

# 3

## OPEN SPACE & RECREATION PLAN RECOMMENDATIONS



Based on the Level of Service determination, benchmarking of similarly sized communities, assessment of the physical and locational characteristics of the various parcels examined, input from the public, project committee and Township and Borough representatives, the following trails and recreational facilities are recommended.

### Trail Types – Descriptions

#### Bikeway Classifications

The following are nationally recognized bikeway classifications as per the American Association of State Highway Transportation Officials (AASHTO). These classifications are specific to bicycle transportation routes and do not include other pedestrian facilities such as sidewalks and off-road hiking trails which are described later in this chapter.

**Class 1 Bikeways** are pathways completely separated from a roadway. They are also known as ‘off-road trails’, ‘greenways’, ‘shared use paths’, and/or ‘multi-use paths’. The AASHTO recommended width for multi-use paths is 10 feet with 8 feet being the minimum recommended width for a two way trail.

**Class 2 Bikeways** are designated bicycle lanes within a roadway for exclusive use of the cyclist and contains special pavement markings and signage. Bike lanes are one-way in the direction of motor vehicle traffic. The standard width for a bike lane is five (5) feet.

**Class 3 Bikeways** are also known as ‘Bike Routes’. These offer no special accommodations for the cyclist within the road right-of-way. Signs such as “Bicycles May Use Full Lane” or “share the road” are used to define the route and the cyclist shares the roadway with vehicular traffic. Class 3 bikeways sometimes include improved shoulders for additional use by bicycles. Typically, for shoulders less than 4 feet wide it is assumed that bicyclists will be in the vehicular travel lane.

## Multi-Use Trail (Off-Road)

The trail type that provides for the largest cross section of trail users is a Multi-Use Trail, also known as Class 1 Bikeways (as described above). The following paragraph provides a nationally recognized definition of a Multi-Use Trail and its typical design criteria.

*“The American Association of State Highway and Transportation Officials (AASHTO) defines a Multi-Use Trail or Shared Use Path as: a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.”*

As the definition suggests, this trail type provides for a variety of trail users, depending on the trail surface paving and available right-of-way width. Another general trait of multi-use trails is universal accessibility for those with disabilities. This is due to gentle slopes, adequate widths, and smooth surfaces. Parking areas for multi-use trail segments should provide facility access in accordance with the Federal Americans with Disabilities Act (ADA) guidelines to provide for trail users with disabilities.

Both the Rails-to-Trails Conservancy (RTC) and AASHTO recommend a multi-use trail to be ten feet (10’) wide, with the minimum width for a two-way trail at eight feet (8’), and for a one-way trail at five feet (5’). Depending on the user volume, widths of twelve feet (12’) or fourteen feet (14’) are recommended to avoid potential conflicts. An additional two-foot (2’) shoulder is recommended on either side of the trail surface to provide clearance from trees, poles, walls, fences or any other lateral obstruction. Site conditions may warrant additional safety measures such as fencing and increased shoulder widths.

## Walking / Hiking Trails

A walking or hiking trail may be defined as a recreational trail that does not meet the design requirements of a multi-use trail such as width, slopes & surfacing. An advantage of walking trails is that they can allow for access and recreational use of the land quickly at a relatively low cost. A disadvantage of walking trails is that they generally limit the number and type of trail users due to their minimal width, steeper slopes, and softer surfaces, and generally do not meet ADA requirements.



## Trail Surface Types

### Asphalt

Asphalt surfaces provide for the widest variety of trail users including bicyclist, walkers, joggers, wheelchair users, and in-line skaters. Initial installation costs are relatively high compared to other trail surface types, however long term maintenance costs will remain lower when compared to other surfaces if properly installed and maintained. Asphalt trails are preferred in flood prone areas.

### Crushed Limestone

Crushed limestone surfaces can accommodate all trail user types with the exception of in-line skaters. Initial

installation costs for this trail surface are relatively low, however long term maintenance costs increase due this surface's higher susceptibility to erosion, especially if not properly installed with swales and cross drains. A crushed limestone surface can also serve as base material for an asphalt surface if trail use increases or funds become available for a surfacing upgrade. Crushed limestone surfaces should be avoided in flood prone areas or steep slopes. If their gradients fall within limits, these surfaces can be ADA accessible.

