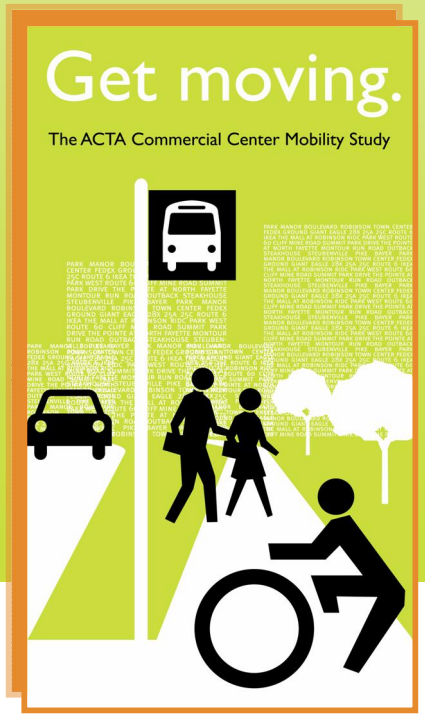
AIRPORT CORRIDOR
TRANSPORTATION ASSOCIATION

Commercial Center Mobility Study

Final Report

March 2008



Prepared by:

Mackin

Table of Contents

Oversight Committees

Steering Committee

- February 9, 2007 Minutes
- March 9, 2007 Minutes
- April 13, 2007 Minutes
- May 11, 2007 Minutes
- July 13, 2007 Minutes
- August 10, 2007 Minutes
- September 21, 2007 Minutes
- November 7, 2007 Minutes

Stakeholders Committee

Meeting Agendas

- October 17, 2006
- March 21, 2007
- October 2, 2007
- November 27, 2007

Meeting Minutes

- October 17, 2006
- March 21, 2007
- October 2, 2007
- November 27, 2007

Public Outreach

Study Flyer
Study Fact Sheet
Flyer for Airport Chamber of Commerce
Flyer for Allegheny West Magazine
Public Participation Plan
Outreach & Public Participation Events Summary
Newsletters

- Fall, 2006
- Winter, 2007
- Summer, 2007 (1)
- Summer, 2007 (2)

Public Meeting

- Poster
- Meeting Agenda November 30, 2006
- Meeting Minutes November 30, 2006
- Meeting Themes November 30, 2006

Focus Groups

- Meeting Agenda September, 2007
- Focus Group Questions
- West Allegheny High School Notes

Public Outreach (cont.)

Focus Groups (cont.)
- » Montour High School Flyer
- » Montour High School Notes
- » Moon High School Notes

Surveys
- » Hotel Survey
- » Youth Surveys Collected
- » Public Survey
- » Public Survey with Bike Questions
- » Big Box Survey Results
- » Shuttle Rider Survey Results
- » Surveys Collected

Project Development

Public Outreach Issues Summary
Public Outreach Issues & Engineering Explorations January, 2007
Proposed Projects February, 2007
Matrices
- » Sidewalk Matrix
- » Crosswalks Matrix
- » Intersection & Traffic Signal Matrix
- » Bus & Shuttle Matrix
- » Trail Matrix
- » Step Matrix

Final Project Priorities November 27, 2007

Summer Design Workshop

Course Description
Course Syllabus
Student Application
Teacher Application
Jury Notes
Participant Evaluations
Participant Comments
Media Coverage
- » Press Release
- » Tribune Review June 26, 2007; "Class Studies Robinson Traffic Mess"
- » Post Gazette West July 7, 2007; "Robinson Town Centre Subject of Mobility Study by ACTA Group"
- » Pittsburgh Tribune Review July 19, 2007; "Robinson Town Centre Plan Would Add Shuttle"
- » Pittsburgh Airport Area Chamber of Commerce; "Students, Teachers Enrolled in Free Professional Design Workshop"
- » The Almanac August 13, 2007; "Teens Take a Look at Improving Robinson Commercial Center"

