CENTER TOWNSHIP

SAFE ROUTES TO SCHOOLS FEASIBILITY STUDY

Center Township, Beaver County, Pennsylvania
July 20, 2008

PASHEK ASSOCIATES
ACKNOWLEDGEMENTS

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In 2004, the Center Area School Board established a Health and Wellness Council. The program follows the model developed by the American Cancer Society and is encouraged by the Pennsylvania Department of Health and the Pennsylvania Department of Education.

The purpose of the Council is to bring individuals together from the Center Township community to address issues affecting the health and well being of children in the Center Area School District. The Council identifies local concerns, establishes priorities, makes recommendations, and provides leadership to promote the creation of more healthy environments in the local schools and community.

Primary Goals of the Center Area School District Health and Wellness Council

1. Increase student awareness for physical activity
2. Improve nutritional choices and awareness for students and staff
3. Create a school / community fitness center
4. Establish a safe routes to schools program
5. Establish a Center Area Education Foundation

In 2004, the Council recognized the significance of providing safe walking and biking opportunities from neighborhoods adjacent to the schools located in the Township. Therefore, the Council recommended to the Center Area School District that they enter into a partnership with Center Township, the Beaver Valley Intermediate Unit, the Beaver County Vocational and Technical School, and the Community College of Beaver County, for the purpose of completing a Safe Routes to Schools Feasibility Study and Master Plan.

This recommendation was looked upon favorably by the District and the proposed partners. In the fall of 2004, the Township applied for a Pennsylvania Department of Conservation and Natural Resources Community Conservation Partnership Program grant to assist with funding the study. In the fall of 2005, the grant was acted upon favorably and in February of 2006 this study began.
SAFE ROUTES TO SCHOOLS

Ask the question, “How did you get to school when you were a kid?” to a roomful of adults, and chances are the majority will say that they walked. If you ask them what they experienced while walking, the following responses are typical:

- My brothers and sisters and I got together with some neighbor kids and we all walked together. It was really fun.
- Man, we were really awake when we got to school! It was cold out in the morning and walking really got our blood going.
- My mom walked with me when I was little, and then I walked with my big sister. I loved it when we got to go by ourselves – it made me feel really grown up!
- It was always nice and quiet walking down the road in the morning. The air smelled good and we got a chance to see all the trees blossom, change their leaves and all.
- When I got to be about 12, I didn’t walk anymore. I rode my bike and that was a whole new feeling of freedom. My friend and I used to zoom through the streets. There weren’t very many cars out.

Seldom do people respond by saying anything negative about walking to school. There may have been the occasional bully, but as one man said, “He gave us a reason to run fast and we got stronger!” Today however, in the United States, fewer than fifteen percent of children walk to school every day.

In response to this situation, many efforts to encourage walking and biking to school have developed. These efforts have become known as the Safe Routes to Schools Movement. The goal: increase the number of children who walk and bike to school safely.

The Problems

To understand why we are discussing safe routes to schools, we must answer this question: Why has there been a decline of children walking and bicycling to school?

That is not an easy question to answer. However, we realize the United States is not the same as it was in fifty years ago. If we look at how life has changed during the past fifty years, some explanations begin to emerge. There have been significant changes in three major areas: community design and travel patterns, environmental quality, and health and wellness.

Community Design and Travel Patterns

Before World War II, Americans lived in compact towns and cities, and they walked to shops, schools, and work. While the United States population has nearly doubled, from 150 million in 1950 to 287 million in 2002—and the population in urban areas has increased by twenty percent, the percentage of urbanized land has changed much more dramatically; it has quadrupled. The suburbanization of America has resulted in communities that are significantly more spread out. The size of residential lots is much greater now than before 1950. For example, in 1950 around the Chesapeake Bay, each person required 0.18 of an acre for residential and commercial use. By 1988, each person required 0.65 acre.

This expansion around towns and cities significantly changed travel patterns. Where walking and transit use once predominated, the car has become the normal way to get around. The number of vehicle miles traveled increased from 718 billion per year in 1960, to more than two trillion per year in 1999.

As with land use, the increase in motor vehicle use has grown much faster than the rate of population growth. Driving to
school has significantly contributed to increased auto use. It has been estimated that the “school run” adds 20-30 percent to traffic volume during the morning commute. 

Changes in land use and driving patterns certainly seem to have contributed to the decreasing number of children walking to school. Have other changes led to the Safe Routes To Schools movement? It appears that the answer is yes.

Environmental Quality

At the same time as land use and transportation practices have been changing, we have seen significant changes in environmental quality. Air pollution concerns in the 1960s and ’70s resulted in the passage of regulations aimed at reducing various pollutants. While many air pollutants have decreased during the past thirty years, the decline is now threatened by the continuing rise in the number of cars and trucks on the road, and in the miles each vehicle is driven.

However, one important emission has not decreased, carbon dioxide. This greenhouse gas is released in direct proportion to the gallons of gasoline consumed. The amount of carbon dioxide American cars and light trucks emit into the atmosphere has steadily increased. From 1970 to 1999, the amount increased by fifty-six percent, culminating in an estimated three hundred million metric tons of carbon dioxide being released in the latest year. Concerns about global warming have grown during this period as well.

Changing land development and driving patterns have also caused loss of natural habitat and farmland. Water quality suffers because more pavement is required to handle the increase in vehicles. This results in runoff of water laced with toxic substances from the pavement into lakes, streams, and rivers instead of being absorbed by the earth.

Health and Wellness

During the past twenty years, obesity among adults has risen significantly in the United States. The latest data from the National Center for Health Statistics shows thirty percent of U.S. adults twenty years of age and older, over sixty million people, are obese. This increase is not limited to adults. The percentage of young people who are overweight has more than tripled since 1980. Among children and teens aged six to nineteen years, sixteen percent, over nine million young people, are considered overweight.

The Center for Disease Control has documented that Obesity among Americans is growing at an alarming rate:

- In 1991, four states had obesity prevalence rates of 15-19 percent and no states had rates at or above 20 percent.
- In 2004, 7 states had obesity prevalence rates of 15–19 percent; 33 states had rates of 20–24 percent; and 9 states had rates more than 25 percent.
In 1969, roughly half of all children walked or biked to school. Today, only about 15 percent walk or bike.\footnote{9}

There are more than three times as many overweight children today as there were 25 years ago.\footnote{9}

As much as 20 to 30% of morning rush hour traffic can be parents driving children to schools.\footnote{9}

A review of the Center Area School District’s K through 12 Grade BMI Summaries for 2004 and 2005 indicate the following:

- In 2004, approximately \textit{thirty-four percent} of the District’s students were either at-risk or obese.\footnote{10}
- In 2005, approximately \textit{twenty-eight percent} of the District’s students were either at-risk or obese.\footnote{10}
## Center Area School District K through 12 Grade Body Mass Index Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Below Stature 0% - 5%</th>
<th>Average 5% - 85%</th>
<th>At-Risk 85% - 95%</th>
<th>Obese 95% - 100%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>17</td>
<td>1176</td>
<td>329</td>
<td>289</td>
<td>1811</td>
</tr>
<tr>
<td>2005</td>
<td>49</td>
<td>1264</td>
<td>287</td>
<td>297</td>
<td>1897</td>
</tr>
</tbody>
</table>

### Center Area School District 2004 BMI Summary

- **Below Stature (0% - 5%)**
  - 17 (1%)
- **Obese (95% - 100%)**
  - 289 (16%)
- **At-Risk (85% - 95%)**
  - 329 (18%)
- **Average (5% - 85%)**
  - 1176 (65%)
The Body Mass Index Summary of the District’s current student population indicates at-risk and obesity rates of the Center Area School District Student population are consistent with the current national averages. The national rates of obesity among youth have tripled in the last 30 years.
Local, State and National BMI Averages

Sixteen percent of Center Area School District’s population is considered obese, while the State average is eighteen and two tenths of a percent, and the National average is fifteen and one-half percent. 11

Health Consequences

These increasing rates raise concern because of their implications for Americans’ health. Being overweight or obese increases the risk of many diseases and health conditions, including the following:

- Hypertension
- Dyslipidemia (for example, high total cholesterol or high levels of triglycerides)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis
- Sleep apnea and respiratory problems
- Some cancers (endometrial, breast, and colon)

The conclusions are eye-opening:

✓ The increasing number of obese children and youth throughout the United States has led policy makers and health professionals to rank obesity as a critical public health threat.

✓ Today there are nearly twice as many overweight children and three times as many overweight adolescents as there were in 1980, as a result of poor diet and physical inactivity. A report published by the Pennsylvania Department of Health indicates the prevalence of overweight youth in Pennsylvania, thirty-five percent, is higher than the national average of thirty percent.

✓ Students consume a minimum of a third of their daily calories and perform a minimum of twenty to thirty percent of their daily physical activity during school hours, according to the USDA and Institutes of Medicine. According to the USDA, between 1989 and 1996, children’s calorie intake increased by eighty to two hundred and thirty extra calories a day. This equates to an extra eight to twenty-four pounds each year.

✓ A report by the Centers for Disease Control and Prevention found that one in three children do not engage in the recommended level of daily vigorous physical activity, and those numbers decline as children move into adolescence. Pennsylvania schools fall short of the national guidelines for physical education, a state where nearly half of the middle and high-school students report they spend more than two hours per day watching television.

✓ In essence, our children move less and eat more than they did twenty years ago, thus driving the epidemic of childhood obesity.

Economic Consequences

Overweight and obesity and their associated health problems have a significant economic impact on the U.S. health care system (USDHHS, 2001). Medical costs associated with overweight and obesity may involve direct and indirect costs (Wolf and Colditz, 1998; Wolf, 1998). Direct medical costs may include preventive, diagnostic, and treatment services related to
obesity. Indirect costs relate to morbidity and mortality costs. Morbidity costs are defined as the value of income lost from decreased productivity, restricted activity, absenteeism, and bed days. Mortality costs are the value of future income lost by premature death.

The Center for Disease Control shows that in Pennsylvania six and two-tenths percent of the total population is either overweight or obese, and they estimate that $4,138,000,000 in medical costs can be directly and indirectly attributed to medical services related to obesity. 12

Schools are not to blame for these problems. However, they can be a critical part of the solution since they have a powerful impact on children's behaviors, attitudes, and preferences.

Current Municipal Attitude Towards Providing Walkable Communities

When the Center Township Development Coordinator was asked during a key person interview what the Township's attitude was towards requiring developers to build sidewalks as part of their developments within the Township, he indicated the Township Supervisors do not proactively seek developers to install sidewalks. He said if it is a developer's belief the proposed development can be marketed without sidewalks, then they are generally approved without them.

He also indicated that although the Township's Land Development and Subdivision Ordinance requires sidewalks, it provides for a plan to be approved on a Conditional Use, and allows the Township Supervisors to waive the sidewalk requirement.

The Township residents should have serious concern with this philosophy. It allows those developing within the Township to build what they want, without regard to how it will affect the Township in over the long-term. The Township would never allow a developer to construct a major development project in the Township without considering the type of traffic impacts it may have, and what kind of traffic improvements should be constructed in conjunction with the project.

Benefits of Safe Routes to Schools

Valid as the reasons of why children don't walk to school are, there are benefits that can be gained from walking or biking to school on a daily basis:

 ✓ Children who are active are alert and do well in school
 ✓ Being active improves self-image and independence
 ✓ Physical activity prevents obesity and promotes healthy heart and lungs, lessening the risk of cardiovascular disease
 ✓ Children who are outside in their neighborhoods develop an understanding and comfort with their surroundings, and learn to make their way in the world
 ✓ If fewer children are driven to school, fewer car trips are needed, thus reducing air pollution, noise pollution, and other environmental impacts of driving
 ✓ Increasingly congested roads take a toll on the emotional well-being of adults. One less car trip gives a parent or guardian some breathing space in his or her day
 ✓ When parents and children walk even a block or two together on the trip to school, the benefit of “quality time” comes in tandem with improved fitness
 ✓ When more people are out and about, there is less chance of criminal activity as those who commit crimes do not want to be caught, thus increasing the chance of being seen reduces the chance of a crime being committed
Community Background

Location

Center Township is located in central Beaver County, approximately twenty-five miles northwest of the city of Pittsburgh, and is comprised of approximately fifteen and a half square miles of land. The Township is bordered by the Ohio River and Monaca Borough to the north and east, Potter and Raccoon Township’s to the west, and Hopewell Township to the south.

Center Township is home to three colleges, along with being one of the largest retail centers in Beaver County. It is advantageously located with respect to the regional transportation network.

The Township is bisected by the Beaver Valley Expressway (PA State Route 60), which connects to the Parkway West in the vicinity of the Pittsburgh International Airport. The Township is served by two interchanges on the expressway, along with being home to the newly constructed Beaver County Transit Authority Terminal. Well-kept roads and a limited-access highway provide close access to shopping centers, educational institutions, theaters, social centers and other retail business services. Both Greater Pittsburgh International Airport and the Pennsylvania Turnpike are only fifteen minutes away.

According to the 2000 U.S. Census, there were 11,492 people, 4,270 households, and 3,317 families residing in the Township. Within the 4,270 households, 31.2% have children under the age of 18 living with them.

History

Center Township was created from Moon Township in 1914. From its incorporation until the 1950’s, the Township remained a primarily rural/agricultural community. Between 1950 and 1960, population from more urban centers of Beaver County migrated to the Township, however, the major employment centers now present in the Township did not yet exist. Since the 1960’s, Center Township has changed from a rural community to a suburban community with its own employment centers. The Beaver Valley Mall, Pennsylvania State University, Beaver County Community College and the Beaver Vocational Technical High School have been established since the 1960’s.

Over the years, the Township has experienced commercial development along Brodhead Road and PA Route 18, and bedroom community style residential development throughout the remainder of the Township.

Study Area

At the first Steering Committee, the Consultant presented a base map of the general geographic area of the project area to the attendees, and asked them to define the area they would like to be evaluated. The attendees began by identifying the destinations they desire to connect. They include:

1. Todd Lane Elementary School
2. Center Area High School
3. Beaver County Community College
4. Beaver County Vocational Technical School
5. Beaver Valley Intermediate Unit
6. Proposed Center Grange Primary Center
7. Center Township Municipal Park

Next, the committee members graphically identified neighborhoods adjacent to the destinations established above. During
this process, the members expressed concern over road corridors and particular intersections that they feel are not safe for pedestrian use. The consultant suggested that the study area be defined broadly, and that during the course of this study roadways and intersections would be evaluated to determine if improvements could be made to improve pedestrian and bicycle safety.

At the conclusion of this exercise the project study area was defined as being generally bounded by the following roads:

- North: Old Brodhead Road
- East: Chapel Road
- West: Brodhead Road
- South: Shaffer Road

The steering committee members asked the consultant to include residential neighborhoods along both sides of the roads that form the boundary of the study area.

Public Participation

Winston Churchill said, “We shape our buildings; thereafter, they shape us.” His comment also applies to community and land use planning. The way we design and build our civic spaces profoundly affects the health, productivity, and quality of life of every resident. Whose perspectives then, could be more important in a community planning process than those of the people who live in that community?  

Public participation in the planning process is important for the following reasons:

- **It Enhances the Quality of Planning.** Planning professionals, with their training and experience, are invaluable to the planning process. They cannot, however, be expected to foresee and understand every variable that may affect a project’s outcome. On the other hand, residents may lack an understanding of the principles and processes of planning, but do bring valuable information and perspectives to the table. In the long run, programs and projects that derive from an informed public, guided by professionals, are likely to be more creative and locally appropriate than those where the public is excluded from the planning process.

- **To Avoid Contention Between Interested Parties.** At planning commission and municipal government meetings, disputes over planning issues generally result when groups or individuals approach a project with a narrow perspective considering only questions of density, use, and personal agendas. A proactive planning process, which includes a well-designed public involvement component, encourages individuals to consider the big picture question of whether or not a proposed plan will enhance or damage the quality of life in the neighborhood and region in which it is built. It allows the community to make decisions based on shared goals and values. Furthermore, such a process allows residents to understand exactly what they are getting, assuring better public approval at build-out.

- **To Ensure Swift And Efficient Project Implementation.** Public opposition can result in the expensive slowing or stopping of good projects. Projects that develop strong public buy-in through participation are less likely to experience such impediments and their associated costs.

- **To Ensure That Good Plans Remain Intact Over Time.** Municipal governments, planning commissions, city managers, and planners come and go. Therefore, even the best of plans are at risk of being dismantled over time. By involving
residents in the planning process, a planning team can ensure that plans will have a long-lasting and stable constituency.

✔ To Foster A Sense Of Community And Trust In Government. To promote active public participation in this project, the following methods of achieving participation were utilized.

- A steering committee was developed to guide the Consultant in the preparation of this plan and to serve as a ‘sounding board’ to test the Consultant’s recommendations before they were finalized and adopted. Steering committee meetings were held on a monthly basis during the course of this study.
- Two public meetings were held during the course of the study. The first meeting was held to introduce the project, establish goals for the project, and to obtain input from members of the community. The second meeting was held to present and receive input on the draft of the study’s recommendations.
- The third method of obtaining public input for this study included preparing and distributing a citizen’s survey to gauge the opinions of those who may not participate in the project otherwise.

A description of each of the public participation opportunities, and their results appears chronologically in this document.

Review of Existing Documents

When preparing a plan for improvements to a community, it is important to understand whether the endeavor is consistent with local, regional, and state planning efforts. Therefore, as part of the planning process for the Center Township Safe Routes to School study, the Consultant reviewed existing local, regional, and state planning efforts. These included:

✔ Pennsylvania Statewide Bicycle and Pedestrian Plan, 1996
✔ Pennsylvania’s Recreation Plan 2004 – 2008
✔ Beaver County Comprehensive Recreation and Parks Plan, 2003
✔ Beaver County Greenway and Trails Plan - Draft, March 2006
✔ Center Township Comprehensive Plan, 1993
✔ Center Township Land Development and Subdivision Ordinance
✔ Pennsylvania Second Class Township Code

In addition, the Consultant reviewed the current building plans for the Center Area School District’s Primary Education Center, the Beaver Valley Intermediate Unit, and the Community College of Beaver County’s Campus Master Plan; the Consultant interviewed the Center Township Planning and Development Coordinator; and reviewed the Center Township Zoning and Subdivision Ordinances. Center Township does not have a Recreation, Park and Open Space Plan.

Pennsylvania Statewide Bicycle and Pedestrian Plan, 1996

The Pennsylvania Statewide Bicycle and Pedestrian Plan established five goals for improving Bicycling and Pedestrian transportation modes in Pennsylvania. These goals are:

1. Modify the existing transportation infrastructure to encourage bicycling and walking in targeted rural, suburban and urban areas of the Commonwealth.

2. Plan, design construct and maintain new and improved transportation facilities to accommodate and encourage appropriate use by bicyclists and pedestrians.
3. Provide technical assistance, training and leadership to support local jurisdiction in improving conditions for bicycling and walking.

4. Implement education and enforcement programs to reduce crashes involving bicyclists and pedestrians by at least ten percent over the next twenty years and to provide a better sense of safety and security for bicyclists and pedestrians.

5. Promote acceptance and welcome bicyclists and pedestrians as users of the transportation system.

Furthermore, the Plan provides general guidance for communities in improving the opportunity for pedestrian and bicycling depending on whether a municipality’s character is rural, suburban, or urban. For suburban Counties, Beaver County’s classification, the plan notes that development typically focuses on the automobile and is sprawl oriented. This has created difficulty for pedestrian and bicycling activities. Therefore, the plan recommends that municipalities develop a plan to provide bicycling and walking connections between residential and other land uses.

Center Township’s goal to provide pedestrian and bicycling connections between key Township destinations is consistent with the goals of the Pennsylvania Statewide Bicycle and Pedestrian Plan.


Pennsylvania Greenways: An Action Plan for Creating Connections identifies twelve strategies for implementing greenways throughout the Commonwealth. The goals for this plan are consistent with the recommendations of the Pennsylvania Greenways Action Plan. More specifically, this plan builds upon the State’s six strategies identified in the plan for establishing greenway connections, including:

**Strategy 1, Hubs and Spokes:** Recommends establishing a statewide greenways network of “hubs” (parks, forests, game lands, conservation areas, historical, cultural and recreational sites, communities, etc.) and “spokes” (connecting corridors such as land and water trails, natural corridors, etc.) that includes greenways of statewide significance, as well as local and regional greenway networks.

**Strategy 2, Greenway Plans – Greenprints for Growth:** Promote the development of greenway plans by county and local governments as an integral part of their comprehensive planning and implementation efforts, encouraging them to link greenway concerns with programs that address sound land use, community revitalization, recreation needs, and open space protection.

**Strategy 3, Places for All People:** Increase opportunities for diverse population to enjoy greenways, across rural, suburban, and urban landscapes, including motorized and non-motorized recreational users, persons with disabilities, and all cultural and ethnic groups.

**Strategy 4, Pennsylvania Wellness:** Recommends an action strategy to undertake a greenways and healthy community initiative. Furthermore, it states this initiative should emphasize the links between greenway based physical activity and weight loss, disease prevention, mental health and longevity. Recommended target audiences include: community and health improvement partners, elder care facilities, health care facilities, schools, and local and county governments.

**Strategy 5, Alternative Transportation:** Develop a trails system that provides transportation alternatives to the automobile, and is part of a comprehensive multi-model system.

**Strategy 6, Natural Resource Protection:** Promote strategically located greenways that protect the Commonwealth’s natural resources and environmental quality.

**Pennsylvania’s Recreation Plan 2004 – 2008**

Pennsylvania’s Recreation Plan 2004 – 2008 identifies three major priorities:

1. Increase funding for natural, cultural, historic, and recreational resources;
2. Create healthy and livable communities; and
3. Build capacity at all levels through partnerships and innovation.
According to the Plan, walking for pleasure or fitness is the top outdoor leisure activity for both women and men, whites and people of color, and for people in every region of the state. When recreation activities were analyzed by income group, the survey found that walking for pleasure or fitness is the most popular activity in every income category.

