adventures and tag us @provincemarriott and use #providenceconnections

View other RI Bike Paths
Other Bicycling Maps

BOOK NOW
Lessons Learned
"A victim of its own success"

Path has become an attraction/destination
  - Actual ridership nearing 1 Mil/year

Largest complaint is limited width
  - Current AASHTO: 12 – 14’
Range of Users

Activities on the Path:
- 72% bicycle
- 57% walk
- 24% skate
- 19% run

Distance Traveled on Path:
- 22% 0-3 miles
- 31% 4-7 miles
- 24% 8-12 miles
- 22% >12 miles

Multi-Modal With Desired Connections to Transit
Ridership Projections

Peak-Hour Ridership nearing Daily Projections

### RI Bike Mobility Plan

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<table>
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<tr>
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<td>Weekday AM</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Weekday PM</td>
<td>105</td>
<td></td>
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<tr>
<td>Weekend Peak</td>
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### Minuteman

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<td>243</td>
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<tr>
<td>Weekday PM</td>
<td>435</td>
<td>307</td>
</tr>
<tr>
<td>Weekend Peak</td>
<td>342</td>
<td>171</td>
</tr>
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</table>
Maintenance

- Edge deterioration
- Split-rail design
- Fencing impacts mowing
Root Barriers

- Need to be stronger
- New plantings should have limited root systems.
Typical Section

Current Designs

- Widen paved width – 12 to 14’
- Increase paved depth – 4” thickness
- Subbase under shoulder

Waltham Wayside Trail

East Bay Bike Path
Bridge Rehab

- Rails-to-Trails
- Maintain rail substructures

East Bay Bike Path

Waltham Wayside Trail
Bridge Decking

- Re-deck with Glulam
- Wearing surface
Intersection Treatments - Signalization

TRAFFIC CONTROL WARRANTS FOR INDEPENDENT PATHS CROSSING ROADWAYS

TOTAL BICYCLES - Peak Hour, Both Directions

TOTAL MOTOR VEHICLES - Peak Hour, Both Directions *

STOP CONTROL ON ROADSIDE ACCEPTABLE
OR
STOP CONTROL ON BIKEWAY ACCEPTABLE

SIGNALIZATION OR GRADE SEPARATION ACCEPTABLE

* FOR STOP ON BIKEWAY, MOTOR VEHICLE VOLUME IS TOTAL IN BOTH DIRECTIONS FOR STOP ON ROADSIDE, MOTOR VEHICLE VOLUME IS TOTAL IN PEAK DIRECTION

SOURCE: FHWA

FIGURE 2-7

TRAFFIC CONTROL WARRANTS

EAST BAY BICYCLE FACILITY

RACER Path

Speeds of 35 mph or loss

L = crosswalk length for use when considering HAWK

CONSIDER HAWK OR PED SIGNAL ONLY

PED SIGNAL (PEAK HOUR)

0

CONSIDER HAWK OR PED

CONSIDER HAWK OR PED SIGNAL (PEAK HOUR)

20

(150 vph or
1,500 vpd)

MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

TOTAL OF ALL PEDESTRIANS CROSSING THE MAJOR STREET - PEDESTRIANS PER HOUR (PPH)

* RECOMMENDATION BASED ON CITY OF BOULDER SAFETY EVALUATIONS AT EXISTING RRFB SITES AND OBSERVED IMPACTS TO VEHICULAR TRAFFIC OPERATIONS

Waltham Wayside Trail

East Bay Bike Path
Intersection Treatments - S-Curves

East Bay Bike Path

Waltham Wayside Trail
Signing Lasts Longer Than Striping
Additional Amenities
30 Years in Retrospect
What We Have Learned?

Time Tested Elements
- Rails-to-Trails
- Feasibility Study
- Public Outreach
- Design Criteria
- Bridge Rehab Methods
- S-Curves

Areas for Improvement
- Increased Paved Width
- Increased Paved Depth
- Bridge Deck Material
- Root Barrier/Maintenance

Obstacles Overcome
- State/Municipality Reservations

Continuing Trends
- Public Opposition
- Need for strong advocacy!
Our thanks to the many people who took the time to answer our questions and share their memories of the creation of the East Bay Bike Path.