Walk Challenge

Walk Challenge Preview Flyer
Walker Project Priorities

Walking Tour

Walking Tour Invitation
Walking Tour Narrative

Media Coverage

- Pittsburgh Post Gazette July 9, 2003; "Safer, Easier Traffic Plan is Sought for Airport Corridor"
- Pittsburgh Tribune Review, July 10, 2003; "Officials Balk at Traffic Survey"
- Allegheny Times, July 10, 2003; "Group Proposes Robinson Traffic Study"
- Suburban Gazette, July 23, 2003; "Robinson Commissioners in Routine Summer Business"
- Pittsburgh Magazine, June, 2004; "The Longest Commute"
- Suburban Gazette, June 22, 2005; Letter to the Editor
- West Allegheny Record, September 7, 2005; "ACTA Traffic Project Gets Cool Reaction"
- Coraopolis-Moon Record, September 14, 2005; "Supervisors Back ACTA Traffic Study"
- Allegheny Times, October 3, 2005; "Association to Study Airport Area Traffic"
- Suburban Gazette, October 12, 2005; "Robinson Planners Review Sidewalks & Transportation Issues"
- Pittsburgh Business Times, July 21-27, 2006; "Packed Retail Area Gets Transit Study"
- Allegheny West Magazine, September, 2006; "Retail Transportation Habits & Needs to be Studied Through Joint Grant"
- Allegheny West Magazine June, 2007; "Eight Steps Towards Safety for Walkers and Shoppers"

Environmental Study of the Montour Trail Connection to The Mall at Robinson

Environmental Overview
Environmental Overview Map

Walkway across the Bridge over the Parkway

Preliminary Roadway Plans –Summit Park Drive
Preliminary Traffic Signal Permit Plans –Summit Park Drive & Montour Church Road / SR 60 Ramps C & D
Preliminary Traffic Signal Permit Plans –Summit Park Drive & Andrew Drive / Wal-Mart Drive

Acknowledgements

ACTA Commercial Center Mobility Study Steering Committee

Victor DeFazio.....PennDOT District 11-0
Robert Dudash.....URS Corporation
James Foringer.....PennDOT District 11-0
Henry Nutbown.....ACTA
Lynn Manion.....ACTA, Executive Director
Amy Matheson .....ACTA, Project Manager
Carol Uminski.....Southwestern Pennsylvania Commission

ACTA Commercial Center Mobility Study Stakeholders Committee

Charlie Beaumariage .....Montour Trail Council
Rich Belotti.....Allegheny County Airport Authority
Scott Brilhart .....Moon Township
Eric Buncher .....Allegheny County Airport Authority
Sandy Burkett .....Vital Signs
Steve Burkett .....Vital Signs
Michele Castro .....GSP Consulting Corporation
Dan Cessna .....PennDOT District 11-0
Rich Charnovich .....Robinson Township
Darcy Cleaver .....Port Authority of Allegheny County
Tom Cortese .....Community College of Allegheny County
Darla Cravotta .....Allegheny County Department of Economic Development
Ruth Delach .....Pittsburgh Technical Institute
Sharon DeNardo .....Senator John Pippy's Office
Robert Dudash .....URS Corporation
Beth Edwards .....The Mall at Robinson
Richard Feder .....Port Authority of Allegheny County
Mike Finnerty .....Allegheny County Council
Lisa Fulton .....CareerLink
Bob Grimm .....North Fayette Township
Sally Haas .....Pittsburgh Airport Area Chamber of Commerce
Lynn Heckman .....Allegheny County Department of Economic Development
Cindy Howe .....Representative Nick Kotik's Office
Sidney Kaikai .....Pittsburgh City Planning
Tim Killmeyer .....Montour Trail Council
Todd Kravits .....PennDOT District 11-0
Vera Krofcheck .....Three Rivers Workforce Investment Board
Ron Krusiensky.....PennDOT District 11-0
Chris Lewis .....Pitttsburgh Airport Marriott
Dave McGaffin .....The Mall at Robinson
Liz Nahm .....OTMA
Jodi Noble .....Moon Township
Terri Noble .....Ikea
Henry Nutbrown .....ACTA

ACTA Commercial Center Mobility Study Stakeholders Committee (cont.)