As part of the public participation process, Pennsylvania residents were asked what facilities were most needed for trail, street, and road activities. The following responses were received.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Percent Responding</th>
<th>Adequate</th>
<th>Should be Improved</th>
<th>Should be Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle paths</td>
<td>69%</td>
<td>37%</td>
<td>13%</td>
<td>49%</td>
</tr>
<tr>
<td>Hiking and backpacking trails</td>
<td>66%</td>
<td>43%</td>
<td>13%</td>
<td>44%</td>
</tr>
<tr>
<td>Greenways</td>
<td>50%</td>
<td>44%</td>
<td>14%</td>
<td>42%</td>
</tr>
<tr>
<td>Walking paths</td>
<td>84%</td>
<td>47%</td>
<td>12%</td>
<td>41%</td>
</tr>
<tr>
<td>Scenic drives</td>
<td>65%</td>
<td>48%</td>
<td>13%</td>
<td>40%</td>
</tr>
<tr>
<td>Jogging and fitness trails</td>
<td>73%</td>
<td>50%</td>
<td>12%</td>
<td>38%</td>
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<tr>
<td>Mountain bike trails</td>
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<td>50%</td>
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<tr>
<td>ATV trails</td>
<td>42%</td>
<td>61%</td>
<td>9%</td>
<td>31%</td>
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<tr>
<td>Equestrian trails</td>
<td>44%</td>
<td>63%</td>
<td>9%</td>
<td>28%</td>
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<td>Four-wheel driving trails</td>
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<td>64%</td>
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<td>27%</td>
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<tr>
<td>Off-road motorcycling trails</td>
<td>41%</td>
<td>64%</td>
<td>10%</td>
<td>26%</td>
</tr>
</tbody>
</table>

The need for bicycle paths, hiking trails, walking paths, jogging and fitness trails is well documented by these results.

A priority of the Plan is to “create healthy and livable communities that will more successfully serve the recreation needs of those who live, work, and play within them.” Selected strategies to achieve this priority are to:

- Identify important natural, cultural, and historical resources that need to be acquired, conserved, or enhanced.
- Provide a trail opportunity within fifteen minutes of all citizens.
- Establish a revolving loan fund municipalities can use for critical recreation maintenance projects.
- Develop technical assistance programs to help landowners manage natural resources on their land.

This plan will help implement the Pennsylvania Recreation Plan’s goals for improving walking and biking within Center Township.

**Beaver County Comprehensive Plan: Horizons - Planning for the 21st Century**

One of the stated goals in the Beaver County’s Comprehensive Plan is to “maintain and improve the quality of life and environment for residents of Beaver County through the provision of parkland and recreational facilities.” This would be achieved by undertaking measures that promote five policy objectives:

1. Provide and maintain high quality facilities to meet the recreation needs of Beaver County residents.
2. Promote the creation of open space and preservation of natural areas in the County.
3) Promote the development of waterways and waterfront districts for recreational purposes, particularly along the Beaver and Ohio Rivers.

4) Provide for improved planning and funding of county-wide parks and recreation facilities.

5) Develop a trail system throughout Beaver County.

These policies were based directly on the responses of Beaver County residents to a county-wide survey. Eighty percent of those responding said that development of walking/biking trails as a means to enhance quality of life was a priority.

This plan sets the framework for achieving this goal in Center Township.

**Beaver County Comprehensive Recreation and Parks Plan**

In 2003, Beaver County completed a Comprehensive Recreation and Parks Plan.

This plan established the following goal that led to the development of Beaver County Greenway and Trails Plan.

“To identify, designate, protect, and develop a countywide system of greenways, trails and natural open spaces now and most crucially in the wake of new development pressures, in collaboration with local governments and private land trusts.”

Therefore, assembling a network of greenways and trails in Beaver County responds to well-documented needs and wishes of County residents and implements the goals and objectives established in prior plans.

The Center Township Safe Routes to School Feasibility Study is consistent with this goal.

**Beaver County Greenway and Trails Plan**

The Beaver County Greenway and Trails Plan identifies those greenway and trail corridors deemed to be significant on the County level. Furthermore, the plan recommends the County assist local municipalities in preparing greenway and trail plans at the local level that will connect their respective community into the county greenway system.

Establishing trail corridors in Center Township will completely provide the local connections to the County wide greenway and trail system, and therefore is consistent with the recommendations of the Beaver County Greenway and Trails Plan.

**Center Township Comprehensive Plan, 1993**

A review of the Center Township Comprehensive Plan indicates it is the Township’s goal to improve the safety of pedestrian and vehicular traffic flow within the Township. The Center Township Safe Routes to School Feasibility Study is consistent with this goal in the fact it will make recommendations to improve pedestrian flow and safety within the Township.

Furthermore, the Comprehensive Plan provides recommendations for vehicular transportation improvements. Many of these improvements, especially those involving the upgrades of road intersections, have the ability to improve pedestrian and bicycle travel within the Township.

**Center Township Land Development and Subdivision Ordinance**

The Center Township Land Development and Subdivision Ordinance addresses the provision of sidewalks in the following manners:

*Section 506 – Pedestrian Walkways*

Pedestrian walkways may be required within a subdivision or land development to provide access to community facilities, to link major developments or to provide connection between the development and adjacent recreational areas or open space. If walkways are required, they shall be located to maximize pedestrian safety and convenience and to minimize contacts with vehicular traffic, with street crossings held to a minimum.

Maintenance responsibility shall be incorporated in Home Owners’ Association documents, if such an association is proposed, and / or shall be recorded as a restriction within the deed for the property.
Section 604.12 – Sidewalks

The widths of sidewalks, where provided, shall conform to the standards specified in Appendix I. Sidewalks shall be located in line with existing sidewalks on adjacent lots, or where none exists, shall be a minimum of three feet from the edge of any curb or paving. Sidewalks shall be constructed in accordance with the Township’s Construction Standards.

Walkways which provide access to the general public across private property shall be located within an easement which has a minimum width of fifteen feet.

Appendix I, Detail R-6, Concrete Sidewalk

Requires four inch deep reinforced concrete sidewalk on a four inch crushed stone aggregate base. The minimum width for sidewalks shall be five feet. At driveways, concrete thickness shall be increased to six inches of depth.

Pennsylvania Second Class Township Code

The Pennsylvania Second Class Township Code provides provisions that address a number of concerns that may play a role in determining and establishing a safe routes to school program within Center Township. These concerns include: sidewalks, footpaths, and curbs; school crossing guards; and parks, recreation centers and forests. The following excerpts from the Code may be called upon later in this study:

Article XXIV – Sidewalks, Footpaths, and Curbs

Section 2401. Location, Lines, Grades and Width of Curbs, Sidewalks or Footpaths; Costs:

(a) The board of supervisors may by ordinance regulate the line, grade and width of curbs, sidewalks or footpaths constructed along the roads or highways in the township, shall have general supervision over them and may establish a grade or grades for curbs, sidewalks or footpaths, which grade or grades may be separate and apart from the grade or grades established for the cartway or roadway.

(b) If the highway is a State or county highway, the written consent of the Department of Transportation or the county commissioners shall first be obtained.

(c) The costs of construction of sidewalks, footpaths or curbs may be paid by one of the following methods:

(1) The board of supervisors, upon the request of any landowner whose land fronts upon a public road or highway within the township, may establish a sidewalk or curbs along one or both sides of the road or highway along the lands of the owner. When the sidewalks or curbs are established, the landowner shall pay for the construction of the sidewalks or curbs and keep them in repair.

(2) The board of supervisors may construct sidewalks or curbs along the roads or highways, upon the petition of property owners representing a majority in number of feet in front of the properties abutting on the roads or highways where the sidewalks or curbs are to be constructed. When a petition is filed with the board of supervisors, the property owner shall be given notice by the board of supervisors to construct the sidewalk or curb. If the owner fails to complete the sidewalk or curb within a period of sixty days after the receipt of the notice, the board of supervisors may construct the sidewalk or curb. When any sidewalk or curb is constructed by the board of supervisors, the expense of the construction of the sidewalk or curb shall be paid by the abutting property owners in proportion to their frontage. If the owners fail to pay the expenses of the construction of the sidewalk or curb, the board of supervisors may recover the amount by action of assumpsit or may file municipal liens therefor against the abutting properties under law for the filing and collection of municipal liens.

(3) The board of supervisors may by ordinance in absence of a petition, provide for the construction, reconstruction and repair of sidewalks and curbs within the township. When any sidewalks or curbs are constructed, reconstructed or repaired by the board of supervisors under the ordinance, the expense of the construction of the sidewalks or curbs shall be paid by the abutting property owners in proportion to their frontage, but no owner shall be liable for the cost of construction of the sidewalk or curb in an amount greater than fifteen percent of
the assessed valuation of the abutting property. Any expense above the maximum liability of abutting property owners shall be paid by the township. If abutting property owners fail to pay the expenses of the construction of the sidewalks or curbs for which they are liable, the board of supervisors may recover the amount by action of assumpsit or may file municipal liens therefor against the abutting properties under law for the filing and collection of municipal liens.

(4) When the board of supervisors establishes that any part of any road or highway is dangerous to the traveling public and the danger could be materially reduced or lessened by the construction of a sidewalk, curb or footpath, the board of supervisors may lay out and construct a sidewalk, curb or footpath along the dangerous portion of the road or highway at township expense.

(d) All assessments for costs levied under this article shall be filed with the township treasurer and collected under section 3302(a).

Article XIX – Township Police

Section 1915. School Crossing Guards.

(a) Upon request of the board of school directors of a school district located wholly or partially within the township, the board of supervisors by resolution may appoint school crossing guards to control and direct traffic at or near schools. The school crossing guards shall be in uniform and shall be authorized only in the management of traffic and pedestrians. School crossing guards serve at the pleasure of the board of supervisors, except as provided in subsection (c) and are not eligible to join any township pension fund. The board of supervisors shall determine the compensation of school crossing guards, to be paid by the township or jointly by the township and the school district in a ratio to be determined by the two boards. If the township and school district cannot determine the ratio of compensation to be paid by each board, each board shall pay one-half of the compensation of the school crossing guards.

(b) The board of supervisors may create an educational service agency under section 402.1 of the act of December 5, 1936 (2nd Sp.Sess., 1937 P.L. 2897, No. 1), known as the “Unemployment Compensation Law,” to provide school crossing guards to one or more educational institutions in conjunction with the school district. The educational service agency shall serve as the agency for management and control of the school crossing guards.

(c) The board of supervisors may approve an ordinance allowing a board of school directors to assume hiring and oversight of school crossing guards. Before the board of supervisors may approve such an ordinance, the board of directors of the school district shall approve a resolution requesting the authority to assume the hiring and oversight of school crossing guards. The ordinance shall outline how the police department will provide any necessary training and assistance of the school crossing guards while on duty. Such school crossing guards will be authorized only in the management of traffic and pedestrians in and around areas identified by the police department and the school district superintendent or his or her designees. The school crossing guards shall not come within the civil service provision of this act, nor shall they fall under the bargaining unit of the school district, nor be considered an employee as defined under section 1101-A of the act of March 10, 1949 (P.L. 30. No.14), known as the “Public School Code of 1949” or a “school employee” as defined under 24 PA.C.S. § 8102 (relating to definitions) or under any plans hereafter effective. Once the ordinance receives approval by the board of supervisors, the school district shall assume the cost of compensation, including fixing such compensation, if any, of the school crossing guards. Auxiliary policemen, appointed as prescribed by general law, may be hired by the school district to serve as school crossing guards. The board of school directors shall notify the board of supervisors of those hired to serve as school crossing guards and request the necessary training or assistance be provided as outlined by the ordinance. (1915 amended June 22, 2000, P.L.329, No. 35)

Article XXII – Parks, Recreation Centers and Forests

Section 2201. Acquisition of Lands and Buildings.-The board of supervisors may designate lands or buildings owned, leased or controlled by the township for use as parks, playgrounds, playfields, gymnasiums, swimming pools, indoor recreation centers, public parks and other recreation areas and facilities and acquire lands or buildings by lease, gift, devise, purchase or by the exercise of the right of eminent domain for recreational purposes and construct and equip facilities for recreational purposes.
Section 2202. Recreation Facilities Employees.-The board of supervisors may employ persons to maintain the recreation facilities or supervise the use of the recreation facilities.

Section 2203. Regulation of Parks and Public Amusements.

(a) The board of supervisors may by ordinance regulate the use and enjoyment by the public of any park or recreation grounds owned and operated by the township or charitable organizations for the use of the public.

(b) The board of supervisors may prescribe rules for the use by the public of parks and recreation grounds and the facilities and amusements connected therewith and post the rules at conspicuous places in the parks or recreation grounds. Any person who violates the rules commits a summary offense.

(c) The board of supervisors may by ordinance not inconsistent with State law and regulations, regulate the time of opening and closing and the conduct of places of public entertainment, amusement and recreation.

(d) The board of supervisors may by ordinance or resolution appropriate funds for recreation programs not directly sponsored by the township.

Section 2204. Creation of Recreation Boards.

(a) The board of supervisors may by ordinance create a recreation board to supervise, regulate, equip and maintain township-funded recreation programs and facilities. The recreation board has only those powers specifically delegated to it by the board of supervisors.

(b) Recreation boards, when established, shall consist of five, seven or nine persons. The members shall be appointed by the board of supervisors and shall serve for terms of five years or until their successors are appointed, except that the members first appointed shall be appointed so that the terms of not more than two members expire annually. Members shall serve without pay but may be reimbursed by the township for all expenses incurred in performing their duties. All persons appointed shall serve their full terms unless voluntarily resigned or removed by the board of supervisors for dereliction or neglect of duty. Vacancies occurring other than by expiration of term shall be for the unexpired term and shall be filled in the same manner as original appointments.

(c) The members of a recreation board shall elect a chairman and secretary and select all other necessary officers to serve for a period of one year. The recreation board may adopt rules and regulations for the conduct of all business within its jurisdiction and exercise powers and functions concerning parks and recreation facilities as may be delegated to it by the board of supervisors. The recreation board shall submit an annual report to the board of supervisors, including an analysis of the adequacy and effectiveness of community recreation areas, facilities and leadership.

Section 2205. Joint Ownership and Maintenance.-The board of supervisors may join with any one or more municipal corporations, counties or school districts to acquire, create, equip, maintain and operate any park or recreation area to serve residents of the township under the act of July 12, 1972 (P.L. 762, No. 180), referred to as the Intergovernmental Cooperation Law.

Section 2206. Expenses for Maintenance.-All expenses incurred in the operation of parks, recreation areas and facilities are payable from the general township fund or from the treasury of the municipal corporations, counties or school districts under the agreement of the corporate authorities.

Section 2207. Forest Lands.

(a) Townships may acquire, by purchase, gift or lease, and hold tracts of land covered with forest or tree growth, or suitable for the growth of trees, and administer the tracts under the direction of the Department of Conservation and Natural Resources. The tracts may be of any size suitable for the purpose and may be located inside or outside the township limits.

(b) When the board of supervisors intends to acquire any lands for forests, it shall so declare by an ordinance, setting forth
all facts and conditions relating to the proposed action.

(c) Upon the acquisition of any forests or lands suitable for forests, the board of supervisors shall notify the Department of Conservation and Natural Resources which may make rules for the government and proper administration of the lands as may be necessary. The Department of Conservation and Natural Resources shall publish the rules, declare the uses of the forest under the intent of this article and make provision for its administration, maintenance, protection and development as necessary. The rules governing the administration of the forests shall have for their main purpose the producing of a continuing township revenue by the sale of forest products.

(d) All revenue and emoluments arising from the forests shall be paid into the general township fund.

(e) Township forests may be used by the public as general outing or recreation grounds, subject to the rules of the Department of Conservation and Natural Resources governing their administration and rules adopted by the board of supervisors not inconsistent with law and the rules of the Department of Conservation and Natural Resources.

(f) When the board of supervisors decides to sell or lease any township forest, or part thereof, it shall so declare by an ordinance, setting forth all the facts and conditions relating to the proposed action. No ordinance shall be effective until it has been approved by a majority vote of the electorate at the next ensuing municipal or general election. Nothing in this subsection shall prohibit the board of supervisors, at its discretion, by resolution, from allowing the selective harvesting of forest products for the purpose of properly caring for and maintaining a township forest.

(g) The board of supervisors may, on behalf of the township, accept the title to lands which may be donated to the township for any of the purposes mentioned in this article.

Study Committee Meeting One

Study Committee Meeting One was held on February 28, 2006. The purpose of this meeting was as follows:

1. Introduce the consultant to the study committee members, their interests and their role on the committee
2. Review Project’s Scope of Work
3. Review Proposed Project Schedule
4. Review and receive input on the tasks completed to date
5. Establish the goals of this plan
6. Define the study area
7. Review and comment on draft Questionnaire, discuss method and range of distribution
8. Schedule next meeting

The study committee members were introduced and each member talked about their interest in the project, and their affiliation with the School District and /or Township. Everyone was welcomed, and thanked for agreeing to be a steering committee member.

Next, we reviewed the project scope of work, explaining that it is a three part process. The first step is identifying Where are We Now? in terms of providing safe routes to schools, the second step is to determine Where Do We Want To Be? by developing the vision for creating safe routes to schools over the next 2, 5 and 10 years, and the third step is defining How Do We Get There? by developing specific implementation strategies to guide the implementation of the plan’s recommendations.

The project schedule was distributed and reviewed. We noted the schedule was based on completing the plan by September, so the results could be incorporated into a grant application to fund the first phase of improvements.

We reviewed a summary, as presented herein, of existing State, County, and Local planning efforts that relate to the Center Township Safe Routes to Schools Study. They include: Center Township Comprehensive Plan – 1993; Beaver County

In addition, several documents directly applicable to Public School Transportation issues were summarized. They included: the Pennsylvania Public School Code of 1949; and the Pennsylvania Code Chapter 447 Hazardous Walking Routes.

Next, committee members were asked what to identify their goals for this plan. The responses were as follows:

a. Identify safe, viable routes for children to walk and bike to school
b. Provide connectivity to community resources from adjacent neighborhoods
c. Address safety – lighting, street crossings, etc.
d. Provide paved trails between resources
e. Establish baseline of data so efforts can be quantified in the future
f. Encourage and promote healthy lifestyles
g. Establish and strengthen partnerships between the Township, the School District, Community College of Beaver County, Beaver Vocational Technical School, Beaver Valley Intermediate Unit
h. Increase the Quality of Life in Center Township
i. Promote and market the livability of Center Township
j. Provide paved trails that are accessible to all residents

Attendees asked if there are other issues the consultant needs to be aware of or address. Responses included:

a. What incentives will be available to promote trail use?
b. Who will provide funding and labor to maintain the trails?
c. District has two years of BMI data on district students, compare it to national standards.
d. Police Department has an ATV, could be used for trail patrols.
e. Plan needs to address accessibility.

The Township Police Chief and the School District’s former Transportation Director identified by name the various neighborhoods surrounding the complex of schools in the township, and the existing routes children use to walk to the schools.

We reviewed the study area boundaries defined in the Township’s grant application, noting the area was arbitrarily chosen. Attendees were asked to suggest what the actual boundaries should be for this study. The group recommended the boundaries be as follows:

- Brodhead Road to the west
- Old Brodhead Road to the north
- Chapel Road to the east, but include neighborhoods on east side of Chapel Road where possible
- East Shaffer Road to the South

A sample Safe Routes to Schools Questionnaire was provided, and we asked attendees to review and comment on it. We
noted the purpose of the questionnaire is to gauge the Township residents’ opinions on providing trails in the Township. The following comments were offered on the questionnaire:

a. Questionnaire should promote the connection of community facilities within the Township, not just the schools.

b. Address for Todd Lane Elementary School is incorrect. It is 113 Todd Lane, Monaca, PA 15061.

c. Don’t rely on children to return questionnaires, ask respondents to mail survey to school.

d. Add the following question after number two, Do you feel the providing safe walking and bicycling routes in the Township will increase the quality of life in Center Township?

e. Question number four, add college as a choice.

f. Eliminate question eight, Do you feel your child’s school provides a safe place to store bikes, as the schools do not have anywhere to store bikes at this time.

g. Add Drive self to school as a choice for question number 10.

h. For questions ten and eleven, ask respondents to check all that apply.

i. Eliminate question number twelve that asks about carpooling.

j. Eliminate questions thirteen and fourteen.

Next, ways of distributing the questionnaire were discussed with the committee. Possible distribution methods included:

a. Random sample of water bill addresses.

b. Door to door in the study area.

c. As part of the District’s “On Center” Newsletter that goes out to every home in Center and Potter Townships.

d. Through the schools.

Copies of the U.S. Department of Transportation’s Walkability and Bikeability Checklists were distributed to meeting attendees. It was noted that a brief review indicates Center Township is not very walker or cyclist friendly.
As noted earlier, the way we design and build our environment profoundly affects the health, productivity, and quality of life of our residents. To properly plan for trail development we must understand who will use the trails, what their requirements are to ensure a safe and enjoyable experience on the trails, and how we want them to respond on the trails.

In order to help us better understand the demand and potential use for trails in Center Township, this Chapter will:

- Define a reasonable project service area
- Describe the community character
- Review project area population and demographic patterns
- Develop profiles of potential trail users and project future use levels

**PROJECT SERVICE AREA**

As discussed in Chapter One, the project study area was defined as being generally bounded by the following roads, including residential neighborhoods along both sides of the roads that form the boundary of the study area:

- North: Old Brodhead Road
- East: Chapel Road
- West: Brodhead Road
- South: Shaffer Road

**Community Character**

Center Township is a growing suburban community, and is the third largest municipality in Beaver County. From 1970 to 1990 the Township’s population was stable with approximately 10,750 residents. With the reduction in interest rates in the early 2000’s, Center Township saw a surge in residential development, and correspondingly the Township’s population grew to approximately 11,500 residents.¹⁴
### Top Ten Beaver County Municipalities by Population

<table>
<thead>
<tr>
<th>Municipality</th>
<th>2000</th>
<th>1990</th>
<th>Percent Change</th>
<th>Rank by Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopewell Township</td>
<td>13,254</td>
<td>13,274</td>
<td>-0.15%</td>
<td>1</td>
</tr>
<tr>
<td>Aliquippa City</td>
<td>11,734</td>
<td>13,374</td>
<td>-12.26%</td>
<td>2</td>
</tr>
<tr>
<td>Center Township</td>
<td>11,492</td>
<td>10,740</td>
<td>7.00%</td>
<td>3</td>
</tr>
<tr>
<td>Beaver Falls City</td>
<td>9,920</td>
<td>10,687</td>
<td>-7.18%</td>
<td>4</td>
</tr>
<tr>
<td>Economy Borough</td>
<td>9,363</td>
<td>9,519</td>
<td>-1.64%</td>
<td>5</td>
</tr>
<tr>
<td>Brighton Township</td>
<td>8,024</td>
<td>7,489</td>
<td>7.14%</td>
<td>6</td>
</tr>
<tr>
<td>Ambridge Borough</td>
<td>7,769</td>
<td>8,133</td>
<td>-4.48%</td>
<td>7</td>
</tr>
<tr>
<td>New Sewickley Township</td>
<td>7,076</td>
<td>6,861</td>
<td>3.13%</td>
<td>8</td>
</tr>
<tr>
<td>Chippewa Township</td>
<td>7,021</td>
<td>6,988</td>
<td>0.47%</td>
<td>9</td>
</tr>
<tr>
<td>New Brighton Borough</td>
<td>6,641</td>
<td>6,854</td>
<td>-3.11%</td>
<td>10</td>
</tr>
</tbody>
</table>

The Township has also experienced growth in the retail services and restaurant services categories. Recent additions include: Lowes, Shop-n-Save, PetsMart, Cinemark, Pier One, Best Buy, Target, Marshalls, Olive Garden, and New Century Chinese Buffet. Several out parcels within the Township Market Place development are also under development, and the Township has been approached by Dicks Sporting Goods to discuss possible plans to expand the Beaver Valley Mall, and to become the Mall’s fifth anchor tenant.