### Compact Earth

Compact earth surfaces are the least expensive to install, however they limit the types and number of trail users. Compact earthen surfaces are primarily used for hiking only or horse trails adjacent to multi-use trails that receive significantly less trail user volume. Hiking trails may be



considered as an alternate means to reach the more environmentally sensitive areas found within the floodplain area to provide routes to a stream for environmental education, bird watching, or fishing access.

Trails and many other recreational facilities are commonly developed within floodplains to take advantage of the relatively flat land. These trails may require additional maintenance to remove debris deposited by a flood event. If a trail is placed where flood waters will have a significant erosion effect, asphalt surfaces are recommended. Trails should generally not be located within a floodway, which is where the most significant flood damage occurs.

Sources:

Guide For Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO), 1999;

Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails, Rails to Trails Conservancy (RTC), 1993.

## Bicyclist Types

The American Association of State Highway and Transportation Officials (AASHTO) classifies bicyclists into one of the following three groups:

Group A – Advanced Bicyclists – These riders generally use their bicycles as they would a motor vehicle. They are riding for transportation, convenience, and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with vehicular traffic. They prefer a sufficient operating

space on the travel way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.

Group B – Basic Bicyclists – Less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.

Group C – Child Cyclists – Riding on their own or with their parents, child cyclists may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles, can accommodate children without encouraging them to ride in the travel lane of major arterials.

It is estimated that only 5% of bicyclists overall would qualify as Group A or Advanced Bicyclists, therefore 95% fall into either Group B or C. (Source: AASHTO - Guide For Development of Bicycle Facilities)

## GIS Mapping

Trail base mapping for the project was created using a Geographic Information System (GIS) program. This GIS program is used as a data management and graphic tool to create the trail mapping exhibits; to calculate accurate lengths for trail segments; and, to identify impacted land parcels. Base data used in the formulation of this report

was provided by Woolwich Township and Gloucester County, New Jersey.

## Proposed Trail Connections

Through discussions with the project committee, the public participation process, the existing conditions analysis, and it became apparent that the Township and Borough lack trail infrastructure for both recreation and non-motorized transportation connections to parks, open space, schools, and other important destinations. Pedestrian sidewalks are also lacking throughout much of Woolwich further limiting the ability for recreational opportunities via safe pedestrian connections.

This plan proposes to create the links between residents, recreational destinations, and future centers of development. These trail and bicycle links will establish a network that connects the community to parks and open space, connects to destinations and trails in adjacent municipalities, and will create additional recreational opportunities for the community.

All proposed trail improvements are shown on the Trails Map at the end of this chapter.

## On-Road Routes (Bikeways)

These routes are intended to provide safe connections to various destinations and recreational facilities. On-road routes include a combination of class 2 bikeways (designated bicycle lanes) and class 3 bikeways (“share the road”/“bicycles allowed use full lane” bicycle routes).



Class 2 bicycle lanes should be implemented along routes of high anticipated use and also where determined to be feasible based upon a review of existing right of way widths and site conditions. Class 3 share the road routes should include an improved shoulder (3 foot wide minimum) with appropriate signage and striping to clearly indicate a shared road situation. Class 3 routes are proposed in areas where existing right of way widths or existing site conditions do not allow for five foot bicycle lanes. These routes are intended to be used by class B and C cyclists and provide important cross connections within the community and to adjacent municipalities.

Major on-road routes proposed on the Trail Plan include:

- Township Line Road
- Auburn Road
- Kings Highway

- Pedricktown Harrison Road
- Monroeville Road
- Franklinville Road
- Russel Mill Road
- Swedesboro Paulsboro Road

Certain trail segments have been proposed as a combination on-road bicycle route with pedestrian sidewalks. Major on-road / sidewalk routes proposed on the Trail Plan include:

- High Hill Road
- Locke Avenue
- Swedesboro Paulsboro Road
- Asbury Station Road

- Garwin Road
- Auburn Road
- Kings Highway

It will be especially important for the Township to consider safe pedestrian connections along High Hill Road as this will be a main recreation center.

## Off-Road Routes - Multiuse Trails

These connections are proposed to provide safe recreational and transportation opportunities within the Township and Borough. Multiuse routes are separated from vehicular traffic and are intended for pedestrians and bicyclists of all skill levels.