Jerry Paytas ..... GSP Consulting Corporation
Dave Pecharka ..... Michael Baker Jr., Inc.
Mavis Rainey ..... OTMA
Jessica Schriner ..... RIDC Park West Association
Kristen Sheleheda ..... Beaver County Transit Authority
Todd Steele ..... Ikea
Maureen Pettner ..... PNC Bank David Stragar Access to Work Interagency Cooperative
Janet Thorne ..... Hollow Oak Land Trust
Carol Uminski ..... Southwestern Pennsylvania Commission
Scott Vetere ..... Port Authority of Allegheny County
Dale Vietmeier ..... Robinson Township Police Department
David Wohwill ..... Port Authority of Allegheny County
Sara Wolfoort ..... Southwestern Pennsylvania Commission
Vince Zapa ..... Zamagias Properties

ACTA would like to thank the following organizations and individuals for their donations and assistance during the ACTA Commercial Center Mobility Study

Scott Brilhart ..... Moon Township
Rich Charnovich ..... Robinson Township
Michelle Chiavetta ..... Montour High School
Darcy Cleaver ..... Port Authority of Allegheny County
Dave Cooper ..... Johnson, Mirmiran & Thompson
Darla Cravotta ..... Allegheny County Department of Economic Development
Sharon DeNardo ..... Senator John Pippy's Office
Robert Dudash ..... URS Corporation
Beth Edwards ..... The Mall at Robinson
Jim Foringer ..... PennDOT District 11-0
Bob Grimm ..... North Fayette Township
Sally Haas ..... Pittsburgh Airport Area Chamber of Commerce
Nancy Hartman ..... West Allegheny High School
Lynn Heckman ..... Allegheny County Department of Economic Development
Vera Krofcheck ..... Three Rivers Workforce Investment Board
Gary Moshier ..... Moshier Studio
Tracy Myers ..... Heinz Architectural Center
Betty Pander ..... Moon Area High School
Marilyn Russell ..... Carnegie Museum of Art
Kristen Sheleheda ..... Beaver County Transit Authority
Lindsay Bond Totten ..... Horticultural Society of Western Pennsylvania
Dave Veight ..... DMJM Harris, Inc.
Jason Vrabel ..... Community Design Center of Pittsburgh
Nate Wildfire ..... East Liberty Development, Inc.
Marcus Zamagias ..... Zamagias Properties

1.1 Airport Corridor Transportation Association

The Airport Corridor Transportation Association (ACTA), incorporated in 1990, is a nonprofit transportation management association located in Robinson Town Centre, Robinson Township, in the western suburbs of Pittsburgh, Pennsylvania. ACTA is a membership-based organization. Its members include businesses and public sector entities that collaborate to optimize the use of the transportation system in the Pittsburgh International Airport corridor by supporting and implementing demand management strategies to broaden the spectrum of travel options and support responsible economic growth.

ACTA works with its members, local municipalities and businesses to improve the transportation system in the airport corridor and to encourage workers and residents to consider shared ride travel alternatives whenever possible. ACTA partners with Southwestern Pennsylvania Commission's CommuteInfo program to market car and van pool use among workers. ACTA also operates two shuttles that take workers from the bus stop to their work sites within the Robinson-North Fayette commercial center.

In July, 2006 ACTA began an 18 month planning study to look for ways to improve mobility within the commercial area. Working through a series of community meetings with key stakeholders, the ACTA Commercial Center Mobility Study developed a mobility plan for the Robinson-North Fayette commercial area integrating auto, bus, bicycle, and pedestrian traffic. The plan will serve as a guide for future mobility improvements to the commercial area.