The Township’s growth can be attributed to its proximity to State Route 60, State Route 18, and the Pittsburgh International Airport. Population and development forecasts project the Township will continue to experience growth for the foreseeable future.

As a growing suburban community, Center Township is experiencing the results of urban sprawl, and should proactively take steps to encourage smart growth, and livable communities. This feasibility study is one small step in reversing the trend of sprawl within the Township. The Township Supervisors should consider investing in the preparation of an update to the Township’s Comprehensive Plan, to establish a vision for the community and develop strategies to achieve that vision.

### Demographics

Between 1990 and 2000, the total population of Center Township has increased 6.98% from 10,742 to 11,492. Over the same period, the number of homes in the Township increased from 3,997 to 4,438 resulting in a decrease in household size from 2.69 people to 2.59.

In terms of age, the Township’s population of residents under 18 has increased by 4.74%, from 1990 to 2000, with respect to the total population. In addition, the number of individuals over age 65, with respect to the total population, has increased by 45.56% over the same period.
Center Township - 1990 to 2000 Population Changes

<table>
<thead>
<tr>
<th>Age Segment</th>
<th>1990</th>
<th>2000</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>Percentage</td>
<td>Population</td>
</tr>
<tr>
<td>Under 18</td>
<td>2,489</td>
<td>23.17%</td>
<td>2,607</td>
</tr>
<tr>
<td>18-65</td>
<td>7,081</td>
<td>65.92%</td>
<td>7,179</td>
</tr>
<tr>
<td>Over 65</td>
<td>1,172</td>
<td>10.91%</td>
<td>1,706</td>
</tr>
<tr>
<td>Total</td>
<td>10,742</td>
<td>11,492</td>
<td>6.98%</td>
</tr>
</tbody>
</table>

During the same time period, Beaver County saw its population decline by 2.52%, its population of residents under 18 decrease by 5.44%, and its population of residents over 65 increase by 6.04%.  

Beaver County - 1990 to 2000 Population Changes

<table>
<thead>
<tr>
<th>Age Segment</th>
<th>1990</th>
<th>2000</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>Percentage</td>
<td>Population</td>
</tr>
<tr>
<td>Under 18</td>
<td>43,422</td>
<td>23.33%</td>
<td>41,062</td>
</tr>
<tr>
<td>18-65</td>
<td>111,151</td>
<td>59.73%</td>
<td>106,926</td>
</tr>
<tr>
<td>Over 65</td>
<td>31,520</td>
<td>16.94%</td>
<td>33,424</td>
</tr>
<tr>
<td>Total</td>
<td>186,093</td>
<td>181,412</td>
<td>-2.52%</td>
</tr>
</tbody>
</table>

From 1990 to 2000, the Commonwealth's total population increased 3.36%, the population of residents under 18 increased 4.56%, and the population of residents over 65 increased 4.92%.  

Pennsylvania - 1990 to 2000 Population Changes

<table>
<thead>
<tr>
<th>Age Segment</th>
<th>1990</th>
<th>2000</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>Percentage</td>
<td>Population</td>
</tr>
<tr>
<td>Under 18</td>
<td>2,794,810</td>
<td>23.52%</td>
<td>2,922,221</td>
</tr>
<tr>
<td>18-65</td>
<td>7,257,727</td>
<td>61.08%</td>
<td>7,439,668</td>
</tr>
<tr>
<td>Over 65</td>
<td>1,829,106</td>
<td>15.39%</td>
<td>1,919,165</td>
</tr>
<tr>
<td>Total</td>
<td>11,881,643</td>
<td>12,281,054</td>
<td>3.36%</td>
</tr>
</tbody>
</table>
Actual enrollment data furnished by the Center Area School District for the 2000 – 2001 to 2005 – 2006 school years shows the following trends.

District wide, over the five year period, enrollment in the District has declined by 1.21%, indicating a stable student population.

### Center Area School District

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrollment</th>
<th>% Change</th>
<th>5 Year Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1,961</td>
<td>98.79%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>1,985</td>
<td>99.20%</td>
<td>98.59%</td>
</tr>
<tr>
<td>2003</td>
<td>2,001</td>
<td>99.16%</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>2,018</td>
<td>101.46%</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>1,989</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A review of annual enrollment records at Todd Lane Elementary School, for the same five year period, shows a decrease in the elementary student population of 6.5%.

### Todd Lane Elementary School

<table>
<thead>
<tr>
<th>Year</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Subtotal</th>
<th>% Change</th>
<th>5 Year Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>117</td>
<td>132</td>
<td>145</td>
<td>135</td>
<td>130</td>
<td>147</td>
<td>806</td>
<td>99.75%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>124</td>
<td>140</td>
<td>131</td>
<td>124</td>
<td>144</td>
<td>145</td>
<td>808</td>
<td>94.50%</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>131</td>
<td>133</td>
<td>120</td>
<td>148</td>
<td>146</td>
<td>177</td>
<td>855</td>
<td>99.53%</td>
<td>93.50%</td>
</tr>
<tr>
<td>2002</td>
<td>124</td>
<td>122</td>
<td>150</td>
<td>133</td>
<td>175</td>
<td>155</td>
<td>859</td>
<td>99.65%</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>108</td>
<td>138</td>
<td>132</td>
<td>167</td>
<td>152</td>
<td>165</td>
<td>862</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enrollment records for the Center Area Middle School, from the 2000 - 2001 to 2005 - 2006 school year, shows a decline in the Middle School enrollment of 3.29%.

### Center Area Middle School

<table>
<thead>
<tr>
<th>Year</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Subtotal</th>
<th>% Change</th>
<th>5 Year Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>147</td>
<td>173</td>
<td>150</td>
<td>470</td>
<td>90.91%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>179</td>
<td>153</td>
<td>185</td>
<td>517</td>
<td>104.66%</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>151</td>
<td>182</td>
<td>161</td>
<td>494</td>
<td>99.00%</td>
<td>96.71%</td>
</tr>
<tr>
<td>2002</td>
<td>171</td>
<td>162</td>
<td>166</td>
<td>499</td>
<td>102.67%</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>160</td>
<td>165</td>
<td>161</td>
<td>486</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finally, a review of the Center Area High School enrollment records shows an increase in enrollment of the 2001 to 2005 time frame of 6.86%.

### Center Area High School

<table>
<thead>
<tr>
<th>Grade</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Subtotal</th>
<th>% Change</th>
<th>5 Year Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>193</td>
<td>163</td>
<td>174</td>
<td>155</td>
<td>685</td>
<td>103.79%</td>
<td>106.86%</td>
</tr>
<tr>
<td>2004</td>
<td>168</td>
<td>173</td>
<td>156</td>
<td>163</td>
<td>660</td>
<td>101.23%</td>
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<tr>
<td>2003</td>
<td>170</td>
<td>157</td>
<td>166</td>
<td>159</td>
<td>652</td>
<td>98.79%</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>156</td>
<td>165</td>
<td>164</td>
<td>175</td>
<td>660</td>
<td>102.96%</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>161</td>
<td>164</td>
<td>178</td>
<td>138</td>
<td>641</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Historic Trends

Comparing the enrollment trend of the past five years, with the historic trends of the prior ten years, 1990 – 1991 to 2000 – 2001 school years shows that the District has a vary stable population, which varies approximately 2% from an average enrollment of 1920 students.

### Center Area School District Historic Population Trends

#### 1990 - 1991 to 2000 - 2001 School Year Annual Comparison

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
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<tbody>
<tr>
<td>K</td>
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<td>166</td>
<td>140</td>
<td>142</td>
<td>175</td>
<td>161</td>
<td>136</td>
</tr>
</tbody>
</table>

#### Enrollment Projections

Based on the Center Area School District projections, the District may see a decline in student population of approximately 9.5% over the next seven years.
### Center Area School District Projected Population Trends

#### 2005 - 2006 to 2011 - 2012 School Year Annual Comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>K</td>
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<td>117</td>
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</tr>
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<td>181</td>
<td>144</td>
<td>154</td>
<td>133</td>
<td>155</td>
<td>147</td>
</tr>
<tr>
<td>9</td>
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<td>167</td>
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<td>150</td>
<td>161</td>
<td>139</td>
<td>162</td>
</tr>
<tr>
<td>10</td>
<td>176</td>
<td>184</td>
<td>170</td>
<td>192</td>
<td>152</td>
<td>163</td>
<td>141</td>
</tr>
<tr>
<td>11</td>
<td>168</td>
<td>174</td>
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<td>150</td>
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<td>12</td>
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<td>163</td>
<td>169</td>
<td>177</td>
<td>163</td>
<td>184</td>
<td>146</td>
</tr>
<tr>
<td>Totals</td>
<td>1953</td>
<td>1929</td>
<td>1911</td>
<td>1877</td>
<td>1840</td>
<td>1810</td>
<td>1767</td>
</tr>
</tbody>
</table>

|          | 98.8%   | 99.1%   | 98.2%   | 98.0%   | 98.4%   | 97.6%   |

### Student Drivers

Typically about two hundred students drive to school on any given day throughout the school year. The District’s policy on allowing students to drive to school is as follows:

- must be a member of either the Junior or Senior classes
- must have valid license, insurance, and registration

Given the approximately six hundred and seventy students in the high school, this means that approximately 30% or about one in three high school students drive to school. When estimating the potential users for Safe Routes to Schools, these students must not be factored into the equation as it is unlikely they would choose to walk to school, instead of driving. Also, some of the students who drive to school do it out of necessity to allow them to meet employment commitments they may have.

### Study Area Population Estimate

To accurately project the number of potential trail users we must first identify approximately how many people reside within the study’s project area. The total number of parcels within the study area is 2,177. Approximately ten percent, two hundred and seventy-seven, of those parcels are either undeveloped, or they contain educational, institutional or commercial land uses. Also, it is important to note that the majority of the study area is single family residential in nature. Therefore, there are approximately 1,960 single family residential homes in the study area. As noted earlier, the U.S. Census Bureau indicates there was an average of 2.59 residents per household in 2000. Therefore, the study area contains approximately 5,076 residents, or approximately 44% of the Township’s total population.

The Township is 15.4 square miles in size. With a 2000 U.S. Census population of 11,492, the average per square miles population density is 746 residents. However, this is deceiving. The project study area is 3.2 square miles in size. Therefore, the population density in the study area is approximately 1,550 persons per square mile. The remaining portion of the Township, outside of the study area, is 12.11 square miles in size, and contains an approximate population of 6,416 residents.
The density of population per square mile outside of the study area is approximately 530 residents per square mile.

It is important to recognize that the study area (those areas and neighborhoods surrounding the schools) has a density that is three times greater than the remaining areas of the Township. This shows there is a significant density of population in the study area that can benefit from trail improvements.

**Center Township Development Trends**

Center Township continues to grow as it did in the last decade. The 2005 Annual Report of the Center Township Planning Commission indicates the following:

**Single Family Residential Development**

✓ From 1990 to 1999 the average number of building permits issued per year for single family dwellings was forty-six permits.

✓ From 2000 to 2005 the average number of building permits issued per year for single family dwellings was seventy-two permits, a fifty-six percent increase.

**Multi-Family Residential Development**

✓ Construction of multi-family residential units has been erratic over the same time period. The average number of units constructed per year over the last six years, 2000 – 2005, was nineteen units.

**Commercial Development**

✓ From 1990 to 1999 the average number of building permits issued per year for commercial development was seventeen, with a low of nine permits being issued in 1994 and a high of thirty permits being issued in 1992.

✓ From 2000 to 2005 the average number of building permits issued per year for commercial development was eighteen permits, with a low of nine permits being issued in 2002 and 2003, and a high of twenty-four permits being issued in 2001.

The Township expects these trends to continue for at least the next five years.

**Trail User Profiles**

In trail planning, trail users are typically defined as follows:

- Recreational Walkers
- Fitness Walkers
- Recreational Joggers
- Fitness Joggers
- Recreational Inline Skaters
- Fitness Inline Skaters
- Family Bicyclists
- Recreational Bicyclists
- Fitness Bicyclists
- Transportation Bicyclists

Each of user has different patterns, recreation setting preferences, and motivation / activity style elements.
<table>
<thead>
<tr>
<th>Type</th>
<th>Preference Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recreational and Fitness</strong></td>
<td><strong>Trail Use Pattern</strong></td>
</tr>
<tr>
<td>Walker and Joggers</td>
<td>Will use the same trails on a daily basis or several times/week basis if they are convenient to place of residence and easy access (most live within 3 miles of the trail they are using)</td>
</tr>
<tr>
<td><strong>Range:</strong></td>
<td></td>
</tr>
<tr>
<td>Walker - strolling:</td>
<td>Will use the same trails on a daily basis or several times/week basis if they are convenient to place of residence and easy access (most live within 3 miles of the trail they are using)</td>
</tr>
<tr>
<td>2 - 3 miles</td>
<td>Recreational users want trails that provide social interaction, scenic beauty, or both</td>
</tr>
<tr>
<td>Walker - casual:</td>
<td>Will use sidewalks along local streets to get to a trail system in urban and suburban settings</td>
</tr>
<tr>
<td>3 - 6 miles</td>
<td>Will use trails year-round basis, although spring, summer and fall are most popular</td>
</tr>
<tr>
<td>Walker - fitness:</td>
<td>Recreation walkers find sense of place, natural setting, scenery, and being away from traffic as being important (less so with fitness walkers)</td>
</tr>
<tr>
<td>6 - 9 miles</td>
<td>Looped configurations are preferred in all settings, with 2-4 miles suitable for beginners and 5-9 miles for fitness</td>
</tr>
<tr>
<td>Jogger - fitness:</td>
<td>Strong desire for safety and security with the lack of this being a major reason that a trail would not be used</td>
</tr>
<tr>
<td>3 - 15 miles</td>
<td><strong>Recreation Setting Preferences</strong></td>
</tr>
<tr>
<td></td>
<td>Wide ranging for recreational users, with a desire for social interaction being important to some and solitude to others</td>
</tr>
<tr>
<td><strong>Average Speed:</strong></td>
<td>Exercise for health benefits is a prime motivator for fitness walks and joggers, although the health aspects of walking are of growing importance to recreational walkers as well</td>
</tr>
<tr>
<td>Walker - strolling:</td>
<td>Walkers and joggers of all types will go out with friends, family or alone</td>
</tr>
<tr>
<td>1 - 2 mph</td>
<td></td>
</tr>
<tr>
<td>Walker - casual:</td>
<td></td>
</tr>
<tr>
<td>2 - 3 mph</td>
<td></td>
</tr>
<tr>
<td>Walker - fitness:</td>
<td></td>
</tr>
<tr>
<td>3 - 4 mph</td>
<td></td>
</tr>
<tr>
<td>Jogger - fitness:</td>
<td></td>
</tr>
<tr>
<td>6 - 7 mph</td>
<td></td>
</tr>
<tr>
<td>Recreational Inline Skater</td>
<td>Trail Use Pattern</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Range:</strong></td>
<td>Seeks out trails nearby for daily yes, but will travel to a specific trail on weekends</td>
</tr>
<tr>
<td>Inline Skater - casual: 6 - 10 miles</td>
<td>Prefer loop system, with 10 to 15 miles being minimum distance needed for recreational level skaters (will use out and back if no other choice)</td>
</tr>
<tr>
<td>Inline Skater - recreational: 10 - 15 miles</td>
<td></td>
</tr>
<tr>
<td><strong>Average Speed:</strong></td>
<td>Seeks trails that are not heavily used to give them more maneuvering space</td>
</tr>
<tr>
<td>Inline Skater - casual: 5 - 10 mph</td>
<td>Technically difficult trails with sharp turns too many steep hills or poor stopping conditions are not desired</td>
</tr>
<tr>
<td>Inline Skater - recreational: 10 - 12 mph</td>
<td>Trails designed similar to bike trails tend to meet the needs of skaters, especially with they are 10 or more feet wide</td>
</tr>
<tr>
<td></td>
<td>Routine sweeping of the trail is important</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recreational Setting Preferences</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Motivations / Activity Style Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smooth, wide trails are highly valued, with rough trails being especially troublesome for beginners</td>
</tr>
<tr>
<td>Primarily motivated by getting exercise, enjoying skating, being outdoors and socializing</td>
</tr>
<tr>
<td>Will skate alone, with friends and occasionally family</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fitness Inline Skater</th>
<th>Trail Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range:</strong></td>
<td>Use routes that are challenging with enough distance to get in a good workout (10-25 miles)</td>
</tr>
<tr>
<td>Inline Skater - fitness: 10 - 25 miles</td>
<td>May go out daily or several times/week and will routinely use the same trails close to home</td>
</tr>
<tr>
<td>Inline Skater - elite: 20 - 30 miles</td>
<td>Prefer loop system</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recreation Setting Preferences</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Motivations / Activity Style Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smooth, wide trails are highly valued, with rough trails being especially troublesome for beginners</td>
</tr>
<tr>
<td>Primarily motivated by getting exercise and enjoying skating</td>
</tr>
<tr>
<td>Will skate alone, in couples or small groups</td>
</tr>
<tr>
<td>Commuting Inline Skater</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Use skating as a form of transportation</td>
</tr>
<tr>
<td>Use trails where available, but will also use streets and roads as well to get from point to point</td>
</tr>
<tr>
<td>Other preferences are similar to bicycle commuters</td>
</tr>
</tbody>
</table>

动机/活动风格元素

- Need traffic enforcement, security, skate-friendly routes to and from work sites
- Need accommodations at work, such as lockers, changing areas, showers, etc.

<table>
<thead>
<tr>
<th>Family Bicyclist</th>
<th>Trail Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefers bike trails and quite streets (to avoid heavy traffic) with preference for trails if conveniently located.</td>
<td></td>
</tr>
<tr>
<td>Most activity happens close to home, but will also use trails extensively while on vacation</td>
<td></td>
</tr>
</tbody>
</table>

娱乐设置偏好

- Controlled, traffic free access to trails is most important consideration
- Quality of the riding experience is of primary importance, with length being secondary (20 miles maximum)
- Connections to parks and playgrounds important to keeping children engaged.

动机/活动风格元素

- Ride in family groups, often small children
- Need good information for planning trips and access to support facilities and preferable restrooms
- Scenic areas preferred, although challenging terrain is not.
<table>
<thead>
<tr>
<th>Recreational Bicyclist</th>
<th>Trail Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range:</strong></td>
<td></td>
</tr>
<tr>
<td>Bicyclist - casual: 5 - 10 miles</td>
<td>Seeks out and travels to trails and bicycle friendly areas away from home, either as a day or overnight trip.</td>
</tr>
<tr>
<td>Bicyclist - recreational: 10 - 20 miles</td>
<td>Prefers trails, but will also use roads that are safe, convenient, and not too busy</td>
</tr>
<tr>
<td><strong>Average Speed:</strong></td>
<td></td>
</tr>
<tr>
<td>Bicyclist - casual: 6 - 10 mph</td>
<td>Recreation Setting Preferences</td>
</tr>
<tr>
<td>Bicyclist - recreational: 10 - 15 mph</td>
<td>Trails shorter than 10 miles are not very viable for repeat use, with 20 miles being the desired minimum</td>
</tr>
<tr>
<td></td>
<td>Looped configurations of varying lengths are preferred over out and back systems</td>
</tr>
<tr>
<td></td>
<td>Sense of place and an interesting experience are important, with riders seeking places with scenic quality and interesting natural or built forms (if in urban setting)</td>
</tr>
<tr>
<td><strong>Motivations / Activity Style Elements</strong></td>
<td>Large percentage seek escape from motorized traffic and value experiencing nature</td>
</tr>
<tr>
<td></td>
<td>Regard bicycling as an important recreational interest and willing to make significant investments in equipment</td>
</tr>
<tr>
<td></td>
<td>Often use amenities such as parks and rest areas along the trail for relaxation</td>
</tr>
<tr>
<td></td>
<td>As a group, interested in varying levels of trail difficulty</td>
</tr>
<tr>
<td></td>
<td>Destinations at reasonable distances are important to maintaining interest in a given trail</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fitness Bicyclist</th>
<th>Trail Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range:</strong></td>
<td></td>
</tr>
<tr>
<td>Bicyclist - fitness: 20 - 40 miles</td>
<td>Will use a combination of roads and trails that are long and/or challenging enough for a good workout</td>
</tr>
<tr>
<td>Bicyclist - elite: 40 - 60 miles</td>
<td>Prefer trails if they are long enough (20 or more miles) and allow for faster speeds with minimal user conflicts</td>
</tr>
<tr>
<td><strong>Average Speed:</strong></td>
<td></td>
</tr>
<tr>
<td>Bicyclist - fitness: 15 - 20 mph</td>
<td>Recreation Setting Preferences</td>
</tr>
<tr>
<td>Bicyclist - elite: 20 - 25 mph</td>
<td>Trails need to offer varying difficulty and lengths, with interconnected loops highly preferred</td>
</tr>
<tr>
<td></td>
<td>Not primarily motivated by experiencing natural setting, but will select this type of trail if other requirements are met</td>
</tr>
<tr>
<td><strong>Motivations / Activity Style Elements</strong></td>
<td>Uses bicycle as primary form of exercise to maintain and improve health</td>
</tr>
<tr>
<td></td>
<td>Primarily rides along or in small groups and often rides multiple times per week</td>
</tr>
<tr>
<td></td>
<td>Frequently extends the season by riding earlier in spring and later in the fall than recreational riders</td>
</tr>
</tbody>
</table>
**Transportation Bicyclist**

<table>
<thead>
<tr>
<th>Trail Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not dependent on trails, but will use them if convenient, safe and direct</td>
</tr>
</tbody>
</table>

**Motivations / Activity Style Elements**

- Bicycle is used as a form of transportation and motivated by fitness, environmental values, and economy.
- Lack of a safe “system” of roads (with bike lanes or routes) and trails is a major barrier to this group.
- Trail design is critical, with ability to go fast with good sight distances and directness being most important.

**Age of Target Audience**

In addition to the above requirements, we must recognize that a primary purpose of the trails being considered in this study is to provide safe routes to schools for children. And, we must understand that children see the world differently.