Multiuse pathways proposed on the Trail Plan are primarily located in the area along High Hill Road where a network of trails has been proposed to link Swedesboro and Locke Avenue/High Hill Park to Lapalomento Park and Palladino Field. It is recommended that this area become the major recreational hub.

A second proposed multiuse trail links Beckett Golf Club west to Charles Harker School, proposed Auburn Village and Township Line Road. This trail continues south along Oldmans Creek and terminates at the Township owned parcel off of Meadow Lark Drive. This trail should be taken into consideration as the plans for Auburn Village move forward. This trail should connect to the “central green space” proposed as part of the village plan.

Multiuse trails are also proposed within the future regional center area. These trail locations and types should be taken into consideration and examined more closely as the regional center plans move forward. It will be important to connect the regional center to Swedesboro and Locke Avenue/High Hill Park.

## Off-Road Routes - Walking / Hiking Trails

Several walking/hiking trails are proposed on the Trail Plan. These routes are not intended for bicyclists. The first walking route is in the eastern side of the Township connecting the existing trail at Lake Narraticon Park to Monroeville Road and then south along the perimeters of several preserved farms along Narraticon Run. This trail would link to the existing Beckett Golf Club.

A second walking trail is loop trail proposed from Narraticon Park south along the New Jersey Turnpike through several preserved farms. This trails also connects to Ogden Road.

Several of the above mentioned walking trails are proposed on preserved farmland. These trails have been identified as great opportunities for agritourism, however, easements or agreements would need to be negotiated with property owners to allow trails on privately owned property. If agreed upon, these trails should be constructed with appropriate fencing or vegetative buffers so trail use does not conflict with the ongoing farm activities. Several other trail connections are proposed on private parcels that are not preserved farms. The Township will also need to obtain easements or consider friendly acquisition of these properties in order to construct the trail in these locations.

The plan identifies multiple locations where pedestrian bridges may be needed to construct trails over streams and wetlands. These locations will need to be further examined during design and engineering to determine the most appropriate location for waterway crossings. Boardwalk trails may also be an alternative to crossing of wetland areas.

## Water Trails

Two water trails have also been proposed as part of the plan. One water trail is proposed along Raccoon Creek and one along Oldmans Creek. These trails provide recreational opportunities for kayaking or canoeing. Multiple boat launch areas have been proposed along each water trail to provide multiple resting spots and safe entry and exit from the water.

All proposed trail improvements are shown on the Trails Map at the end of this chapter.

## Regional Connections

The Regional Trails Map at the end of this chapter displays proposed trail connections to adjacent municipalities and other existing, proposed, and planned regional trails. Woolwich Township and the Borough of Swedesboro are bordered by 7 municipalities. The trail plan makes direct connections to all of these municipalities except Greenwich Township which only borders Woolwich in a small area in the northern corner of the Township.

The trail plan links to multiple regional trails including existing and proposed on road and off road routes identified by the Cross County Transportation Management Association and Gloucester County. The planned Delaware Estuary Route lies to the north of Woolwich and Swedesboro in Logan Township. This trail would continue east into Greenwich Township and beyond to National Park. The DVRPC Circuit lies just across the Delaware River in Pennsylvania and to the north in Camden, NJ. The Circuit is a network of existing and planned trails that, when completed, will total approximately 750 miles of bicycle and pedestrian trails in the greater Philadelphia Area.

All proposed regional trail connections are shown on the Regional Trail Map at the end of this chapter.

## Recreational Facilities Concept Diagrams and Recommendations

Concept diagrams were completed for 7 locations in the Township that were identified as priority areas for potential recreation facility development. The diagrams are meant to recommend potential uses appropriate for each site studied. Specific uses and arrangements will need to be more closely examined by the Township based on need, funding, priority, and detailed site constraints to be identified in the engineering phase. The concept diagrams for the sites mentioned below are located at the end of this chapter.

### Palladino Field and Lapalomento Family Park (Map 1)

Given its proximity to Locke Ave/High Hill Park and the opportunity to create a large recreational network along High Hill Road, It is recommended that Palladino Field remain primarily passive unless it is determined that overflow fields are needed in the future. The area could be used as a nature trail area with ongoing farming or meadow lands.