- ✓ Children don’t think about getting hurt until about age nine.
- ✓ Children are impulsive and impatient.
- ✓ Children focus on one thing at a time.
- ✓ Children confuse the worlds of reality and fantasy.
- ✓ Children have a difficult time figuring out what is important.
- ✓ Children have trouble judging traffic speed, gaps in traffic, or whether a car is coming, going, or standing still.
- ✓ Children have limited ability to detect traffic with their side vision.
- ✓ Children have difficulty in figuring out the meaning and direction of sound.
- ✓ Children focus on sounds that interest them, rather than sounds that are important to them.
- ✓ Children have trouble understanding that a car can not stop as quickly as they can.
- ✓ Children lack the knowledge to understand traffic rules and danger.
- ✓ Children are smaller; they have trouble seeing traffic, and being seen by drivers.
- ✓ Children think that if they can see a car, they can be seen by a car, even if behind an object.

**Projected Future Use Levels**

Projecting future trail use levels requires an estimate of the population within the market area of the trail system. This includes:

- ✓ Current local trail users who welcome an additional recreational opportunity
- ✓ New local trail users who will start using trails as momentum builds around the development of a trail system
- ✓ Non-local trail users who will travel often from outside the local service area of a trail to take advantage of a unique recreation opportunity
For purposes of this study, the current and new local trail users, are those who reside within the study area.

It is impossible to generate an exact total of these three user groups to determine future use of a trail system within the Township. However, an examination of the core users, those living within the study area, aids in estimating potential demand for new trails.

To determine the core users residing in the study area we must first estimate the number of residents who are located within the study area. The number of residents living within the study area is approximately 5,076. The non-local trail users consist of those who live outside the study area, but within Center Township, 6,416 residents.

Of the 5,076 residents in the study area, we estimate that 1,148 residents are less than 18 years of age. Those less than eighteen years of age are generally more likely to use the trail system than those over the age of eighteen.

To project the potential number of future trail users we used the results of the U.S. Department of Transportation, Bureau of Statistics 2003 Omnibus Survey results. One thousand U.S. households are randomly selected to participate in this survey on a monthly basis. The study collects information on all aspects of transportation, including trail use.

To project a rough estimate of annual trail use, the 2003 Omnibus Survey results were applied to the population of the study area. While the resulting figures are not a specific projection of use, they do begin to quantify the potential trail user base.

**Biking**

Using the Omnibus Survey results indicating the 2000 Census based population estimate of 5,076, residents may generate an average of 89 trips per day, 2,719 trips per month, and 32,628 annually. If the Township’s current annual growth rate of twelve percent continues through 2010, those numbers may rise to 100 trips per day, 3,045 trips per month, and 36,540 per year.

By utilizing the 2003 Omnibus Survey results and the study area population estimate, we can further breakdown the projections to estimate the number of trips that may be taken on each potential type of bicycle facility. It is projected that the greatest number of bicycle trips will be made on paved roads, the next highest number of trips may be taken on multi-use paths.
The 2003 Omnibus Survey results indicate the average bicyclist trip, for recreational purposes, is 5.6 miles long, while the non-recreation related trips average 2.2 miles in length.
Walking, Jogging and Running

An even greater number of trips may be taken by pedestrians. According to the Omnibus Survey results of the 2000 Census based study area population estimate of 5,076, residents may generate an average of 1,460 trips per day, 44,408 trips per month, and 532,896 annually. If the Township’s current annual growth rate of twelve percent continues through 2010, those numbers may rise to 1,735 trips per day, 52,782 trips per month, and 633,384 per year.

By utilizing the 2003 Omnibus Survey results and the study area population estimate, we can further breakdown the results to project the number of trips that may be taken on each potential type of pedestrian facility. The greatest number of pedestrian trips will be made on sidewalks, the next highest number of trips may be taken on paved roads. We believe that the survey respondents’ lack of access to multi-use path facilities, the split between paved roads and multi-use paths may be skewed.

<table>
<thead>
<tr>
<th>Month</th>
<th>Paved Roads</th>
<th>Shoulders</th>
<th>Bike Lanes</th>
<th>Sidewalks</th>
<th>Multi-Use Path</th>
<th>Upaved Roads</th>
<th>Track</th>
<th>Grass</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>10821</td>
<td>4066</td>
<td>2587</td>
<td>18832</td>
<td>4816</td>
<td>2483</td>
<td>1048</td>
<td>862</td>
<td>0</td>
</tr>
<tr>
<td>February</td>
<td>10359</td>
<td>2154</td>
<td>54</td>
<td>14888</td>
<td>3506</td>
<td>1301</td>
<td>1301</td>
<td>1782</td>
<td>0</td>
</tr>
<tr>
<td>March</td>
<td>11165</td>
<td>3096</td>
<td>126</td>
<td>20250</td>
<td>3876</td>
<td>2470</td>
<td>37</td>
<td>1682</td>
<td>0</td>
</tr>
<tr>
<td>April</td>
<td>11582</td>
<td>3893</td>
<td>204</td>
<td>18603</td>
<td>3567</td>
<td>2785</td>
<td>16</td>
<td>2098</td>
<td>0</td>
</tr>
<tr>
<td>May</td>
<td>11366</td>
<td>3113</td>
<td>467</td>
<td>18887</td>
<td>4103</td>
<td>2319</td>
<td>1657</td>
<td>1565</td>
<td>0</td>
</tr>
<tr>
<td>June</td>
<td>9591</td>
<td>3072</td>
<td>195</td>
<td>16427</td>
<td>4076</td>
<td>2368</td>
<td>1399</td>
<td>1849</td>
<td>0</td>
</tr>
<tr>
<td>July</td>
<td>11997</td>
<td>2236</td>
<td>104</td>
<td>19189</td>
<td>1378</td>
<td>1950</td>
<td>57</td>
<td>3509</td>
<td>0</td>
</tr>
<tr>
<td>August</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>September</td>
<td>14534</td>
<td>3219</td>
<td>10164</td>
<td>21779</td>
<td>7453</td>
<td>3766</td>
<td>2699</td>
<td>51948</td>
<td>0</td>
</tr>
<tr>
<td>October</td>
<td>22798</td>
<td>7656</td>
<td>15312</td>
<td>33933</td>
<td>8694</td>
<td>5104</td>
<td>2110</td>
<td>3896</td>
<td>0</td>
</tr>
<tr>
<td>November</td>
<td>11676</td>
<td>4392</td>
<td>8068</td>
<td>18623</td>
<td>3837</td>
<td>3196</td>
<td>955</td>
<td>1972</td>
<td>0</td>
</tr>
<tr>
<td>December</td>
<td>12339</td>
<td>7179</td>
<td>24025</td>
<td>23076</td>
<td>6315</td>
<td>4176</td>
<td>35</td>
<td>2328</td>
<td>0</td>
</tr>
<tr>
<td>Average</td>
<td>11519</td>
<td>3673</td>
<td>5109</td>
<td>18707</td>
<td>4302</td>
<td>2660</td>
<td>943</td>
<td>6124</td>
<td>0</td>
</tr>
</tbody>
</table>
The 2003 Omnibus Survey results indicate the average pedestrian trip, for recreational purposes, is 1.9 miles long, while the non-recreation related trips average 0.8 miles in length.

These estimates are conservative, as they do not consider the student population of the seven schools located in the study area, that do not live within the study area, but may use the proposed trail system once it is established.

In summary, using the estimated study area population of 5,076, this analysis indicates there is the potential to average 47,127 pedestrian and bicycle trips per month, and the potential to average 52,782 trips per month in 2010. This further confirms the need to provide a network of trails within Center Township.
Physical Inventory and Assessment of Rights-of-Way

Mapping

A base map of the study area was prepared utilizing resources contained in the Beaver County GIS data base. This information was supplemented with geographical information systems (GIS) data obtained from the Southwestern Pennsylvania Commission, the Federal Emergency Management Agency (FEMA), the Beaver and Lawrence Counties Soil Survey (and Beaver County Conservation District), Penn State University's Pennsylvania Spatial Data Access (PASDA), and the United States Geological Survey (U.S.G.S.). Pashek Associates digitized parcel information for the study area, using parcel information obtained from the Beaver County Assessment Office. All of this information was assembled and a base map of the study area was created in ArcView GIS.

Physiographic Analysis

Using the information obtained from the aforementioned sources, Pashek Associates created a base map from which a desktop analysis of physical features was performed. Project area characteristics discussed during this analysis include:

- Transportation Issues
  - Existing Roadway Rights-of-Ways
  - Hazardous Walking Routes
  - Bus Routes
  - Intersection and Access Points
  - Bridges Culverts and Tunnels
  - Existing Sidewalks
  - Proposed Trails

- Infrastructure and Utilities

- Existing Land Use

Each are further discussed herein.

Sensitive Environmental Resources

- Steep Slopes
- Topography
- Soils
- Wetlands
- Streams and Ponds
- Floodplains
- Existing Vegetation and Wildlife Analysis
- Pennsylvania Natural Diversity Inventory Index
- Historic Sites
- Environmental Hazards
- Destinations
**Transportation Issues**

**Existing Roadway Right-of-Ways**

The following State Routes are located within the study area:
- Old Brodhead Road (SR 03002)
- Brodhead Road (SR 03007)
- Chapel Road (SR 03005)
- Center Grange Road (SR 03012)

The remainder of the roads within the study area are local Township roads. During his field visit, the Consultant documented the speed limits associated with each of the roads within the Township and documented them on the Transportation Map. Center Township’s Development Coordinator indicated the widths of the existing road right-of-ways are generally as follows:

- Center Grange Road: 50’
- Brodhead Road: Unknown
- Old Brodhead: Unknown
- Chapel Road: Unknown
- Baker Road: 33’
- Poplar Drive: 40’
- Clover Drive: 50’
- Edgewater Drive: 50’
- Todd Lane: 33’
- West Woodland Drive: 40’

A survey of each right-of-way should be prepared to confirm these right-of-way widths as the various segments of the final Safe Routes to School Segments enter the design phase, assuming they are deemed feasible by this study.

**Hazardous Walking Routes**

Given the nature of this study, consideration must be given to the Hazardous Walking Routes as defined by the Commonwealth of Pennsylvania. The Pennsylvania Public School Code of 1949 provides school districts with the authority to bus children to and from school, provided the students meet the following requirements: 16

**Elementary Students:** to and from school of elementary school pupils including kindergarten pupils, residing one and one-half (1 ½) miles or more by the nearest public highway from the school in which the pupils are enrolled and to which transportation is authorized under section 1361 of this act or residing in areas where the road or traffic conditions are such that walking constitutes a hazard to the safety of the child when so certified by the Department of Transportation. Such elementary school pupils shall include nonresident children who are placed in the home of a resident, or who are residents of an orphanage, or home or children’s home or other institution for the care and training of orphans or other children.

**Secondary Students:** to and from school of secondary school pupils residing two (2) or more miles by the nearest public highway from the school in which the pupils are enrolled and to which transportation is authorized under section 1361 of this act or residing in areas where the road or traffic conditions are such that walking constitutes a hazard to the safety of the child when so certified by the Department of Transportation.

Furthermore, the Act also provides for the Commonwealth to reimburse school districts for busing of students, and those students who reside within hazardous walking areas as follows:

The Commonwealth reimburses school districts for the approved reimbursable costs incurred in providing transportation under section 1361 for non public school pupils and under Section 1362 for hazardous conditions: Provided, however, that no district shall receive less than fifty percent (50%) of such approved reimbursable costs.
All of the students in the Center Area School District are bused to school. There are no students who walk to school. Over the years all of the existing walking routes within one and one-half miles of the District’s schools have been deemed to be hazardous.

Chapter 447 of the Pennsylvania Code gives the Pennsylvania Department of Transportation the authority to determine if a walking route is hazardous. A hazardous walking route is defined as “An unsafe condition caused by potential incompatibility between vehicles and school students, while the students are walking between their home and their school or bus stop.” Chapter 447 also establishes the criteria for determining a hazardous walking route. The criteria includes:

Criteria

(a) A student walking route shall be considered hazardous if any one of the following three conditions exist:

1. Two or more pedestrian-related accidents have occurred during the last 3 years while the pedestrians were walking along the student walking route during hours students are normally going to or from school.

2. It is necessary for a student to cross a roadway; either daily or intermittently, at a location where vehicular traffic is not controlled by either traffic control signals or a stop sign, or where students are not protected by an adult crossing guard; provided vehicular traffic on roadway is in excess of the values given in the table below for any 15-minute period during which students are en route to or from school:

<table>
<thead>
<tr>
<th>Safe Running Speed</th>
<th>Minimum Distance (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 or less</td>
<td>200</td>
</tr>
<tr>
<td>35</td>
<td>240</td>
</tr>
<tr>
<td>40</td>
<td>275</td>
</tr>
<tr>
<td>45</td>
<td>315</td>
</tr>
<tr>
<td>50</td>
<td>350</td>
</tr>
<tr>
<td>55</td>
<td>410</td>
</tr>
</tbody>
</table>

* If the roadway is divided by a raised median which is at least 8 feet wide and has non mountable curbs, the roadway should be considered as two separate roadways.

3. It is necessary for students to cross a railroad-highway grade crossing which has two or more tracks and the following three qualifications are met:

   (i) Trains normally—not necessarily with regularity—use the crossing at the time the students cross the tracks going to or from school.

   (ii) The crossing is not protected by a flashing light signal or a crossing guard.

   (iii) The speed of the trains and the available sight distance are such that students walking at a speed of 3.5 feet per second cannot safely cross the tracks.

(b) A student walking route shall be considered hazardous if a sidewalk does not exist and either paragraph (1) or (2) applies:

1. The shoulders are less than 4 feet wide and for either:

   i) Elementary students, the roadway surface is less than 20 feet wide and one or more trucks with three or more axles, not including garbage trucks or other types of trucks making house-to-house stops, normally use the roadway during the time the elementary students are en route to or from school.
ii) Streets and highways with an average traffic volume of at least ten vehicles per hour during the time students are walking, a 3.5-foot tall elementary school student or a 4.5-foot tall secondary student is not visible by approaching drivers from at least the following minimum distances:

<table>
<thead>
<tr>
<th>Roadway Width (ft)*</th>
<th>For Elementary Students No. of Vehicles</th>
<th>For Secondary Students No. of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 or less</td>
<td>155</td>
<td>175</td>
</tr>
<tr>
<td>24</td>
<td>130</td>
<td>150</td>
</tr>
<tr>
<td>30</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>36</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>48</td>
<td>40</td>
<td>60</td>
</tr>
</tbody>
</table>

(2) The normal vehicular traffic volume during any 15-minute period that students are en route to or from school exceeds the following values for the appropriate safe-running speed range:

(i) Safe-running speed is 35 mph or less:

<table>
<thead>
<tr>
<th>Shoulder Width</th>
<th>For Elementary School Students</th>
<th>Number of Vehicles for Secondary School Students Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 4 feet</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>4 ft. to 6 feet</td>
<td>40</td>
<td>65</td>
</tr>
</tbody>
</table>

(ii) Safe-running speed is over 35 mph:

<table>
<thead>
<tr>
<th>Shoulder Width</th>
<th>For Elementary School Students</th>
<th>Number of Vehicles for Secondary School Students Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 4 feet</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>4 ft. to 6 feet</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

On February 2006, the District’s Director of Transportation requested a list of Hazardous Routes within the Center Area School District. The following roads were noted on PennDOT’s response and documented on the project mapping:

- Baker Road
- Brodhead Road
- Center Grange Road and all feeder roads
- Chapel Road and all feeder roads
- Pleasant Drive
- State Route 18
- Trinity Drive

Early on in this study, concern was expressed over the fact that the School District may lose their state subsidy if existing hazardous walking routes are upgraded to safe routes to schools.
Center Township Safe Routes to Schools
Beaver County, Pennsylvania
Transportation Issues

North Branch Road (County owned & maintained)
The County has discussed the possibility of constructing improvements to turning movements; and widening and realignment improvements. The intent is once the improvements are made the County would turn the road over to the Township.

Baker Road
- No Pedestrian Sidewalks.
- Vehicular traffic tends to travel at high speeds.
- Stop signs need brought up to current standards.

Poplar Drive
- Poor pedestrian level lighting.
- No Pedestrian Sidewalks.
- Vehicular traffic tends to travel at high speeds.
- Stop signs need brought up to current standards.

Center Grange & Broadhead Roads Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Todd Lane/Chapel Road/McCracken Drive
- Interaction issues with Chapel Road.
- Limited sight distance due to posted speed, and trees and shrubbs in the right of way.
- Pedestrian safety issues due to small street signs.

Chapel Road & High Street Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Chapel & Broadhead Roads Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Poplar Drive/Center Grange Road/K-2 Primary Center
- No pedestrian connectivity.
- Pedestrian safety issue due to small street signs.
- Make sure landscaping does not affect sight distance.

Bus Routes by Zone
- Old Brodhead
- Eben
- Richland I
- Gauldy
- Hall
- East Shaffer Estates
- Chapel Road
- Firehall 1
- East Shaffer Estates
- Eben
- Richland I
- Gauldy
- Hall
- Old Brodhead
- Rehab
- Skerroll
- Union
- Todd Lane
- West Shaffer

Bus Routes by Zone
- CHS/CMS
- Cedar Ridge
- Center Grange
- Chapel Road
- East Shaffer Estates
- Eben
- Richland I
- Gauldy
- Hall
- Old Brodhead
- Rehab
- Skerroll
- Union
- Todd Lane
- West Shaffer

Legend
- Todd Lane Elementary School
- Center Area High School
- Beaver County Community College
- Beaver County Vo-Tech School
- Beaver Valley Intermediate Unit
- Center Grange Primary Center

Chapel & Broadhead Roads Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Pleasant Drive & Brodhead Road Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Center Grange & Broadhead Roads Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve sight distances at this intersection. NOT COMPLETED

Chapel Temple Roads Intersection
The 1993 Township Comprehensive Plan plan recommended the Township work with PennDOT to improve channelization of traffic. NOT COMPLETED
The National Center for Education Statistics indicates the following:\footnote{17}

✓ Since 1970, the portion of public school children transported by bus has increased from 43% to 57%.
✓ Per-pupil busing costs have grown from $394 in 1990-91 to $521 in 1999-2000.
✓ In 1999-2000, $13 billion was spent on busing children to public schools, at an average cost of $521 per student.

The expenses and corresponding subsidies must be factored into the analysis should the possibility exist for Hazardous Routes to be improved to the extent they are no longer deemed hazardous.

**Intersections and Access Points**

The 1993 Township Comprehensive Plan recommended the following intersection improvements:

- **North Branch Road**: A county owned and maintained road. The County has discussed the possibility of constructing improvements to turning movements; and widening and realignment improvements. The intent is once the improvements are made the County would turn the road over to the Township.

- **Chapel and Brodhead Roads Intersection**: The plan recommended the Township work with PennDOT to improve sight distances at this intersection. – Not completed

- **Chapel Road and High Street Intersection**: The plan recommended the Township work with PennDOT to improve sight distances at this intersection. – Not completed

- **Center Grange and Brodhead Roads Intersection**: The plan recommended the Township work with PennDOT to install a left turn lane and complete a study to determine if a traffic signal is warranted. – Not completed

- **Pleasant and Brodhead Roads Intersection**: The plan recommended the Township work with PennDOT to complete a study to determine if a traffic signal is warranted. – Not completed

- **Temple and Chapel Roads Intersection**: The plan recommended the Township work with PennDOT to improve channelization of traffic. – Not completed

The Transportation Issues Map identifies the following information:

✓ State Routes
✓ Functional Class of Roads
✓ Posted Speed Limits
✓ Average Daily Traffic Counts, where available
✓ Traffic Control Measures Present at Major Intersections
✓ PennDOT Classified Hazardous Routes
✓ Locations of Existing Sidewalks
✓ 1993 Comprehensive Plan Improvement Recommendations
✓ Observations of walking and bicycling issues documented for this study

There are not any active or abandoned railroad lines, or livestock crossings located within the study area.
Existing Land Use

Existing land use conditions were documented and recorded on the Existing Land Use Map. Land use classifications in the study area are based upon the Township’s current Zoning Ordinance, and are as follows:

- R-1: Low Density Residential
- R-2: Suburban Residential
- R-3: Urban Residential
- R-4: Multi-Family Residential
- C-1: Restricted Commercial
- C-2: General Commercial

The heart of the study area, those properties on which the schools, and the Township community park are zoned R-1 or R-2 on the Township Zoning Map. There are a handful of commercial properties located along Brodhead Road that are also in the project’s study area. For purposes of this study, the existing land use has been classified as public, educational or residential. It is important to acknowledge that the land uses surrounding this nucleus are residential in nature. This factor helps to support the need for providing safe route to school opportunities in the study area.

<table>
<thead>
<tr>
<th>Study Area Existing Land Use Summary</th>
<th>Acreage</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,744</td>
<td>86.7%</td>
</tr>
<tr>
<td>Commercial</td>
<td>50</td>
<td>2.5%</td>
</tr>
<tr>
<td>Public</td>
<td>217</td>
<td>10.8%</td>
</tr>
<tr>
<td>Total</td>
<td>2,012</td>
<td>100%</td>
</tr>
</tbody>
</table>

Proposed Land Use

Several projects within the project study area that are currently in the planning and/or development phases that present opportunities.

Center Area School District Primary Center

The first project is the construction of the Center Area School District Primary Center. This new elementary school is being constructed at the intersection of Center Grange Road and Poplar Drive, directly across from Fred Tadeo Memorial Park, the Township’s main park and recreation facility. This school is scheduled to be completed for the 2007-2008 school year.

The current plans do not include sidewalks on the school’s campus along Center Grange Road and Poplar Drive. In addition, traffic at the intersection of Center Grange Road and Poplar Drive is only controlled with a stop sign on Poplar Drive. There are not traffic controls on Center Grange Road at this intersection. Therefore, it is difficult to walk from the new elementary school to the existing community park.

Beaver County Community College Campus Master Plan

The Beaver County Community College is completing a planning process for campus improvements. The improvements are proposed to be constructed in a series of phases beginning in 2007 and being completed by 2010. The plan proposes a sidewalk around the campus’ north and western perimeters. Sidewalks are proposed along Community College Drive, beginning at Parking Lot No. 1, and extending west to the intersection of Community College and Poplar Drives. From this intersection a sidewalk is proposed to parallel the eastern side of Poplar Drive to the College’s Allied Health Services Building (Building 6) and Parking Lot No. 6.
The preliminary project schedule for implementing the proposed improvements, currently projects that construction of the sidewalks in this area would begin in the Fall of 2008. The project schedule has not been finalized, and is subject to change.

**Infrastructure and Utilities**

Electric, sewer, water, gas rights-of-ways are limited in the project area. These routes do not serve as viable routes for the potential safe routes to schools.

**Bridges, Culverts and Tunnels**

There are numerous bridges and culverts associated with the existing vehicular transportation system within the study area. Based on visual observation each appears to be in good, or fair condition, and there are not any structures within the study area that appear to be in poor condition.