If additional fields are needed to compliment the fields at Locke Avenue/High Hill Park, the Lapalomento Family Park can accommodate approximately nine athletic fields. The rear portion the site is proposed as a meadow area or area for temporary uses such as concerts or

PROPOSED TRAIL MATRIX						
Trail Letter	Trail or Road Name	Trail type	Approx. Length (mi)	Limits	Priority (High / Medium / Low)	Notes
A	Swedesboro Paulsboro Road	On road & multi use	2	Township Line to Rt 551	Mixed	Coordinate with Regional Center
B	Route 322	Multi Use	3.5	Township limits	Medium	Coordinate with Regional Center
C	High Hill Road	On road with sidewalk	1.7	Township line to Rt. 551	High	Bicycles and pedestrians
D	Multi - parcel off road trail	Off -Road	6.4	Multiple parcels	High	Walking & Multi Use
E	Center Square Road (EXISTING)	Off Road	1.7	Township Line to Municipal Complex	High	Boardwalk trail at west end to be built
F	Auburn Village Connector Trail	Off-Road	8.7	Oldmans Creek park parcel # 16 to Beckett Golf Club	Medium	Through many proposed open space parcels and some preserved farmland
G	Pedricktown Harrison Road	On Road	4.8	Township limits	Low	Major southern E/W connector
H	Auburn Road (Rt. 551)	On-Road, & Multi-Purpose	5.8	Township limits	Low	Major N/S connector
I	Kings Highway	On-Road	3.5	South Twp Line to Auburn Rd	Medium	County Planned Bike Route
J	Russell Mill Road	On-Road	4	Pedricktown Harrison Rd. to Rt. 322	Low	On Road - bicycles only
K	Agriculture Trail	Off-Road	3.3	Beckett Golf Club to Monroevill Rd.	Low	Walking only - no bikes
L	Turnpike Loop Trail	Off-Road	1.5	Lake Narraticon to Ogden Rd.	Medium	Walking only - no bikes - some preserved farmland
M	Monroeville Road Trail	On-Road	1.7	Russell Mill Road to Auburn Rd.	Low	On Road - bicycles only
N	Locke Avenue Trail	Multi-Use	0.8	Raccoon Creek to Prop. Regional Center	High	Coordinate with Regional Center
O	Northern Circuit Trail	On-Road	3.8	Auburn Rd. / Kingsway H.S / Kelley Rd. / Ashburn Station Rd. /	Low	Coordinate with Regional Center
P	Municipal Complex Trail	Off-Road	0.3	At Municipal Complex	High	Walking Only
Q	Lake Narraticon Trail (Partially existing)	Off-Road	1.2	Monroeville Rd. to	High	Connect to Swedesboro center
R	Franklinville Road	On-Road	1.6	Auburn Rd to Russell Mill Rd.	Medium	Scenic
S	Raccoon Creek Water Tail	Water Trail	2.5	Township Limits to State open space site #29	High	4 Prop. Landings
T	Oldmans Creek Water Trail	Water Trail	4	Twp Limits to Possible Park site # 23	Medium	3 Prop. Landings
U	Township Line Road	On-Road	2	High Hill Rd. to Pedricktown Harrison Rd.	High	On Road - bicycles only
Total Length			64.8			



events. A boat launch site and associated parking is also recommended adjacent to the existing bridge. Trails and vehicular driveways in this area should utilize the existing alignments to minimize new development within wetlands and wetland buffers.

## NJDEP Wildlife Management Parcel (Map 2)

As discussed in Chapter 2, the Township has discussed swapping a parcel of Township owned land (which has not yet been identified) to the State in exchange for this parcel. Should this parcel be acquired through a land swap with the State, it is recommended that it remain primarily passive. Two picnic areas are proposed adjacent to the existing pond. It is recommended that the existing pond utilized to allow for swimming or fishing. The remainder of parcel is proposed to be utilized for nature trails around meadow or farmland. It is recommended that the residential parcel with existing house directly to the north of the NJDEP parcel be acquired and utilized as a nature center or Parks and Recreation Department offices with a youth programming area adjacent to the creek. A new pedestrian connection and bridge is proposed to the High Hill West fields.

## Locke Avenue / High Hill Park (Map 2)

The undeveloped parcels at Locke Avenue/High Hill Park are recommended for active recreation facility expansion. The area can accommodate approximately 7 soccer/multiuse fields, 3 baseball fields, 4 tennis courts, a 1.5 acre dog park, a playground/picnic area, and an open unprogrammed use that could be used for various activities as needed. It is also recommended that a boat launch area be constructed at this location to allow access for car top boating. The quantities and locations

for all recommended uses should be further examined and confirmed in the engineering phase.