**Existing Sidewalks**

There are few sidewalks in Center Township. Recent residential subdivision plans have begun to include them, and the most recent commercial development project, the Target Plaza, constructed sidewalks as part of their development.
Sidewalks are located in study area within the following residential neighborhoods:

- Lakeview Farms – off Chapel Road, McCracken Drive, James Lane, and Mary Street

As noted above, the Wagner Road Extension, through the Target Plaza also contains sidewalks. The Township has proposed to construct sidewalks along the remainder of Wagner Road, along the Lowes Plaza, to State Route 18. This would provide pedestrian connectivity from the new Cinemark Theaters to the restaurants located along Wagner Road, and across State Route 18 in the Walmart Plaza.

**Proposed Trails**

A shared use path connecting the Beaver Valley Mall to Monaca Borough has been proposed in the past by Township representatives. The Township has not actively pursued additional planning efforts related to this proposed trail. This trail would not connect to Center Township's proposed safe routes to schools. However, future planning studies in the Township should evaluate the possibility of serving the community at large. The Safe Routes to School project area should be further evaluated to determine the feasibility of connecting the study area to the County-wide greenways and trails system proposed in the Beaver County Greenways and Trails Plan, adopted in 2007.

**Sensitive Environmental Resources**

**Steep Slopes**

The majority of the project area is comprised of slopes between 0 and 15%. Areas of slopes up to 40% are located on the hillsides of the existing stream valleys in the northeast and extreme southwest portions of the project area. Because the most severe slopes in the project area are concentrated into several small areas, they should not pose an obstacle to trail development.

**Topography**

Topographic information was obtained from the “Beaver, PA” U.S.G.S. 7.5 minute quadrangle. The base map contour interval is 20 feet.

**Soils**

The General Soil Map of the Soil Survey of Beaver and Lawrence Counties indicates that the majority of the project area consists of the Gilpin-Wharton-Weikert soil association. This association is found on undulating, broad and narrow ridgetops, side slopes, and hillsides of highly dissected uplands.

About 35% of the soils in this association are Gilpin soils (moderately deep, well-drained, gently sloping to very steep), 15% are Wharton soils (deep, moderately well-drained, high water table during wet seasons, mostly in nearly level areas), 10% are Weikert soils (shallow, well-drained, gently sloping to very steep), and 40% are soils of minor extent (poorly-drained Cavode soils, moderately well-drained Tilsit and Ernest soils, and well-drained Clymer soils).

**Wetlands**

A formal wetland delineation was not performed for this project. However, an inventory of probable wetlands was compiled using known jurisdictional wetlands located on National Wetland Inventory (NWI) Mapping available through the National Fish & Wildlife Service, along with locations of soils with hydric (wetland soil) components taken from the Beaver and Lawrence Counties Soil Survey.

Four wetlands, all located in the northcentral and southcentral portions of the project area, were identified on NWI mapping. These sites coincide with existing ponds and stream valleys.

Three areas of soils with hydric components, which are potential wetland sites, are located in the existing stream valleys in the northeast and southern portions of the project area. The hydric soils comprising these areas are:
• **Atkins Silt Loam**: a nearly level, deep, poorly drained soil on flood plains. This soil is also strongly acidic throughout, its permeability is moderately slow, and the high water table is within 12 inches of the surface most of the year.

• **Brinkerton Silt Loam, 8-15% slopes**: a sloping, deep, poorly drained soil on foot slopes and benches in residual uplands. This soil has slow permeability, is strongly acid near the surface, and the high water table is within 6 inches of the surface for most of the year. This soil also poses a severe erosion hazard, as runoff is very rapid.

**Streams and Ponds**

Two streams traverse the project area. They are Shaffer Run in the extreme south and Moon Run in the northeast. Small unnamed tributaries of each stream are also located in the project area, as are unnamed tributaries of Elkhorn Run, which is located just to the southeast and east of the project area.

Moon Run and Elkhorn Run received Warm-water Fishery (WWF) classifications from the Department of Environmental Protection (DEP) in their Chapter 93 Water Quality Standards. Shaffer Run did not receive a Chapter 93 stream classification.

Two ponds are located within the project area boundaries: one in the southern portion of the project area along an unnamed tributary to Elkhorn Run, and one along Moon Run in the northern portion of the site. Each pond is located on private property. As mentioned previously in this section, known jurisdictional wetlands coincide with each of these ponds.

**Floodplains**

One-hundred-year Floodplains were identified along Shaffer Run, Moon Run, and unnamed tributaries of each stream. These 100-year floodplains were derived from FEMA Floodplain Map #4223100002A for Moon Run, and #4223100004A for Shaffer Run.

**Existing Vegetation and Wildlife Analysis**

The Beaver County Natural Heritage Inventory identifies “natural heritage areas” in order to promote their protection. These areas include important biotic and ecological resources such as habitats for plant and animal species of concern (endangered, threatened, etc.), significant natural communities (assemblages of plants and animals), and areas important for general wildlife habitat, open space, and recreation. According to the Natural Heritage Inventory, no such areas are located within the project area.

Although a plant and wildlife field inventory was not included in this project, probable wildlife inventories were derived from periodic site observation and from reference sources. From classifications of probable plant communities / habitats, the Consultant compiled potential plant and wildlife inventories using sources such as the following:


- Soil Survey of Beaver and Lawrence Counties, Pennsylvania, United States Department of Agriculture’s Soil Conservation Service, in cooperation with the Pennsylvania State University College of Agriculture and the Pennsylvania Department of Environmental Resources’ State Conservation Commission: Issued April 1982.

The dominant natural community in the Safe Routes to School project area, not accounting for changes caused by human development, is the Oak-Hickory Forest. The following list represents a **potential** plant species inventory for this habitat type:
The Oak-Hickory forest habitat type comprises several small portions of the project area, mainly surrounding stream channels. Although this habitat is fragmented, it is still substantial, and is thus vital to many general wildlife species. For example, acorns and hickory nuts provide food for squirrels, wild turkeys, white-tailed deer, various mice, and chipmunks. Also, yellow poplar and white ash trees offer seeds that remain on the trees all winter, providing food for several species of bird and other wildlife.

Shelter is also available in the forest habitat. Standing dead timber offers nesting cavities for raccoons, opossums, and wood ducks, and Fallen logs and leaf litter provide ample shelter for small rodents, reptiles, and amphibians.
Center Township Safe Routes to Schools
Beaver County, Pennsylvania

Sensitive Environmental Features
The following list represents a potential inventory (not including insects and other invertebrates) of the wildlife that may utilize the habitat types in the Safe Routes to School project area:

<table>
<thead>
<tr>
<th>Mature Oak / Hickory Forest Habitat - Potential Wildlife Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooper's Hawk</td>
</tr>
<tr>
<td>Broad-winged Hawk</td>
</tr>
<tr>
<td>Eastern-Wood Peewee</td>
</tr>
<tr>
<td>Great Crested Flycatcher</td>
</tr>
<tr>
<td>Whip-poor-will (bird)</td>
</tr>
<tr>
<td>Gray Jay</td>
</tr>
<tr>
<td>Blue Jay</td>
</tr>
<tr>
<td>Blue-gray Gnatcatcher</td>
</tr>
<tr>
<td>Red-eyed Vireo</td>
</tr>
<tr>
<td>Five-lined Skink</td>
</tr>
<tr>
<td>Black Rat Snake</td>
</tr>
<tr>
<td>Timber Rattlesnake</td>
</tr>
<tr>
<td>Summer Tanager</td>
</tr>
<tr>
<td>Scarlet Tanager</td>
</tr>
<tr>
<td>Tufted Titmouse</td>
</tr>
<tr>
<td>Chickadees (various)</td>
</tr>
<tr>
<td>Tufted Titmouse</td>
</tr>
<tr>
<td>Woodpeckers (various)</td>
</tr>
<tr>
<td>White-breasted Nuthatch</td>
</tr>
<tr>
<td>Warblers (various)</td>
</tr>
<tr>
<td>Northern Bobwhite</td>
</tr>
<tr>
<td>Ovenbird</td>
</tr>
<tr>
<td>Wild Turkey</td>
</tr>
<tr>
<td>Gray Squirrel</td>
</tr>
<tr>
<td>Fox Squirrel</td>
</tr>
<tr>
<td>White-footed Mouse</td>
</tr>
<tr>
<td>Woodland Vole</td>
</tr>
<tr>
<td>Gray Fox</td>
</tr>
<tr>
<td>Red Fox</td>
</tr>
<tr>
<td>White-tailed Deer</td>
</tr>
<tr>
<td>Black Bear</td>
</tr>
<tr>
<td>Marbled Salamander</td>
</tr>
<tr>
<td>Slimy Salamander</td>
</tr>
<tr>
<td>Spotted Salamander</td>
</tr>
<tr>
<td>Eastern Box Turtle</td>
</tr>
</tbody>
</table>

While development in the Oak-Hickory forest may be detrimental to all of these species, careful trail placement and design will minimize impact to the surrounding habitat. None of the wildlife species listed will pose problems to trail use. Plant species may pose problems only in terms of overgrowth if proper maintenance is not provided.

There are no farm or pasture lands located within the study area. Therefore, there are not any livestock crossings that proposed trails may intersect.

Pennsylvania Natural Diversity Inventory Index Search

The Pennsylvania Department of Forestry maintains the Pennsylvania Natural Diversity Inventory (PNDI) Index. This is a database of known locations of Pennsylvania’s rare, threatened, and endangered plant and animal species.

Searches of the PNDI Database (Searches #20060420030208, #20060420030216, and #20060420030220) indicated that there are no known species of concern within the project area. The PNDI is one of several methods used in the Beaver County Natural Heritage Inventory mentioned earlier in this section.

Historic Sites

In 1998, Christine Davis Consultants completed an “Inventory and Assessment of Historic and Heritage Sites of Beaver County, Pennsylvania”. The purpose of this study was to provide an inventory and assessment of historic and heritage sites in Beaver County. In Center Township, two properties were identified for their contribution to the history and heritage of Beaver County. These properties are the Baker-Dugan Museum on the Pennsylvania State University’s Beaver Campus and the Center Grange located on Center Grange Road.

Baker-Dugan Museum

The Baker-Dugan Museum was identified for its contribution to architecture in the County and for its current function as a museum. The structure is named for the first settlers in Beaver County.

Center Grange

The Center Grange, located on Center Grange Road, was identified for its contributions to agriculture in Beaver County.
Environmental Hazards

During the course of this study the Consultant examined the project area for unique or sensitive natural areas, which might be affected by trail construction or use. Based on preliminary assessments there are potential jurisdictional wetlands. Every effort will be made to avoid trail development in these areas. Should it be necessary to impact one of these areas, the Consultant will recommend that a jurisdictional wetland determination be completed before final design of the particular trail segment is undertaken. There are no other unique or sensitive natural areas associated with the study area.

A review of existing land use, the condition of properties within the study area in the field, and the Pennsylvania Department of Environmental Resources EMap indicates there are no known toxic waste disposal or other environmental hazards that exist within the study area. Therefore, no other environmental assessment studies are recommended at this time.

Destinations

When planning for trails it is important to understand the destinations that the trail users desire to access. Towards that end, the Study Committee identified the following potential destinations in the study area:

✓ Fred Taddeo Memorial Park
   Location: Near the intersection of Center Grange and Chapel Roads, adjacent to the Township Municipal Complex
   Features: Five ballfields, two tennis courts, three picnic shelters, one basketball court, and one community playground

✓ Center Area Middle and High School Complex
   Location: Baker Road
   Features: Nature and walking trail, two ballfields, three tennis courts, one track and field complex, one gymnasium, and proposed fitness center

✓ Todd Lane Elementary School
   Location: Todd Lane
   Features: One community playground and one practice football field

✓ Sherwood Acres Playground
   Location: Sherwood Drive
   Features: One neighborhood playground

✓ Proposed Center Area Primary Center
   Location: Center Grange Road across from the Township Municipal Complex
   Features: One playground and two multi-purpose fields

✓ Community College of Beaver County
Study Committee Meeting Two

On April 18, 2006, the second study committee meeting was held. The purpose of the meeting was to:

1. Review the tasks completed to date and receive feedback.
2. Discuss general observations made during field review of proposed study area.
3. Review and comment on revised Questionnaire, discuss method and range of distribution – recommend survey distributed to student population.
4. Schedule meetings with Barry Kramer, Mike McCullough and Susan Cole, and Frank Vescio.
5. Set dates for:
   a. Public Meeting: May
   b. Discuss preparation of the lead article for Beaver County Times
   c. Discuss preparation and logistics of posting flyers announcing meeting
   d. Discuss inviting key people – Township, School Board, others?

The work completed to date was reviewed, including:

- The project study area was expanded as recommended by the study committee at the first study committee meeting. The study area is now defined as being generally bound by the following roads: Old Brodhead Road to the north, Chapel Road to the east, Brodhead Road to the west, and Shaffer Road to the south. It also includes residential neighborhoods along both sides of the roads that form the boundary of the study area.
- A draft of the revised Study Area Map was distributed and reviewed.
- A revised Questionnaire was distributed and reviewed. The Study Committee members present approved the distribution of the questionnaire through the schools, and to the community at-large.
- The Consultant briefly reviewed the following information and noted it was added to the Inventory since the last study committee meeting:
Center Area School District Enrollment Projections through 2012

A list of Hazardous Routes in the Township as defined by Pennsylvania Department of Transportation

Inventory of potential destinations within the project study area

Identification of recommended transportation improvements from the Township’s 1993 Comprehensive Plan

- A draft of the Environmental Sensitive Resources Map was reviewed and distributed.
- A preliminary draft of the Transportation Issues map was reviewed. The map shows the Hazardous Routes defined by PennDOT. Almost all of the roads within the study area are considered to be Hazardous Routes. Members of the committee were surprised to learn this fact. The Consultant also noted there is concern from the School District administration that if some or all of the hazardous routes would be improved to the extent they would no longer be deemed hazardous, that the District may lose a portion of it’s transportation subsidy from the State.
- The Schools District’s Transportation Director suggested the Consultant observe the traffic patterns at each of the schools during arrival and dismissal time. In addition, the Director furnished a file containing the bus route and stop information for the District.

Next, the Consultant reviewed and received feedback on the initial observations made regarding walkability and bikeability issues within the study area, as follows:

- Center Township is not very friendly to pedestrians or bicyclists due to the lack of sidewalks, shared-use paths, bike lanes, and wide shoulders.
- If sidewalks or a shared use path were constructed within the road right-of-way along Poplar Avenue and Baker Road, the safety of walking from School Complex to Community College Complex would be greatly improved.
- New sidewalks, in conjunction with the improvements noted above, could connect the Sherwood Drive neighborhood with the school corridor. Buerkle noted the intersection of Sherwood and Poplar would have to have some form of traffic control, most likely it would be upgraded to a four-way stop.

A committee member expressed concern over this observation. She noted the Sherwood and Polar intersection is very dangerous during times of peak traffic (when school buses and arriving and leaving the schools). Buerkle suggested there may be ways to improve the safety and those methods would be further explored as the study progresses.

- Center Grange / Poplar Avenue intersection could be improved to allow for pedestrian crossing to connect Municipal Center and Community Park with the future primary center, and the Vocational Technical School, the Community College of Beaver County, and the Center Area Middle and High School Complex.
- There is no obvious route to connect Penn State Beaver with the other schools. However, Old Brodhead, to Clover to Chapel to Edgewood may provide a venue for making the connection.
- Intersection improvements, perhaps in the form of stop signs and crosswalks, at Chapel Road and McCracken Drive, would allow pedestrians from the Lakeview Farm and Cedar Ridge neighborhoods to access Todd Lane Elementary School.
Stop signs and crosswalks at Chapel Road and Cedar Ridge Drive would improve the opportunity for pedestrians to cross over Chapel Road to Middle / High School Complex.

The Consultant concurs the shared use path proposed by the committee, which served as the impetus for this project, from Community College ballfield, to Middle / High School Complex, past ballfield, behind tennis courts to Todd Lane Elementary School could be a very viable opportunity to connect the educational facilities, and their associated recreation components, to one another.

A committee member asked if the District should be considering placing crossing guards at key locations as the safe routes to schools are established. We indicated crossing guards would certainly be considered and recommended where appropriate. An attendee asked if the cost of adding crossing guards would be considered in the financial recommendations of the study, and if the State provides any reimbursement for the guards. We indicated the costs need to be considered, and we will check to see if there is a mechanism in place to subsidize the cost of providing crossing guards.

The time and date for the first public meeting was tentatively scheduled for May 16th at 7:00 pm.

It was suggested the study committee members send out a personal invitation the Township Supervisors, School Board members, and other key individuals in the community.

The Consultant noted a lead article will be prepared for the Beaver County Times, and flyers announcing the meeting that study committee members can place in key locations around the Township.

Safe Routes to Schools Questionnaire

In May 2006, approximately one thousand four hundred questionnaires were distributed in Center Township, Beaver County. The questionnaire was distributed to the student population through their homerooms. In addition an announcement was placed in the Beaver County Times, the Township's newsletter, and the School District's website letting the Township residents know the questionnaire was available at the Township Building if they had not received a survey, and were interested in completing it.

Participants were asked to complete and return the questionnaire to their child's school office, or the mail it to the school nurse at Todd Lane Elementary School. One hundred seventy-seven questionnaires were completed and returned for a good response rate of thirteen percent. The survey was designed to have a response rate of between ten to fifteen percent, therefore, the results are considered to be valid and representative of the Center Area School District community's opinions on the issues.

The following charts, graphs, tallies and analyses show the results of each question.

Question 1

66% of respondents feel that existing walking, hiking, jogging and bicycle opportunities are not safe.
Question 2

85% of respondents feel that providing safe walking and bicycling routes between the Township’s neighborhoods, parks and schools should be a high priority.

Question 3

90% of respondents feel that providing safe walking and bicycling routes in the Township will increase the quality of life.
Question 4

Respondents were asked to circle the number of people in their household and their corresponding age group. The largest number of people make up the 0-17 age group (402 people), while the smallest group consisted of those 65 years and older (5 people).
Question 5

Respondents were asked to circle the grade levels of their children. The majority of respondents have children that are in elementary school. The largest number of respondents' children are in kindergarten and fifth grades.

Question 6

Fifty-three percent of respondents (53%) live within two miles of their child's school.

Question 7

What street do you live on? Refer to the tabulation in study appendix.
**Question 8**

How does your child usually travel to and from school?

**To School**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Walk</th>
<th>Bike</th>
<th>Driven</th>
<th>Carpool</th>
<th>Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyday</td>
<td>0%</td>
<td>0%</td>
<td>16%</td>
<td>0%</td>
<td>75%</td>
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<td>2-3 Times / Wk</td>
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<td>0%</td>
<td>3%</td>
<td>1%</td>
<td>78%</td>
</tr>
<tr>
<td>1 / Wk</td>
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<td>0%</td>
<td>13%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Occasionally</td>
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<td>0%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
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<td>99%</td>
<td>100%</td>
<td>62%</td>
<td>97%</td>
<td>16%</td>
</tr>
</tbody>
</table>

**From School**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Walk</th>
<th>Bike</th>
<th>Driven</th>
<th>Carpool</th>
<th>Bus</th>
</tr>
</thead>
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<tr>
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<td>0%</td>
<td>1%</td>
<td>11%</td>
<td>0%</td>
<td>75%</td>
</tr>
<tr>
<td>2-3 Times / Wk</td>
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<td>0%</td>
<td>8%</td>
<td>1%</td>
<td>8%</td>
</tr>
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<td>1 / Wk</td>
<td>1%</td>
<td>0%</td>
<td>3%</td>
<td>1%</td>
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</tr>
<tr>
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<td>0%</td>
<td>16%</td>
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</tr>
<tr>
<td>No Response</td>
<td>97%</td>
<td>99%</td>
<td>62%</td>
<td>96%</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Question 9**

60% of respondents have concerns about traffic safety along the routes to their child's school.
**Question 10**

If you drive your child, or your child drives to school, why is that choice made? The top five reasons listed include:

1. Carrying projects or musical instruments
2. Convenience, Drop off on way to / from work
3. Too far to walk
4. Backpacks too heavy
5. Route lacks sidewalks/ child is too young / Child participates in after school activities

**Question 11**

Respondents would you allow your child to walk or bike to school, if:

1. Improved sidewalks, trails and bike paths
2. Paths were separated from traffic
3. Cars slowed down
4. Accompanied by parents
5. Crossing guards were provided

**Question 12**

Provided space for respondents to provide additional information as they desired. Refer to the tabulation of these comments in this study’s appendix.

**Public Meeting One and Study Committee Three**

On May 23, 2006, a public meeting was held in conjunction with Study Committee meeting three. The meeting was advertised in the Beaver County Times, and on the Center Area School District web site. In addition flyers were posted in each of the district’s schools, and in the Township building. The purpose of this meeting was to obtain input from the residents of Center Township on the project, and to provide the public with a report on the status of the project. Twelve individuals were present at this meeting. Following a brief review of the study process, the Consultant presented the inventory, analysis and draft recommendations for potential walking and bicycling route improvements.

Mark Ciccarelli, Mountain State University’s Center Township Campus Administrator, asked what arrangements have been made to secure right-of-ways, easements, and / or properties to make these routes happen. The consultant indicated that now the routes are being identified the feasibility of acquiring a corridor for use as a trail, sidewalk, etc. would be evaluated. The hope is the majority of the proposed improvements will be intersection and sidewalk improvements that can be made within the existing road right-of-ways, and the shared use path between Todd Lane and the Jr. / Sr. Complex could occur on the properties of the various educational institutions involved. It was noted the Center Area School District and the Beaver County Community College have participated financially in this study therefore there is the desire from those entities to see the Safe Routes to Schools established.

Attendees expressed support for the plan and asked what they could be doing to help it succeed. The consultant noted that in his discussions with the Township, he learned the Township is about to update their Comprehensive Plan. This plan is the document that guides land use, growth, development, and land preservation within in the Township for the next ten years,
along with guiding many other aspects of Township government. The consultant recommended that a member of the Safe Routes to Schools study committee actively pursue being appointed to the study committee for the Comprehensive Plan update. This representative can serve as an advocate for Center Township's proposed safe routes to schools. In addition an attendee suggested the committee submit, in writing, to the Township Supervisors their desires for establishing safe routes to schools.

The consultant recommended a second public meeting would be held in the near future, and that it be part of a regularly scheduled meeting of the Township's Board of Supervisors. It was noted that although the Township financially supported this study, it appears the Township does not understand the benefits, or significance of this project to the Township's residents.

Next, the consultant presented a summary of the recently completed Recreation Needs Questionnaire.

The consultant asked attendees what expertise they can bring can bring to this project. Mark Ciccarelli, of Mountain State University, indicated he is licensed to practice law in Pennsylvania, and has masters degrees in Business Administration and Public Administration. He said he would make these skills available to endeavors related to this project as requested by the District.

Attendees asked the consultant what he thought the barriers might be at the Township level, whether they are lack of understanding, or lack of interest in prompting the effort. Buerkle responded by saying he feels the Township Supervisors and others in the Township do not understand the specifics of the project, and appear to feel there are barriers beyond their control that will limit the success of the project. Buerkle said it would be beneficial to educate the Supervisors on the project, and respond to their concerns.

Buerkle indicated that as soon as he schedules a date for the second public meeting with the Township Supervisors he would notify the study committee members. He also encouraged each member to bring a neighbor or friend who lives in the District. The purpose of this meeting with the Supervisors would be to explain the study process, educate them on the significance of providing Safe Routes to Schools, the other benefits the Township would receive by improving pedestrian and bicycle opportunities in the Township, and respond to any concerns the Supervisors may have.

Public Meeting Two

On August 15, 2006, the Consultant and several of members of the Center Township Safe Routes to Schools committee members attended the Center Township Board of Supervisors Meeting. During this meeting the consultant presented an overview of the Safe Routes to School Study that is underway, and presented preliminary recommendations of the study. At the conclusion of the presentation, the consultant accepted questions, and asked for the Board of Supervisor’s support in implementing the recommendations of the study. The Township Engineer supported the concept, however, questioned whether PennDOT would be supportive, and, allow the recommended improvements within their right-of-way. The consultant noted that PennDOT District 11-0 has not pro actively accepted the Federal Highway Administration's mandate to provide for pedestrian and bicycle transportation facilities within the State right-of-way. However, the consultant did note that PennDOT, as an organization, has accepted the FHWA mandate, and that it is expected that overtime the local district office will be more receptive to pedestrian and bicycle activities within their right-of-ways. The consultant noted that the roadway improvements being proposed are consistent AASHTO’s “Policy on Geometric Highway Design”, AASHTO’s “Guide for the Development of Bicycle Facilities”, and several International Transportation Engineers Publications.

The consultant said the Township should not just take no for an answer when discussing potential pedestrian and bicycle improvements, but should challenge them to prove why a proposal cannot be approved. The FHWA mandate says that if pedestrian and bicycle improvements cannot be made, the State's DOT must prove why they cannot be done (If not, why not?).

Next, the Township Engineer expressed concern with the Township’s ability to meet the Americans with Disabilities Act requirements for public facilities. The consultant noted that Title II of the Americans with Disabilities Act provides several exceptions that may apply in certain circumstances related to Safe Routes to Schools. These include the following:
In general, alterations of specific elements or portions of a facility must be completed in compliance with the requirements for new construction. However, full compliance with the alterations requirements is not required where it is technically infeasible. The exception for technical infeasibility is discussed in ADAAG 4.1.6(1)(j). This and other special provisions and exceptions for alterations contained in ADAAG 4.1.6 are discussed on the Minimum Requirements Summary Sheet I: Accessible Buildings - Additions and Alterations. Additional special provisions and exceptions for alterations for special facility types are found in ADAAG 5, 6, 7, 9 and 10 and on the Technical Requirements Survey Forms for the special facility types.

If an alteration affects or could affect the usability of or access to an area of a facility that contains a “primary function,” an accessible path of travel must be provided to the altered area. In addition, restrooms, telephones, and drinking fountains serving the altered area must also be made accessible to the extent that the cost is not “disproportionate” to the cost of the overall alteration. Disproportionately is defined in 28 CFR 36.403 (f) and 49 CFR 37.43(e) as a sum not to exceed 20% of the cost of the alteration to the primary function area.

Before assuming these exceptions can be applied, specific situations should be reviewed with the Americans with Disabilities Act Access Board. Specific situations can be discussed by calling 1-800-872-2253 and reviewing the proposed project’s constraints.
Taking into the consideration the goals of the Township and the Center Area School District, the demand and potential use for safe routes to schools, and the inventory an analysis recommendations were developed for improving walking and bicycling opportunities within the study area.

This Chapter sets forth the recommendations for establishing Safe Routes to Schools by identifying:

- required pedestrian and bicycling improvements, including opportunities to increase safety by establishing school zones
- design standards for the construction of the proposed improvements
- phased implementation plan for the construction of the proposed improvements
- specific implementation strategies for implementing the recommendations

Recommendations for Improving Pedestrian and Bicycle Flow through Intersections, and Recommendations for Pedestrian and Bicycle Facility Improvements

Each area of proposed improvements was then further evaluated to determine what specific improvements could be made to the particular area to improve pedestrian and bicycle activities in the area being evaluated. This evaluation was conducted by the consultant’s landscape architects in consultation with transportation engineers from the URS Corporation. The following narrative describes each location, provides background on the current conditions, and provides recommendations on how to mitigate the potential safety issues.

Before implementing the recommendations proposed herein, the final design of the proposed improvements must be completed and must be designed to in accordance with:

- PennDOT Publication 383, “Pennsylvania’s Traffic Calming Handbook” - Foe speed bumps
- PennDOT TC-8600 series Pavement Marking Standards and Publication 212, “Traffic Control Devices”
Poplar Drive between its intersections with Center Grange Road (SR 3012) and Baker Road.

**Background**

- Community College of Beaver County (CCBC) is planning to install a sidewalk along their property from Campus Drive to the Beaver County Vo-Tech School property.
- The posted speed limit is 20 miles per hour.
- The road width is 24 to 25 feet.
- Only one (1) street light typically exists at intersections with Poplar Drive.
- No parking is posted on the eastern side of Poplar Drive in the vicinity of the southern two (2) driveways to CCBC.

**Potential Safety Issues**

- The wide pavement and relatively good horizontal and vertical geometry may encourage drivers to travel above the posted speed limit of 20 miles per hour.
- There are no pedestrian sidewalks along Poplar Drive.
- Pedestrians crossing Poplar Drive between proposed sidewalk along its eastern side and streets providing access to housing development on its western side.
- Drivers on Poplar Drive observing pedestrians crossing the street.
- Stop signs located on Poplar Drive and intersections/driveways intersecting with Poplar Drive may not meet current reflectivity standards.
- The No Parking Signs on the eastern side of Poplar Drive near CCBC are not in conformance with the Pennsylvania Statues. Parking in this area may affect pedestrian access on the proposed sidewalk.

**Proposed Improvements**

- Install double yellow center lines and white edge line entire length (5,280 feet ±) of street and reduce lanes widths to 11'-0". Narrower lanes tend to reduce traveling speed of vehicles.
- Install speed humps with related warning signs (W17-1, W13-1, W11-2A, and W16-7P) and pavement markings at the following locations (should verify Average Daily Traffic on Poplar Drive and coordinate with Emergency Service providers to determine type of Speed Hump to be constructed):
  - Approximately midway between the intersections of Center Grange Road and Sherwood Drive/Driveway to Beaver County Intermediate Unit.
  - At the intersection of Sherwood Drive/Driveway to Beaver County Intermediate Unit – to be placed in conjunction with a crosswalk across Poplar Drive and will act as a raised crosswalk.
  - Approximately midway between the intersections of Sherwood Drive/Driveway to Beaver County Intermediate Unit and Community College Drive/Campus Drive.
  - At the intersection of Community College Drive/Campus Drive - to be placed in conjunction with a crosswalk across Poplar Drive and will act as a raised crosswalk.
Approximately midway between the intersections of Community College Drive/Campus Drive and Baker Road.

- Install painted crosswalks, stop lines, and new stop signs (R1-1) at the following locations:
  - Poplar Drive leg of intersection/southbound approach at its intersection with Center Grange Road (SR 3012) – Note: Municipality is responsible to maintain Stop Sign on Township Road intersection to a State Route.
  - Sherwood Drive leg of intersection/eastbound approach.
  - Beaver County Vo-Tech School north and south driveway legs on intersections/westbound approaches.
  - CCBC five (5) driveway legs of intersections/westbound approaches.
  - Community College Drive leg of intersection/eastbound approach.
  - Campus Drive leg of intersection/westbound approach.
  - Louise Street leg of intersection/westbound approach.
  - Poplar Drive leg of intersection/northbound approach at its intersection with Baker Road.

- Install one (1)* street light (luminary) (in addition to one [1] existing light) at the following intersections:
  - Center Grange Road (SR 3012)
  - Sherwood Drive/Beaver County Vo-Tech School south driveway
  - Community College Drive/Campus Drive
  - Louise Drive
  - Baker Road

* Lighting calculations will need to be conducted to determine actual number of luminaries needed.

- Install No Parking Signs (R8-3A and R7-7) in the vicinity of the Community College of Beaver County two (2) southern driveways. Distance of no parking restriction needs to be determined and posted in accordance with PennDOT and municipal regulations.

- Construct curb and sidewalk along the eastern side of Poplar Drive within existing road right-of-way. Does not require PennDOT approval as Poplar Drive is a Township roadway right-of-way.
The total cost of the recommended improvements along Poplar Drive are $869,433. At the time of this writing, the Community College of Beaver County has committed to funding the sidewalks along their property, from the Allied Health Building to the intersection of Poplar and Community College Drives.
Poplar Drive Looking towards Community College of Beaver County - Before

Poplar Drive Looking towards Community College of Beaver County - After
Baker Road

Baker Road between its intersections with Poplar Drive and Center Area High School.

Background

- The road width is 26 feet.
- The posted speed limit is 20 miles per hour.
- There is approximately six (6) feet of right-of-way between the road and the utility lines.
- Center Township Police Department suggests that this section of Baker Road be designated as a school zone. From URS preliminary investigations this may not be qualified to be a school zone since Baker Road does not abut the school property but enters it perpendicularly.

Potential Safety Issues

- The wide pavement and relatively good horizontal and vertical geometry may encourage drivers to travel above the posted speed limit of 20 miles per hour.
- There are no pedestrian sidewalks along Poplar Drive.
- Pedestrians crossing Baker Road from residences located on its southern side to the proposed sidewalk at the northern side.
- Drivers on Baker Road observing pedestrians crossing the street.
- Stop signs located on Baker Road and intersections intersecting with Baker Road may not meet current reflectivity standards.

Mitigation

- Install double yellow center lines and white edge line entire length (2,600 feet ±) of street. Suggest new pavement markings on entire length of Baker Road because of uniformity needed for drivers and for reducing lane widths proposed east of Poplar Drive. Reduce lanes widths to 11’-0” from its intersection with Poplar Drive to the Center Area High School Driveway (check Township regulations) to accommodate proposed sidewalk along the north side of Baker Road. Narrower lanes tend to reduce traveling speed of vehicles.
- Install painted crosswalks and related warning signs (W11-2 and W16-7P) at the following locations:
  - Baker Road leg of the intersection/eastbound approach with its intersection with Engle Street.
  - Baker Road legs of the intersection/eastbound and westbound approaches with its intersection with Roosevelt Drive.
  - Baker Road legs of the intersection/eastbound and westbound approaches with its intersection with Truman Drive.
- Install painted crosswalks, stop lines, and new stop signs (R1-1) at the following locations:
  - Roosevelt Lane leg of intersection/northbound approach.
  - Truman Lane leg of the intersection/northbound approach.
• Install one (1)* street light (luminary) (in addition to one [1] existing light) at the following intersections:
  o Engle Street
  o Roosevelt Lane
  o Truman Lane

  * Lighting calculations will need to be conducted to determine actual number of luminaries needed.

• Construct curb and sidewalk along the southern side of Baker Road within existing road right-of-way. Does not require PennDOT approval as Baker Road is a Township roadway right-of-way.

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Baker Road looking towards Center Area Middle / High School - Before

Baker Road looking towards Center Area Middle / High School - After
Intersection of Todd Lane / Chapel Road (SR 3005)/ McCracken Drive

Background

- Use ROW on south side of Todd Lane to install sidewalk. Use ROW on the east side of Chapel Road (SR 3005) to install sidewalk.
- Preliminarily, it appears that a crosswalk across Chapel Road (SR 3005) should be located near its intersection with Todd Lane because of drivers’ visibility of the intersection.
- The posted speed limit on Chapel Road (SR 3005) is 35 miles per hour.
- Chapel Road (SR 3005) has significant horizontal and vertical geometry that impacts drivers’ visibility through this corridor.
- Trees and shrubs within the right-of-way on Chapel Road (SR 3005) also impact drivers’ visibility through this corridor.
- PennDOT has previously installed raised pavement markers between the double yellow center line and shoulder rumple strips though this corridor that may indicate that some safety issues need to be addressed.
- An intersection warning sign does not exist on Chapel Road (SR 3005) northbound in advance of its intersection with McCracken Drive. An intersection warning sign does exist on Chapel Road (SR 3005) southbound in advance of its intersection with Todd Lane.
- Try to obtain accident (crash) information for Chapel Road (SR 3005) from PennDOT. Crash data needs to be reviewed prior to completing an evaluation of this location.

Potential Safety Issues

- The horizontal and vertical geometry on Chapel Road (SR 3005), combined with the posted speed limit, and trees and shrubs growing within the right of way, limits drivers view of this section of the roadway.
- Small street name signs exist for Todd Land and McCracken Drive which may be difficult for drivers on Chapel Road (SR 3005) to view. As a result of drivers trying to find a street in this vicinity, they may not notice pedestrians in a crosswalk crossing Chapel Road (SR 3005).

Proposed Improvements

- Reduce the posted speed limit on Chapel Road (SR 3005) in the vicinity of the project. Because Chapel Road (SR 3005) is classified as a collector road and not a local road, a traffic study will need to be conducted to justify the reduction. If requested, PennDOT may do the study and if lower speeds are justified, may install new speed limit signs. However, PennDOT may request the Township or the School District conduct the study.
- Trim the trees along Chapel Road (SR 3005) to improve drivers’ view of the road. Possibly the Township could coordinate with property owners/PennDOT and trim the trees (within and outside the right-of-way).
- Install overhead mounted pedestrian crossing signs (W11-2) with alternating flashing yellow warning lights mounted on a mast arm on Chapel Road (SR 3005) northbound and southbound entering into the Todd Lane/McCracken Drive area. Township will need to apply to PennDOT for a Traffic Signal Permit.
Install ground mounted pedestrian crossing signs at the crosswalk (W11-2 and W16-P) on Chapel Road (SR 3005). The Township or School District will need to apply for a Highway Occupancy Permit to install/maintain crosswalk pavement markings, sidewalk, and related signs within PennDOT right-of-way.

Install offset side road warning signs (W2-1-L) with attached a double advance street name warning sign (W16-8A) northbound and southbound Chapel Road (SR 3005) in advance of Todd Lane/ McCracken Drive.

Install one (1)* additional street light (luminary) at the Todd Lane intersection and the McCraken Road intersection with Chapel Road (SR 3005).

* Lighting calculations will need to be conducted to determine actual number of luminaries needed.

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Subtotal $28,100
Contingency @ 25% $7,025
Engineering @ 15% $4,215
Construction Inspection @ 15% $4,215
Total $43,555
Poplar Drive / Center Grange Road (SR 3012)/ K-2 Primary Center

**Background**

- The posted speed limit is 35 miles per hour.
- The travel lane width is approximately 12 feet.
- Roadway horizontal and vertical geometry is satisfactory.
- Drivers’ view of the crossing area on Center Grange Road (SR 3012) preliminarily appears to be adequate.
- A sidewalk could be located on the northern side of Center Grange (SR 3012); however, it is not in the construction budget for the new K-2 Primary Center to do so.
- Install a crossing from K-2 Primary School to Fred Taddeo Memorial Park at Justice Drive.
- Investigate establishing a school zone along Center Grange Road.
- Try to obtain accident (crash) information for Center Grange Road (SR 3012) from PennDOT. Crash data needs to be reviewed prior to completing the evaluation of this location.

**Potential Safety Issues**

- Pedestrian connectivity is not provided between the Primary Center and Fred Taddeo Memorial Park and the Center Township Municipal Complex located on the southern side of Center Grange Road.
- A small street name signs exists for Poplar Drive which may be difficult for drivers on Chapel Road (SR 3005) to view. As a result of drivers trying to find a street in this vicinity, they may not notice pedestrians in a cross walk crossing Center Grange Road (SR 3012).
- Need to coordinate with the K-2 Primary Center site development to ensure that any landscaping planted as part of the project does not affect drivers’ sight distance of pedestrians crossing on Center Grange Road (SR 3012).

**Proposed Improvements**

- Install overhead mounted pedestrian crossing signs (W11-2) with alternating flashing yellow warning lights mounted on a mast arm on Center Grange Road (SR 3012) eastbound and westbound entering into the Poplar Drive/Municipal Driveway area. The Township will need to apply to PennDOT for a Traffic Signal Permit.
- Install a ground-mounted pedestrian crossing signs at the crosswalk (W11-2 and W16-P) on Center Grange Road (SR 3012). The Township or School District will need to apply for a Highway Occupancy Permit to install/maintain crosswalk pavement markings, sidewalk, and related signs within PennDOT right-of-way.
- Install offset side road warning signs (W2-1-L) with attached a double advance street name warning sign (W16-8A) eastbound and westbound Center Grange Road (SR 3012) in advance of Poplar Drive/Municipal Driveway area. Note: The Municipal Driveway should have a street name in order to implement this mitigation.
- Install one (1)* additional street light (luminary) at the Poplar Drive intersection and the Municipal Driveway intersection with Center Grange Road (SR 3012).
* Lighting calculations will need to be conducted to determine actual number of luminaries needed.

- Construct pedestrian sidewalk along the length of the District property, paralleling Center Grange Road (SR 3012). A PennDOT Highway Occupancy Permit will be required for the sidewalk as it will be located in the Center Grange Road right-of-way.

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Center Area Middle / High School Campus and Todd Lane Elementary School

**Background**

- The District’s Health and Fitness Council developed a perimeter walking trail in 2006. The trail construction of the trail was funded with a Pennsylvania Advocates for Nutrition and Activity grant, and a Highmark Blue Cross / Blue Shield Challenge grant. The trail is approximately five feet wide, and is constructed with a wood mulch base.

- The potential exists to connect the Center Area Middle / High School Campus with Todd Lane Elementary School with a shared use path.

- The potential exists to connect the Center Area Middle / High School Campus with the Beaver County Community College with a shared-use path. From the Community College Campus trail users can reach the Beaver County Vocational Technical School, the Beaver Valley Intermediate Unit, the Center Area Primary Center and Fred Taddeo Memorial Park on the sidewalks being proposed for Poplar Drive.

**Potential Safety Issues**

- Middle and High School Students frequently walk between the Middle / High School Complex and Todd Lane Elementary School using the interior road connecting the two entities. During arrival and departure times at the schools, this road is heavily used by the school district’s buses and student drivers. Vehicles often exceed the speed limit and walking along this road is hazardous.

**Proposed Improvements**

- Construct a shared use path between the Community College of Beaver County, the Middle / High School Complex and Todd Lane Elementary School.

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Center Area Middle / High School Campus and Community College of Beaver County Connector

**Background**

- The potential exists to connect the Center Area Middle / High School Campus with the Beaver County Community College with a shared-use path. From the Community College Campus trail users can reach the Beaver County Vocational Technical School, the Beaver Valley Intermediate Unit, the Center Area Primary Center and Fred Taddeo Memorial Park on the sidewalks being proposed for Poplar Drive.

**Potential Safety Issues**

- Currently there are no non-motorized routes connecting the Middle / High School Campus and the Community College of Beaver County.

**Proposed Improvements**

- Construct a shared use path between the Middle / High School Complex and the Community College of Beaver County.

<table>
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<th>Item</th>
<th>Description</th>
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**Subtotal** $312,180

**Contingency @ 10%** $31,218

**Mobilization** $5,000

**Erosion & Sediment Control @ 4%** $12,487

**Engineering (Including NPDES and Stream Crossing Permits) @ 15%** $46,827

**Engineering (Including NPDES and Stream Crossing Permits) @ 15%** $46,827

**Total** $454,539
Design Standards for Recommended Improvements

School Zones Improvements

Whether located on a local road or within a state highway right-of-way, the Township must follow the requirements of PennDOT’s Publication 212, Official Traffic Control Devices, Subchapter F, Traffic Controls for School Areas. To begin the review and approval process, the Township must complete a PennDOT “Traffic and Engineering Study - School Zone Speed Limit” application, along with required attachments and submit it to the local PennDOT District’s Traffic Engineer. In addition to the application, the Township must provide the following:


b. School Route Plan

A School Zone is defined as a portion of a highway that at least partially abuts a school property or extends beyond the school property line that is used by students to walk to or from school or to or from a school bus pick-up or drop-off location at a school.

A 15 mile per hour school zone speed limit may be established in a school zone during the normal hours that walking students are arriving at or leaving school, under 75 Pa.C.S. 3365(b) (relating to special speed limitations).

To establish a school zone, the Township must be responsible for preparing and submitting a drawing showing the locations where students walk along or across roadways that are adjacent to school property, the hours that students are going to or from school and the proposed limits for the school zone to PennDOT for approval.

PennDOT is responsible for approving the establishment of all school zones, including the locations and hours of operation, except local authorities shall be responsible for approving school zones at the following locations:

1. On local highways when a municipality has received municipal traffic engineering certification under Chapter 205.

2. On state designated highways when a municipality has entered into an agreement with the Department thereby transferring to the local authorities the authority to install traffic control devices without specific Department approval.

3. On highways in cities of the first or second class, except not on expressways.

The duration of a 15 miles per hours school zone speed limit should be only long enough to include the time that walking students routinely arrive at or leave school.

A school zone speed limit shall be posted on official traffic control devices as follows:

1. At the beginning of the school zone speed limit, one of the following signs or groups of signs shall be posted on the right side of the roadway or over the roadway:

   a. A speed limit sign (R2-1) with the appropriate school zone speed limit, with a school panel (S4-3) mounted above the speed limit sign and when a flashing sign (S4-4) mounted below a speed limit sign (R2-1), with two flashing speed limit sign beacons.

   b. A speed limit sign (R2-1) with the appropriate school zone speed limit panel with school panel (S4-3) mounted above the speed limit sign (R2-1) and a restricted hours panel (R10-20A) mounted below the speed limit sign (r2-1).

   c. A school speed limit when flashing sign with a blank out “15” and flashers as illustrated in Traffic Signal Design Handbook, PennDOT Publication 149M.
2. An end of school zone sign (S5-2) shall be posted on the right side of the roadway to define the end of the school zone speed limit.

3. The limits of the school zone may extend beyond the school property lines to improve the sight distance or to encompass a school crosswalk, except that the length may not be greater than 1,600 feet.