A swim club/YMCA has been proposed on the 10 acre, former PMC parcel with access off of Locke Avenue. The Township has indicated that discussions have previously occurred with YMCA about a facility in this location.

## Weatherby Development Open Space Parcels (Maps 3 and 4)

It is recommended that the existing open spaces associated with the Weatherby Development remain passive and be utilized as open space for nature trails or connector trails to High Hill Road. These trails should connect to the residential community through the existing maintenance access locations as identified on the mapping. Precise alignments will have to be more closely studied in the engineering phases. A survey will be needed to determine the most appropriate routes as topography is quite steep in some areas, and existing stormwater management basins will need to be avoided, and tree removal minimized.

## Woolwich Township Municipal Complex (Map 5)

Through discussions with the project committee it was determined that future uses at the Woolwich Municipal Complex should be primarily passive. The concept diagram shows a community garden expansion, playground, dog park, open picnic and play area, and connector trails. It is anticipated that lands around the municipal complex will eventually be developed with commercial and residential uses. The municipal complex will need to serve as a local park space for these future residential communities and the existing Weatherby and Four Seasons developments. Pedestrian trails are proposed to link future development

to the municipal complex while an enhanced tree buffer will provide separation between the two uses. Area for parking expansion is also available.

## Indian Branch Parcels (Map 6)

The four privately owned parcels around Indian Branch should be considered for future acquisition by the Township in order to preserve the important natural features and wildlife habitats on site. It should be a priority to protect the existing bald eagle nest. It is recommended that much of the area be used primarily for nature trails and bird watching, with the exception of the large, flat clearing along Township Line Road. This area should be used for future athletic fields as needed due to its gentle slopes, minimal vegetation that would need to be cleared, and close proximity to Beckett Park in Logan Township. This area could become a second active recreation hub to serve the future residents at Auburn Village and other existing residents in the southern portion of the Township.

## Beckett Golf Club (Map 7)

In discussion with the project committee it was revealed that the owners of the Beckett Golf Club may be considering a possible reconfiguration of the golf course from 27 to 18 holes. The Township has shown interest in potentially purchasing a portion of the property for future municipal use. Should this occur it is understood that the golf course would occupy the entire eastern portion of the site and potentially a small piece of the western side of the site.

Should the Township take ownership of the remaining land it is recommended that uses compatible with the golf course be considered. The concept diagram displays potential compatible uses such as disc golf, a skate park, BMX bike park, miniature golf, roller hockey, and a community center.

It is also recommended that the portion of the property that is currently undeveloped be used for more passive uses such as nature trails, swimming, and winter sledding.

This area could also be used for future athletic field expansion if needed however it is recommended that Locke Ave/High Hill, Lapalomento Park, and the parcels around Indian Branch take precedence for this use.

## Swedesboro Auction Park

The project committee identified two passive uses that have been previously considered at the Swedesboro Auction Park. These uses include a performance stage and community garden. It is recommended that a seating area and display garden, and unprogrammed open field also be considered in order for the site to serve as a small neighborhood park for surrounding residents. Public rest rooms should also be included.

## Former Nike Missile Silo Site

The former Nike Missile Silo site provides a unique opportunity to serve residents with passive recreation in combination with historical interpretation. Recommended uses include seating and viewing areas, walking paths, parking areas, public restrooms, interpretive signs, and/or a botanical garden. It is recommended that the Township first take steps to clean the site prior to planning of any future uses. Trails should also be considered to link this site to the future regional center and Swedesboro Paulsboro Road.

## Former Japanese Internment Camp Site

The former Japanese Internment Camp site is currently privately owned. It is recommended that the Township

consider this parcel for acquisition should it become available. The site is located directly adjacent to the Locke Avenue bridge and could serve as a “gateway” (along with the Swedesboro Auction Park) to Swedesboro and Locke Avenue/High Hill Park. The site also has valuable access to Raccoon Creek. In discussions with the committee it was mentioned that the location of the site may be ideal for light commercial such as an ice cream shop or boat rental along with public use such as a picnic area or boat launch.