A completed Traffic Engineering Study School Zone Speed Limit Application should be submitted to Mr. Todd Kravits, PennDOT District 11-0, 45 Thoms Run Road, Bridgeville, PA 15017, to begin a dialogue with PennDOT on the possibility of establishing school zones as recommended in this study.

**Shared Use Paths**

A shared use path (also commonly referred to as a multi-use path) is a facility that is typically removed from the vehicular transportation network, within its own easement or right-of-way, not the vehicular right-of-way. As its name suggests many different types of users may be present on a shared use path. Users generally include walkers, joggers, in-line skaters, and bicyclists. Based on this use classification the following standards are recommended.

The American Association of Transportation Officials have published “Guidelines for the Development of Bicycle Facilities”. In this publication they establish a recognized guidelines for the development of shared use paths.

**Shared Use Path Width and Clearance Requirements**

The AASHTO “Guidelines for the Development of Bicycle Facilities” recommends two directional shared use paths be constructed with a minimum width of ten feet. Additionally the guideline states a minimum of a two foot wide graded area with a maximum slope of 1:6 should be maintained adjacent to each side of the path. Where lateral obstructions; such as guiderails, utility poles, trees, and walls are present, three feet of clearance is recommended. Where slopes greater than 3:1 are present the guidelines recommend a minimum of five feet be maintained between the edge of the path and the top of slope, or a suitable barrier; i.e. hedgerow, fence, or other barrier; be placed at the top of slope. The recommended minimum vertical clearance to an obstruction is eight feet. However, the vertical clearance may need to be greater to accommodate maintenance and emergency vehicles.
**Shared Use Path Materials**

For optimum durability a shared use path should be constructed of bituminous paving. The path must also be constructed on stable, compacted soils to achieve maximum structural stability.

---

**Bituminous Paving**

*Not to Scale*

**Drainage**

Probably one of the most important aspects of a trail’s design, regardless of trail type, is that of drainage. Without sufficient drainage a trail is bound to fail within the first five years. Although drainage improvements are site specific, there are some general rules of thumb that should be followed. They include:

- The trail should have either a cross slope, or a running slope, that is 2%, with the surface draining towards the downhill side.
- When constructing trails on existing grades of greater than 30%, the trail should be crowned.
- Side swales and culverts prevent water from reaching the trail surface and give water on the trail surface a means to drain the water beneath the trail. Side swales convey water along the trails to a point where culverts can be placed to carry the water under the trail to daylight.
- Rolling dips help to prevent washouts on long running grades and steep grades. Rolling dips must be smooth and integrated into the grade of the trail. Their locations are dependent on the length of the trail above the dip, and the size of the watershed that drains onto the trail.

**Markings and Signage**

Generally, the following types of signs should be installed along shared use paths:

1. **Trailhead Signs** must invite users, be attractive, and provide trail users with an overall summary of the trail and rules for use of the trail.
2. **Mileage Markers** should be installed in either one-tenth mile or one-half mile intervals along the path. Mile markers assist emergency response personnel in locating users in need of assistance.
3. **Wayfinding Signs** should be installed at appropriate locations along the path to direct users to cultural features and points of interest along the path, and beyond the trail corridor. At a minimum wayfinding signs should be placed to direct users to schools, parks, municipal buildings, and other publicly accessible facilities and areas.
4. **Historical / Interpretive Signs** should be installed at appropriate locations to interpret points of interest. Interpretive signs can be of cultural, historical, or environmental interest.
5. Regulatory Signs as required where the shared use path crosses roads. Regulatory signs must conform to the U.S. Department of Transportation’s “Manual on Uniform Traffic Controls” and all Pennsylvania Department of Transportation requirements.

The design of all signs must take into consideration durability, maintenance requirements, and replacement costs.

No pavement markings are required for shared use paths.

**Drainage Structures and Utility Covers**

Drainage structures and utility covers located in or adjacent to a shared use path must be flush with the path, and bicycle safe. Grates with cross members spaced a maximum of four inches apart, on center, are considered bicycle safe.

**Sidewalks**

Sidewalks are the portion of the street or highway right-of-way designed for the preferential or exclusive use by pedestrians.

**Locations**

The County must work with local municipalities to require sidewalks as recommended by the Federal Highway Administration’s publication titled “Priorities and Guidelines for Providing Places for Pedestrians to Walk Along Highways and Streets”, in their land development and subdivision ordinances.

**Construction**

Sidewalks shall be constructed in accordance with the recommendations herein, and in accordance with the requirements of the Americans with Disabilities Act.

Where sidewalks are installed they should be separated from the roadway with a concrete curb, minimum height six inches above street surface.

**Widths**

Sidewalks shall be constructed in accordance with the recommendations herein, and shall be in accordance with requirements of the Americans with Disabilities Act. This Act requires a clear width of sixty inches. The width may be reduced to thirty-six inches in the following instances.

1. A wider width is impossible.
2. The narrow width continues for as short a distance as possible.
3. Passing spaces are provided at a minimum interval of two hundred feet.

**Materials**

Sidewalks shall be constructed with reinforced concrete, with a psi strength of 3,500. Expansion joints should be installed at not more than twenty feet on center, and control joints should be constructed at intervals of five feet on center. The walking surface shall receive a non-slip broom finish to provide the slip resistant surface required by the Americans with Disabilities Act. This will provide a durable surface with an approximate life span of twenty years.
Curb Ramps

Curb ramps are required to provide access to sidewalks that are elevated from the surrounding surfaces. Curb ramps should be installed at intersections, perpendicular to the roadway. Diagonal curb ramps should be avoided because they place users in positions vulnerable to turning traffic. Additionally, a pedestrian crossing at a diagonal ramp takes more time to cross the roadway than does a pedestrian crossing perpendicular to the road.

Curb ramps shall be a minimum of forty-eight inches wide, have a slope of 8.33% or less, have side slopes with a slope of less than ten percent. It is preferable to have a minimum clear walk width of thirty-six inches behind the ramp so pedestrians avoid traveling over the side slopes when walking perpendicular to the ramp.

Where it is not possible to have a minimum clear walk width of thirty-six inches behind the ramp, parallel curb ramps should be constructed.

The ramp slope should be perpendicular to the curb to avoid an uneven cross slope that creates problems for wheelchair users because all four wheels will not touch the ground.

Crosswalks

Crosswalks inform the motorist of pedestrian activity across the roadway, and indicate to the pedestrian the desired location to cross a roadway.

Locations

Local land development and subdivision and zoning ordinances must require crosswalks in all instances where sidewalks continue on the opposite side of a roadway and vehicular traffic is controlled by either a stop sign or traffic signal. Mid-block crosswalks should not be permitted unless adequate site distance exists to allow a pedestrian to cross the street at a speed of 3.5 feet per second.

Although the MUTCD does not provide a specific recommendation for crosswalk striping, it is generally regarded that more paint provides more protection. Although this has not been substantiated, it may be that the greater the amount of paint, the greater the perceived protection on the part of the pedestrian and the stronger message to the motorist.

Local ordinances must require a PennDOT approved crosswalk pattern.
Traffic Calming Measures

During the course of this study many individuals expressed concern about the speed of traffic on the existing roadways. Although the posted speed limits on the roadways in the study area appear to be reasonable it is evident that many drivers do not obey the posted speed limits. In addition, the design and geometry of some of the roads is such that higher traveling speeds are encouraged, not discouraged.

Two good examples of this situation are Baker Road and Poplar Drive. Baker Road has wide travel lanes, and a grade that promotes higher travel speeds. The posted speed limit on Baker Road is 20 miles per hour. However, it is easy to feel comfortable traveling on the road at speeds of 30 to 35 miles per hour. Similarly, Poplar Drive has a posted speed limit of 20 miles per hour. However, the wide travel lanes, straight alignment, and long sight distances promote higher traveling speeds.

Over the years, many good examples of traffic calming devices have been developed. In 2001 the Pennsylvania Department of Transportation published “Pennsylvania’s Traffic Calming Manual”. The manual indicates traffic calming measures are mainly used to address speeding and high cut-through traffic volumes on neighborhood streets. These issues can create an atmosphere in which non-motorists are intimidated, or even endangered, by motorized traffic. The role of physical measures in traffic calming has been emphasized because they are “self-policing”. This means that traffic calming measures, such as speed humps and traffic circles, have the ability to slow motor vehicles in the absence of enforcement. On the other hand, traffic control devices, such as turn prohibition signs, weight limits, and one-way streets, depend upon the level of police enforcement and the willingness of motorists to comply with the posted restrictions to be effective. Therefore, the use of traffic calming measures can often lead to a more certain accomplishment of the neighborhood’s goals.

The a few traffic calming measures recommended for use in the Safe Routes to School study area are speed humps (aka speed tables), a traffic circle and / or a raised intersection.

**Speed Humps** (Speed Tables)

Many community representatives have associated speed bumps, with speed humps. Speed bumps were constructed in years past as a traffic calming measure. However, a speed bump is designed for speeds of 5 mph or less, are jarring and not suited for public roadways. To the contrary, speed humps have been used as an effective traffic calming measure and are a PennDOT approved measure for calming traffic.

A speed hump is a raised surface on the roadway that is typically 3 to 4 inches in height, and 12 to 20 feet in length. Speed humps are by far the most popular traffic calming measure in the United States, likely because they are effective in reducing speeds at minimal cost. There are two common designs. The Watts speed hump (designed by the Transport and Road Research Laboratory in Great Britain) is a parabolic hump 12 feet in length. This model was endorsed by ITE in Guidelines for the Design and Application of Speed Humps, June 1997. The Seminole County speed hump is the most popular alternative to the Watts hump. Designed by Seminole County, Florida, this hump is 22 feet in length with 6-foot ramps on either end of a 10-foot flat top. This type of speed hump design is also referred to as a “speed table”.

![Image of Pennsylvania’s Traffic Calming Handbook](image-url)
PennDOT’s Handbook indicates that both humps are appropriate for use on Pennsylvania roads. However, due to their different profiles, they are effectively employed in different settings. The Watts hump is recommended only for local streets with volumes less than 3,500 ADT and posted speeds of 30 mph or less. In addition, it is not recommended for major emergency service routes. The Seminole County hump can be used in a greater variety of situations. This type of hump can be used on collector roads as well as local roads. It is appropriate for streets with volumes up to 6,500 ADT. Many jurisdictions also permit the use of Seminole speed humps on emergency response routes.

Because traffic volumes are low on both Baker Road and Poplar Drive, we recommend the use of the Watts Speed Hump.

Uses:

- Within typical residential travel speeds, humps create a gentle rocking motion encouraging motorists to slow to a safe speed at or below the speed limit.
- The design speed is determined by the dimensions of the speed hump.
- The Watts hump is designed to slow vehicles to 15 to 20 mph at each hump and 25 to 30 mph in between properly spaced humps. Studies have demonstrated that Watts humps can reduce speeds by about 8 mph in the vicinity of humps. Volumes are reduced, on the average, by about 18 percent.
- Humps should be placed 250 to 600 feet apart. One study showed that placing Watts speed humps at intervals of 275 feet resulted in 85th percentile speeds of 25 mph; intervals of 550 feet resulted in 85th percentile speeds of 30 mph.
- Normally, no hump should be placed within 150 feet of an unsignalized intersection or 250 feet of a signalized intersection.
Speed humps should not be used on curves unless the radius is greater than 300 feet.

Humps should not be installed on streets with a grade exceeding 8%.

Speed humps should extend across the roadway from curb to curb.

Humps usually have a parabolic cross section. A sinusoidal cross section is harder to construct but may better facilitate snow removal.

Although speed humps may create noise from vehicles passing over them, the overall noise levels on the street may be reduced due to lower vehicle speeds.

Traffic may divert to other parallel streets that are not traffic calmed.

In areas with snow removal problems, a measure such as a flexible delineator post may be needed at each hump to alert snowplow operators to lift their blades.

**Signing and Markings:**

- A Speed Hump Warning Sign - PennDOT’s Publication 236M (W8-17) Install either 100 feet in advance of speed humps, at the hump, or in both locations. Where multiple humps exist on one street, one sign before the first hump encountered, labeled “SPEED HUMPS,” may be sufficient. It is also recommended that the “Speed Hump” sign be accompanied by an “Advisory Speed Plaque” (W13-1). The indicated speed depends upon the design of the individual speed hump.

Locally, Findlay Township in Allegheny County has incorporated speed humps successfully into its Land Development and Subdivision requirements and review process. Speed humps are required on all low volume and low speed residential roads.

**Traffic Circles**

Traffic circles are raised islands located in the center of an unsignalized intersection. All traffic must negotiate the circle to circulate in a counterclockwise direction. When yields signs are used on each approach, traffic must yield to vehicles within the circle.

**Uses:**

- Slows vehicles due to horizontal deflection, and through their ability to break up a line of sight.
- On average speeds are reduced 6 to 8 miles per hour in the vicinity of traffic circles.
- Depending on configuration the traffic circle may not be round.
- Turning analysis should be completed to ensure that the design vehicle can negotiate the circle. A mountable concrete apron, 2 to 4 feet wide may be used to accommodate emergency service vehicles, trucks, and buses.
- Drainage works best if the cross section slopes away from the circle, despite the fact that this creates a reverse superelevation.
- Traffic circles may require additional lighting.
- Provisions should be made for snow and ice removal.
- It is recommended that on street parking be prohibited for 30 feet from the intersection.

**Signing and Markings:**

- The use of the advance traffic circle warning sign (W6-4) with the appropriate advisory speed sign (W13-1) is recommended in advance of the first traffic circle encountered on each street.
- Delineation and the appropriate traffic circle sign (R22-1) should be installed on each face of the circle.
Raised Intersections

Intersections, including crosswalks, which are raised three to six inches above street level with long ramps included in all approaches. Raised intersections are commonly found in commercial districts and other areas of high pedestrian traffic.

Uses:

- Reduces vehicle speed on all approaches.
- Decreases conflicts between vehicles and pedestrians by better demarcating crossing areas and elevating pedestrians above the street.

Signing and Markings:

- Advance warning signs should be posted but there is no standard sign for raised intersections in the MUTCD. Therefore, in Pennsylvania, it is recommended that the raised intersection pedestrian crossing sign (W11A-3) be used.

Traffic Calming within PennDOT Right-of-Ways

Any proposal to install traffic calming measures within a PennDOT Right-of-Way, has to be approved by the local PennDOT District office. PennDOT’s Traffic Calming Handbook describes a four step process for preparing a proposal for consideration by the local PennDOT District:

1. Submittal of Request for Study along with Supporting Data
2. Traffic Calming Plan Development
3. Approval Process
4. Installation and Evaluation
LEGAL FEASIBILITY

The proposed Center Safe Routes to Schools routes are proposed to be located either in existing public road right-of-ways, or on property held by the project participants: Center Township, Center Area School District, Beaver County Community College, Beaver County Intermediate Unit, or the Beaver County Vocational Technical School.

Where routes are proposed within existing public roadways, such as on Poplar Drive and Baker Roads, neighboring property owners may feel impacted in the improvements are located within the existing road right-of-way and outside of the existing pavement. Although the Township has the right to develop within this right-of-way, residents have adopted these areas a part of their property. In many cases these areas are manicured lawns or landscape planting areas. Therefore as the projects progress, it is imperative that the Township and School District actively communicate with the affected property owners. Given the desire to reduce road widths along portions of the routes to reduce vehicular speeds the majority of the routes should be located close to the existing pavement extents.

Some of the improvements are proposed within and/or along PennDOT right-of-ways. Therefore, before the recommendations for improvements along PennDOT roads as proposed herein, final design of the proposed improvements must be designed in accordance with:

- PennDOT Publication 383, “Pennsylvania’s Traffic Calming Handbook” - Foe speed bumps
- PennDOT TC-8600 series Pavement Marking Standards and Publication 212, “Traffic Control Devices”

As the design progress is begun, the Township should consult with PennDOT representatives to notify PennDOT of the Township’s intent and to discuss design particulars. PennDOT will require the Township to acquire PennDOT Highway Occupancy Permits for all work within the right-of-way, and may require an occupancy agreement depending on the type of improvements proposed.

As noted earlier in this study the establishment of school zones, either on PennDOT or municipally owned roadways also requires PennDOT’s review and approval. All proposed school zones must comply with PennDOT’s Publication 212, Official Traffic Control Devices, Subchapter F, Traffic Controls for School Areas.

Because many of the safe routes to schools are proposed for existing road right-of-ways special consideration must be given to how the proposed improvements will affect drainage and maintenance of the roadway. The final design of the improvements must ensure the roadways are not impacted negatively, or do not create safety hazards.
For purposes of projecting construction costs the proposed Safe Routes to School were segmented into logical phases of construction. These phases include:

- Poplar Drive
- Baker Drive
- Todd Lane / McCracken Drive / Chapel Road
- Center Grange Road / Poplar Drive / Primary Center
- Center Area Middle / High Schools / Todd Lane Elementary School
- Center Area Middle / High Schools to Community College of Beaver County

Unit prices for construction activities were assigned based on the consultant’s experience with trail construction costs in 2008. These costs are based upon publicly bid projects that pay prevailing wage rates. In addition, the cost projections take into account the following:

- The condition of the corridor at the time of construction will be similar to its condition in 2008.
- Property acquisition costs have not been incorporated into the opinion of probable construction costs.
- The costs are based on 2008 construction figures. Should projects be constructed in future years an additional 4% per year should be factored into the costs for inflation.
- Projects will be bid through a competitive bidding process utilizing state or federal prevailing wage rates.
- Opinions of probable construction costs should be confirmed / revised upon completion of preliminary design.
- For budgetary purposes 25% of the estimated construction costs has been included in the projections to provide a contingency to address design revisions, unknown, and / or unforeseen conditions that may arise during design and construction.

The opinions of probable construction costs presented herein are liberal in nature and assume the following costs that may, or may not be required depending on the requirements of those funding the project:

- Costs also reflect the potential for completing the projects with Pennsylvania Department of Transportation Enhancement funding. From past experience we know this adds approximately fifteen to twenty percent to the overall project cost.
- Survey of easement and preparation of topographic survey.

Opinions of probable construction costs were presented for each segment in the earlier Recommendations Chapter. The following is a summary of those costs:
### Summary of Construction Costs

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<td>Baker Road</td>
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<td>Todd Lane / Chapel Road / McCracken Drive</td>
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<tr>
<td><strong>Total</strong></td>
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Funding opportunities that may be available to fund a portion of the work proposed herein includes the following sources.

### FEDERAL SAFE ROUTES TO SCHOOL PROGRAM ADMINISTERED BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

Source: [www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/SRTSHomepage?OpenFrameset](http://www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/SRTSHomepage?OpenFrameset)

#### BACKGROUND

The Federal Safe Routes to School (FSRTS) Program was authorized in SAFETEA-LU and provides $612 million nationwide for projects that enable and encourage children to walk or bicycle to school. The funds are allocated to the states based on K-8 enrollment. Pennsylvania’s share for FFY 2005-2009 is just over $21 million. The funding does not lapse and remains until expended.

#### Summary of Federal Program Requirements

**Program Funding**
- The program is 100% federal and no local match is required
- The funding covers all project phases – not just construction
- SAFETEA-LU requires that each state spend between 10-30% of their FSRTS funding on “non-infrastructure” – actions that encourage children to walk or bicycle to school

**Project Location and focus**
- Projects must be located within two miles of a school with students in kindergarten through eighth grade (K-8). A school with at least one of these grades (i.e. a high school that contains grades 8-12) is eligible.
- The projects must primarily benefit children in grades K-8 and be constructed only on direct walking routes – corridors used by students to travel directly to and from school from a residential area. Trails to parks, libraries or other after school facilities are not eligible.
- All projects are to incorporate the “The Five Es of Safe Routes To School”: education, encouragement, enforcement, evaluation, and engineering. The first four Es are considered “non-infrastructure activities”
ELIGIBLE PROJECT SPONSORS

• Schools
• School Districts
• Municipalities
• County governments
• Municipal Planning Organizations (MPOs) and Rural Planning Organizations (RPOs)
• Non-Infrastructure - The Pennsylvania Advocates for Nutrition and Activity (PANA) will be the point of contact for non-infrastructure questions
• PANA Resources

SUMMARY OF FSRTS PROGRAM AND APPLICATION PROCESS IN PENNSYLVANIA

The first FSRTS infrastructure round opens May 5th through August 1, 2008. A total of $12,649,000 is available for infrastructure projects. Applicants will be asked to describe their non-infrastructure activities on the FSRTS application. Applications will be available on the FSRTS website in Word format and will be submitted electronically, like the TE application.

PROJECT SCORING AND SELECTION

The funding is held in a statewide line item and projects will be selected by a central selection committee. The project selection committee consisting of members from PennDOT, the Department of Health, the department of Education, DCNR, and PANA. Projects will be scored based on infrastructure and non-infrastructure merits. Districts and Planning Partners will be asked for input on projects proposed in their region.

PENNDOT DISTRICT ROLES

• It is anticipated that the projects will move through the Districts, similar to the TE process. However, the number of projects elected will be limited, given the $12 million in funding available this round. Some of the anticipated District roles include (but are not limited to) the following:
  • Assist project sponsor with general design standards or regulatory questions
  • Estimate project cost
  • Initiating a kickoff meeting to discuss project requirements and the implementation process
  • Work with sponsors through all phases of the project
  • Process project invoices

Successful Grant Writing Strategies - Keys to Success

• Include community stakeholders from the beginning and solicit their input.
• Plan for your project well in advance of grant deadlines. For federal grants or other large dollar grants, consider allowing yourself at least several months to complete the application.
• Develop a vision and mission around your project.
• Follow the grant guidelines very carefully. Make sure your proposal is complete, compliant, and persuasive.
• Determine ways to make the project sustainable after the grant period.
• Find existing programs in your community with which you can partner for infrastructure, resources, funding, and expertise.
• If you are seeking funds from a foundation or corporate giving source, contact the grant officer before to developing your proposal.
• Use personal contacts whenever possible with foundations and corporate giving sources.
• It is anticipated that Planning Partners will assist project sponsors with questions about design standards, the Federal Aid Highway process, estimating project cost and other items related to project design or funding.

**PROGRAM CONTACTS**

For more information on the FSRTS program processes or application, please contact Chris Metka.

Chris Metka  
PA Safe Routes to School Coordinator  
PennDOT Program Center  
cmetka@state.pa.us  
717-787-8065

For more information on non-infrastructure activities or PANA, Please contact Robyn Ricketts.

Robyn A. Ricketts, MPA  
Active Communities Director  
Penn State Hershey Center for Nutrition & Activity Promotion  
Pennsylvania Advocates for Nutrition and Activity (PANA)  
rricketts@psu.edu  
717-531-1440 x3

**PENNSYLVANIA REDEVELOPMENT ASSISTANCE CAPITAL IMPROVEMENTS PROGRAM (RCAP)**  
Source: www.budget.state.pa.us/budget/lib/budget/rapmat/applicationhandbook.pdf

The Pennsylvania Redevelopment Assistance Capital Improvements Program is a Commonwealth grant program administered by the Office of the Budget for the acquisition and construction of regional economic, cultural, civic, and historical improvements projects.

The Redevelopment Assistance Capital Program (RCAP) is a Commonwealth grant program administered by the Office of the Budget for the acquisition and construction of economic, cultural, or civic improvement projects. The RCAP Grant is operated on a reimbursement basis as expenses are incurred and paid. Reimbursements are generally accumulated over a 36-month period, although a shorter period can be requested.

A Redevelopment Assistance Capital Project must have a total cost of:

- $1,000,000 or more in second class A through eighth class counties
- $5,000,000 or more in first and second class counties

RCAP funds are limited, and many compete for them. Therefore, RACP projects must have strong legislative support, and must be approved by the Governor’s office. If the Township desires to pursue RCAP funding, we strongly recommend the Township discuss the potential for RCAP funding for the Center Township Safe Routes to Schools with their Pennsylvania legislative delegation.
Current members of the Pennsylvania legislative delegation who serve the study area include:

**Pennsylvania Senate**

- Honorable Gerald J. LaValle  
  Pennsylvania Senate - District 47  
  488 Adams Street  
  Rochester, PA 15074-1940  
  (724) 774-0444

**Pennsylvania House of Representatives**

- Honorable Vince Biancucci  
  Pennsylvania House District 15  
  214B Pleasant Drive  
  Aliquippa, PA 15001  
  (724) 857-2220  
  Fax: (724) 857-2224

**PROJECT ELIGIBILITY**

By law, projects seeking Redevelopment Assistance Capital Funding must comply with the following:

1. **DEFINITION: ECONOMIC DEVELOPMENT PROJECTS WITH CULTURAL, HISTORIC, OR CIVIC SIGNIFICANCE.**

   Redevelopment Assistance Capital Projects are primarily Economic Development Projects, authorized in the Redevelopment Assistance section of a Capital Budget Itemization Act, have a regional or multi-jurisdictional impact, and generate substantial increases in employment, tax revenues or other measures of economic activity. Included are projects with cultural, historic, or civic significance.

   Given the current economic conditions throughout portions of Pennsylvania, it will be the priority of the Rendell Administration to focus limited available capital funding on those projects that display significant potential for improving economic growth and the creation of jobs. As part of your request please include sufficient information and documentation indicating the project’s estimated economic impact and the potential for job creation. All applications shall thoroughly discuss the regional and/or multi-jurisdictional economic impact of the project. See page 12 of the Application Materials Handbook for a list of helpful indicators.

   Redevelopment Assistance Capital Projects are State funded facilities that cannot obtain PRIMARY funding under other State or Federal programs. Projects that can normally obtain primary funding from PADOT, PENNVEST, the Department of Community and Economic Development, or other state agencies are generally restricted from participating in the Redevelopment Assistance Capital Program.
2. FEDERAL TAX-EXEMPT BOND ELIGIBILITY

Redevelopment Assistance Capital Projects must be eligible for tax-exempt bond funding under existing federal law requirements. The Applicant must demonstrate and document that the project qualifies for financing with federally tax-exempt bonds. Applicants will be required to comply with procedures to maintain the tax-exempt status of bonds issued to finance the project.

3. PROJECT COST REQUIREMENTS

A Redevelopment Assistance Capital Project must have a total cost of:

- $5,000,000 or more for projects in first and second class counties.
- $1,000,000 or more for projects in second class A through eighth class counties.
- Exceptions Allowing Projects of $1,000,000 or more. Exceptions to the $5,000,000 project cost threshold are permitted if any of the following situations apply to a project, in which case, the total project cost threshold drops to $1,000,000 or more.
  - Financially Distressed Municipality. The project is in a municipality designated as “financially distressed municipality” under the provisions of the act of July 10, 1987 (P.L.246, No. 47), known as the “Municipalities Financial Recovery Act.”
  - DCED Scoring. The project is in a municipality that is identified at the time of application, by the Department of Community and Economic Development, under the Department’s early warning system for a potentially distressed community, and scores at least 1/2 standard deviation above the mean.
  - Enterprise Zone. The project is in a municipality that has part or all of an enterprise zone within the municipal boundaries.

4. MATCHING FUNDS - NON-STATE PARTICIPATION

General Requirements

A Redevelopment Assistance Capital Project must have matching funds that comply with the following:

- At least 50% of the project cost must be match (non-state) participation.
- At least 1/2 of the match (non-state) participation must be secured funding at the time of application.
- Sources of matching funds must be documented at the time of application with identifiable and firm commitments from all sources.
- Sources of match funds can be local, private, land, and/or federal.
- The only non-cash, non-state match permitted is land or fixed assets which have a substantial useful life and are directly related to the project.
- Funds from other state sources, including legislative sources may not be used as match.
**Reimbursable Cost Categories**

The following costs are eligible match costs and can be reimbursed with Redevelopment Assistance Capital Funds.

- **Construction.** The primary use of Redevelopment Assistance Capital Funds should be the reimbursement of construction costs.
- **Interest During Construction.** Interest costs paid as a result of the use of interim or bridge financing for the project can be reimbursed from Redevelopment Assistance Capital Funds.
- **Permits.** Costs for the acquiring of permits needed for construction of the project can be reimbursed from Redevelopment Assistance Capital Funds.
- **Land.** If land is purchased for the project and a certified appraisal is provided, Redevelopment Assistance Capital Funds may be used to reimburse the costs for the land acquisition. The appraised value may include permanent improvements.
- **Other.** Other costs that can be reimbursed with Redevelopment Assistance Capital Funds can include work related to the abatement of hazardous materials, acquisition costs.

**Non-Reimbursable Cost Categories**

The following costs are eligible match costs, but are not eligible for reimbursement with Redevelopment Assistance Capital Funds. They must be paid from non-state matching funds.

- **Future Physical Maintenance & Operation.** A portion of any funds reserved for future physical maintenance and operation of facilities may be included as a part of the 50% match (non-state) participation, provided such funds do not exceed 15% of the total project cost. These reserved fund must have legally binding documentation explaining the intent, design, and operation of the dedicated fund. Salaries cannot be paid from reserve funds.
- **Administrative Costs.** Any fees for the administration of the project, whether by the applicant’s staff or by contract must be paid from non-state matching funds.
- **Legal Fees Costs.** Any fees for the services of lawyers or solicitors must be paid from non-state matching funds.
- **Financing/Accounting Costs.** Any fees for financing and accounting services must be paid from non-state matching funds.
- **Architectural/Engineering Fees.** Any fees for application preparation, project administration, or other professional services incurred for the planning, design, and construction of projects must be paid from non-state matching funds.
- **Federal Funds.** Eligible costs that are paid for with Federal Funds are eligible, non-state match.

5. **INELIGIBLE PROJECTS**

Projects that are generally funded through other state and federal programs are not eligible for Redevelopment Assistance Capital Funds. Examples of those funding sources and projects are as follows:

- Projects funded by PADOT:
  - Highways
  - Vehicular Bridges
• Projects funded by PENNVEST:
  - Drinking Water Facilities
  - Waste Water Facilities
• Other State funded Projects:
  - Housing Units

SAFETEA-LU AND SURFACE TRANSPORTATION PROGRAM FUND
Agency: Locally administered through the Pennsylvania Department of Transportation

Program Goals: Primary source of federal funding for greenways and trails, SAFETEA-LU has provided millions of dollars in funding for bicycle and pedestrian transportation projects across the country. Many sections of SAFETEA-LU support the development of bicycle and pedestrian corridors. The Pennsylvania Department of Transportation can utilize funding from any of these subsets of SAFETEA-LU and should be contacted for further details.

Use of Funds or Support: Safety and transportation enhancements.

Contact: Doug Smith
Transportation Enhancement Coordinator
Southwestern Pennsylvania Commission
Regional Enterprise Tower
425 Sixth Avenue, Suite 2500
Pittsburgh, PA 15219
412-391-5590

HOMETOWN STREETS / SAFE ROUTES TO SCHOOLS
Source: www.dot.state.pa.us/penndot/Bureaus/CPDM/Prod/Saferoute.nsf

Agency: Locally administered through the Pennsylvania Department of Transportation

Program Description: This program is intended to improve the quality of life of our communities. The Department of Transportation recognizes that streets that run through the centers of our cities and towns provide vital connections. Sprucing up those streets will bring people back to our town centers and promote healthy living. PennDOT can also contribute to the safety of our children by making improvements to the routes children take to school. This program has two primary objectives:

• To encourage the reinvestment and redevelopment of our downtowns, and
• To establish, where feasible, safe walking routes for our children to commute to school and to promote healthy living.

Interagency Coordination: This program will be managed by PennDOT. However, other agencies have made and will make valuable contributions to downtown revitalization. Agency collaboration and coordination of these projects is critical to our collective success. The following agencies will play a vital role in this program:

• Metropolitan Planning Organizations and Rural Planning Organizations
• Department of Community and Economic Development
• Department of Conservation and Natural Resources
• Federal Highway Administration
• PENNVEST
The Safe Routes to School Program is designed to work with both school districts and pedestrian and bicycle safety advocates to make physical improvements that promote the safe walking and biking passages to our schools. Collectively, these efforts would save on busing costs and promote a healthy lifestyle for our children. In addition, some funding may be used for pedestrian education efforts.

Matching Funds: This program utilizes federal funds. There is a matching fund requirement associated with their use. The match is 20% of the total project costs. Funding from other state agencies will be subject to any and all limitations imposed by the source of such funding.

Contact: Doug Smith  
Transportation Enhancement Coordinator  
Southwestern Pennsylvania Commission  
Regional Enterprise Tower  
425 Sixth Avenue, Suite 2500  
Pittsburgh, PA 15219  
412-391-5590

COMMUNITY CONSERVATION PARTNERSHIPS PROGRAM  
Agency: Pennsylvania Department of Conservation and Natural Resources  
Program Goals: Develop and sustain partnerships with communities, non-profits, and other organizations for recreation and conservation projects. The Department’s Bureau of Recreation and Conservation is responsible for facilitating the majority of these partnerships through technical assistance and grant funding from the Community Conservation Partnerships Program.

Program Restrictions: See DCNR grant application manual for Community Conservation Partnerships Program, as program restrictions vary by type.

Contact: Kathy Frankel  
Pennsylvania Department of Conservation and Natural Resources  
Southwest Region Office  
1405 State Office Building  
300 Liberty Avenue  
Pittsburgh, PA 15222  
412-880-0486  
kfrankel@state.pa.us

LAND AND WATER CONSERVATION FUND GRANTS  
Agency: Locally administered by Pennsylvania Department of Conservation and Natural Resources  
Program Goals: This source was established to provide park and recreation opportunities. Money comes from the sale or lease of non-renewable resources, primarily offshore oil and gas leases and surplus federal land sales. State-side LWCF grants can be used to acquire and build park and recreation facilities. State-side LWCF funds are annually distributed by the National Park Service through the Pennsylvania Department of Conservation and Natural Resources. Communities must match grants with 50% of the costs through in-kind services or cash.
All project grants must be exclusively for recreational purposes.

Use of Funds or Support: Plan and invest in existing park system.

Contact: Kathy Frankel  
Pennsylvania Department of Conservation and Natural Resources  
Southwest Region Office  
1405 State Office Building  
300 Liberty Avenue  
Pittsburgh, PA 15222  
412-880-0486  
kfrankel@state.pa.us

NATIONAL RECREATIONAL TRAILS FUNDING ACT  
Agency: Locally administered by the Pennsylvania Department of Conservation and Natural Resources

Program Goals: Provides funds to develop and maintain recreational trails for motorized and non motorized recreational trail users.

Program Restrictions: A component of SAFETEA-LU, matching requirements for the Pennsylvania Recreational Trails Program Grants are 80% federal money, up to a maximum of $150,000, and 20% non-federal money. However, acquisition projects will require a 50/50 match.

Use of Funds or Support: Department must distribute funding among motorized, non motorized, and diverse trail use as follows: 40% minimum for diverse trail use, 30% minimum for non motorized recreation, and 30% minimum for motorized recreation. The Commonwealth may also use up to 5% of its funds for the operation of educational programs to promote safety and environmental protection related to the use of recreational trails.

Contact: Kathy Frankel  
Pennsylvania Department of Conservation and Natural Resources  
Southwest Region Office  
1405 State Office Building  
300 Liberty Avenue  
Pittsburgh, PA 15222  
412-880-0486  
kfrankel@state.pa.us

SINGLE APPLICATION GRANTS  
Agency: Pennsylvania Center for Local Government Services, Department of Community and Economic Development

Program Goals: Through one application form, applicants can apply for financial assistance from the Department’s various funding sources.

Program Restrictions: Applications can be submitted to 100% funding for project. However, applications that show match in dollars or services are more likely to be awarded. Funds are allocated annually and distributed quarterly. Applications can be submitted at any time.

Use of Funds or Support: This program funds a wide variety of municipal projects, including recreational facility improvements and development.
Success of application is based on whether the project is supported by state legislators for the municipality.

PENNSYLVANIA ADVOCATES FOR NUTRITION AND ACTIVITY (PANA)

Pennsylvania Advocates for Nutrition and Activity is a statewide organization supported by a coalition of more than five public, private, academic, professional and volunteer groups, working to promote policies and environments that support healthy eating and activity. PANA is housed at Penn State University.

PANA was established by the Pennsylvania Department of Health and supported by funding from the Centers for Disease Control and Prevention. PANA facilitates the implementation of Pennsylvania’s Nutrition and Physical Activity Plan to Prevent Obesity and Related Chronic Diseases, published in 2003 by the Pennsylvania Department of Health. PANA officially began operating in January 2003.

The mission of PANA is to build state-wide capacity for developing an environment to support and promote active lifestyles and healthy food choices through collaboration and coordinated communication.

PANA’s goals include:

- Serve as a communication clearinghouse and statewide resource for nutrition and physical activity
- Facilitate the implementation of the Pennsylvania’s Nutrition & Physical Activity Plan
- Assess effects of statewide PANA related activities.

Using the Pennsylvania Nutrition and Physical Activity Plan as a guide, PANA’s efforts include outreach and education, advocacy, and evaluation in three priority areas: Community, School, and Healthcare Settings.

www.panaonline.org

The United States Surgeon General has documented the chronic problem of obesity among Americans, and has issued several tools containing objectives, guidelines and recommendations on ways to address the problem. These have included the Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity (2001); Healthy People 2010; and the Guide to Community Preventive Services – Physical Activity Recommendations.

In their Pennsylvania Nutrition and Physical Activity Plan, PANA has embraced the overarching principles of the Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity as key concepts. These include:

- Promote the recognition of overweight and obesity as major public health problems.
- Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
- Identify effective and culturally appropriate interventions to prevent and treat overweight and obesity.
- Encourage environmental changes that help prevent overweight and obesity.
- Develop and enhance public-private partnerships to help implement this vision.
Center Township Safe Routes to Schools Vision

It is a warm fall day and our children are excited to go to school. Many folks have worked hard to provide our family with safe walking routes to our schools, and this year our children, Hannah and Zach, are excited because they can walk to school from our Sherwood Drive neighborhood. At 7:00 am Zach, our seventh grader, leaves the house and meets his friends from the neighborhood to walk to the Middle School.

At 7:45 am, Hannah, our third grader, and I leave our house on Kings Drive. As a volunteer for the District’s Walking School Bus program I walk the children of our neighborhood to our Primary Education Center. Hannah and I make several stops on Kings and Sherwood Drives to meet our children who will walk to school with us. Today, there are fifteen children making the trip.

On our way to school we talk about how nice it is to be able to walk. Some of the children talk about the fresh air and the animals we see along the way. Another parent talks about how her oldest son is more active and at a healthier weight because he is walking to school this year.

At 2:55 pm, I meet Hannah and the others from our neighborhood to begin our walk home. As we are walking home we pass Zach and his friends on Poplar Drive. They are excited about tonight’s practice as a former professional ball player who lives in the Township will be at practice to teach his team some new techniques.

As we return to our neighborhood the children return to their homes. I drop Jimmy off at his home. His mom asks how she can become a walking parent.

She says she wants to exercise a bit more, and would like to be able to spend some more time with Jimmy.
pass on to her the phone number for the District’s Transportation Corridor. As I’m leaving she asks what happens when it rains. I tell her that the children love our umbrella brigade, and that walking in the rain is often more fun then in it is in the sunny weather. She thanks me and says she looks forward to walking with us in the upcoming weeks.

Several months later the Schools District sends home the Body Mass Index (BMI) results for Hannah and Zach. I am pleased to see that their BMI has reduced since last year. I’m am sure this is a result of the additional exercise they are getting by walking to and from school everyday.

Next Steps

The grass roots effort begun by the Center Area School District Health and Wellness Council has taken root. Representatives of the Center Area School District, and Center Township have taken notice of these efforts, although we believe there is further education that is required to truly bring them on board in support of implementing the recommendations contained herein. The persistence of this organization and the support they receive from the Center Area School District’s nursing staff must be commended. Although this staff is stretched thin, they have assisted in defining a vision and working towards its implementation with persistence and hard work. The Center Area School District should consider instituting a paid position, Safe Routes to School Coordinator, if they are truly behind the effort that has begun.

At the time of this writing the status of the proposed merger with the Monaca School District is unknown. Should this merger take place, consideration should be taken into expanding the Safe Route to School Program to encompass the Monaca School District facilities into this plan.

In the end its the students of the district and district’s residents of the district’s communities that will benefit from safer walking and bicycling opportunities, healthier lifestyle opportunities, and quality of life enhancements associated with walkable community opportunities.

This study addresses the Engineering aspect of addressing safe routes to school. A Safe Routes to School Program doesn’t end here. Safe Routes to School Programs use a combination of education, encouragement, enforcement and engineering activities to help achieve their goals. Another important element is evaluation. There are many “how-to” guides that address the program aspect of Safe Routes to School, with the primary publication being “Safe Routes to School Guide” developed by the Pedestrian and Bicycle Information Center (PBIC) with support from the National Highway Traffic Safety Administration (NHTSA), Federal Highway Administration (FHWA), Centers for Disease Control and Prevention (CDC) and Institute of Transportation Engineers (ITE). This guide is maintained by the National Center for Safe Routes to School at www.saferoutesinfo.org.

The following information explains the basic elements of a Safe Routes to School program.

Education

Education activities target parents, neighbors and other drivers in the community to remind them to yield to pedestrians, to drive safely and to take other actions to make it safer for pedestrians and bicyclists. Parents serve as role models for their children and play an important part in teaching them pedestrian and bicycle safety. Education activities also teach students how to walk and bicycle safely and the benefits of doing so.


Encouragement

Encouragement strategies generate excitement about walking and bicycling safely to school. Children, parents, teachers, school administrators and others can all be involved in special events like International Walk to School Day and ongoing activities like walking school buses. Encouragement strategies can often be started relatively easily with little cost and a focus on fun.

Enforcement

Enforcement activities can help to change unsafe behaviors of drivers, bicyclists and pedestrians. They can use a combination of education, encouragement, enforcement and engineering activities. Increase driver awareness of laws, and they also can improve driver behavior by reducing speeds and increasing yielding to pedestrians. In addition, enforcement activities teach pedestrians and bicyclists to walk and bicycle safely and to pay attention to their environment. Enforcement doesn’t just involve law enforcement. Many different community members take part in making sure everyone follows the rules, including students, parents, school personnel and adult school crossing guards. In addition, the role of the law enforcement officers often goes beyond enforcement and can be included in all strategies of the SRTS program.

Engineering

Engineering addresses the built environment with tools that can be used to create safe places to walk or bicycle and can also influence the way people behave. Transportation engineers, city planners and architects use methods to create safer settings for walking and bicycling while recognizing that a roadway needs to safely accommodate all modes of transportation. Such improvements can include maintenance and operational measures as well as construction projects with a range of costs. When such programs are properly implemented, they may not only improve safety for children, but they also may encourage more walking and bicycling by the general public.

This document provides the Center Area School District, Center Township, and the Center Township Police Department with recommendations on how to address the engineering deficiencies that currently limit safe routes to school in Center Township. It will take a true partnership between these organizations, and the other secondary and post secondary education institutions to implement the recommendations presented herein. As funding is secured, and final engineering is being completed for the implementation of these recommendations, we recommend all partners begin to develop the remaining program elements that are required to achieve a truly successful safe routes to school program. Towards that end, we recommend the following resources be explored to tailor the Education, Encouragement and Enforcement components of the Center Area Safe Routes to School Plan:

- www.saferoutesinfo.org - Safe Route to School Guide
- www.walkingschoolbus.org
- www.bikewalk.org - Increasing Physical Activity Guide
- www.activelivingresources.org
- www.panaonline.org
- www.walktoschool-usa.org
The following table provides suggestions for enforcement, encouragement, and education activities related to the Center Township Safe Routes to Schools Program.

<table>
<thead>
<tr>
<th>Category</th>
<th>Strategy</th>
<th>Responsibility</th>
<th>Cost</th>
<th>Funding Source</th>
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<tbody>
<tr>
<td><strong>Enforcement</strong></td>
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<tr>
<td></td>
<td>Crossing Guards: Center Grange/Poplar, Poplar/Community College Drive, Poplar/Baker</td>
<td>CASD / Center Township</td>
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<td></td>
<td>Develop a Neighborhood Watch Program</td>
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<td></td>
<td>Place electronic speed sign in key locations</td>
<td>Center Township PD</td>
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<td>Enforce Traffic Safety Laws</td>
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<td>Center Township</td>
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<td><strong>Education</strong></td>
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<tr>
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<td>Parent and Student Education Classes</td>
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<td>CASD Center Township PANA</td>
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<td></td>
<td>Walking / Biking Education</td>
<td>CASD / Center Township PD</td>
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<td>Media and Public Information Campaign</td>
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<td><strong>Encouragement</strong></td>
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<td>Develop Map of Routes</td>
<td>CASD / Center Township</td>
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<td>BC ATVS CCBC PANA</td>
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<td>Encouragement Contests and Programs</td>
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<td>CCBC PANA</td>
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<td>Establish Walking School Bus Program</td>
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<td>PANA</td>
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<td>Hold Bike Rodeo - Teach Safe Bicycling Habits</td>
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<td>Hold Walk to School Days</td>
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<td>Hold Walk to School Classroom Challenges</td>
<td>CASD</td>
<td>$1,500</td>
<td>PANA</td>
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</tbody>
</table>
9. Source: Safe Routes to School National Partnership
10. Source: Center Area School District BMI Summaries for 2004 & 2005
11. Sources: U.S. Department of Health Pennsylvania Department of Health
13. Source: www.lgc.org
15. Source: Center Area School District