The Commercial Area

1.2 The Planning Challenge

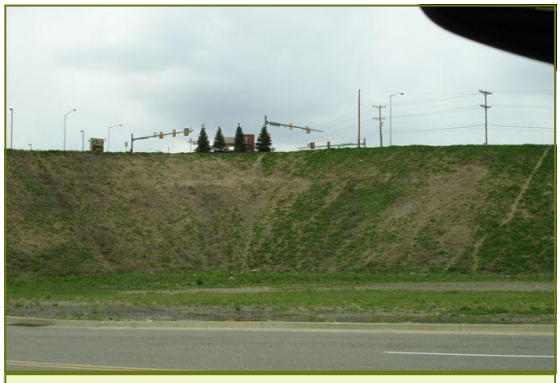
In the late 20th century, a new type of city development called the "edge city" began to appear along suburban highway growth corridors. Unlike the traditional, planned urban development that would include a town center, the thoughtful incorporation of various land uses, street grids and attendant amenities geared to pedestrians, bus riders, bicyclists and motorists, edge cities are center-less and are almost exclusively geared to automobiles, access roads and parking.

Due to the strong employment draw of individuals that often rely on public transit, the attraction of the young to niche retail markets and the large amount of onsite parking in edge cities, mobility conflicts are almost always guaranteed. The retrofitting of edge cities into planned places is an emerging issue confronting planners, residents, business people and public officials. How is value added? How are amenities identified and put into place? How is safety insured? How can all users enjoy and access the development?

1.3 Test Case: The Robinson-North Fayette Retail Area

Over the past several years, retail, hotel, restaurant, and office development in the Robinson and North Fayette areas have been very successful. With this success has come increased movement of all types, from automobiles and buses to pedestrians, and bicycles. The commercial area serves as the hub of Port Authority service for the airport corridor and is also adjacent to the Montour Trail. The transfer point for Beaver County Transit Authority is across the street. A commercial area developed for the automobile now hosts hundreds of pedestrians each day. However, pedestrian amenities are few. Most areas do not have sidewalks. Some pedestrian-established routes are simply dangerous.

A few years ago, with the help of "Walkable Communities" and the Southwestern Pennsylvania Commission, ACTA held a community meeting to discuss mobility issues in the commercial area. As part of the workshop, ACTA documented a significant increase in pedestrian traffic through a series of



Desire lines to The Mall at Robinson

photographs showing the "desire paths" in the grassy areas, many on steep grades. ACTA subsequently developed a walking tour of the area for local elected officials to illustrate mobility concerns. The problem was highlighted in a feature article in the June, 2004 issue of *Pittsburgh Magazine*. In order to improve safety and mobility for all users, including the residents of these and surrounding municipalities, ACTA launched the Commercial Center Mobility Study to improve mobility in the commercial area.

1.4 Purpose of the Study

The purpose of the study was to develop a community and user-focused plan of action to improve mobility, enhance intermodal connectivity and create a sense of place in the commercial area which serves as the downtown for the community. The mobility plan was developed through a series of community meetings with stakeholders such as local governments, elected officials, businesses, workers, residents, shoppers, Allegheny County, PennDOT, SPC, the Montour Trail Council, Hollow Oak Land Trust, the Three Rivers Workforce Investment Board, the Port Authority of Allegheny County and the Beaver County Transit Authority.

1.5 Study Goals

The plan attempted to integrate vehicular (cars, delivery trucks, buses, etc), bicycle, and pedestrian traffic. Study goals included:

- Retrofit a large suburban retail area built for access by vehicles to encourage access for all modes;
- Improve traffic flow and integrate vehicular (including transit), pedestrian (including the American with Disabilities Act [ADA] pedestrian access) and bicycle traffic;
- Stabilize the retail area and improve economic development;
- Make the retail area the intermodal hub for the airport corridor;
- Make the best use of the natural and man-made resources, such as the transit hub, Montour Trail, clustering of retail, etc.;
- Engage local municipalities in a problem-solving project resulting in implementation and a funding plan;
- Engage the community in a process to make the retail area a community center;
- Make use of community experts and resources, such as architects and engineers who live and/or work in the area, to help with the plan and build the sense of community ownership;
- Make the best use of the natural and man-made resources (transit hub, Montour Trail, Montour Run, clustering of retail);
- Foster a shared community vision and commitment to achieving the vision; and
- Improve the quality of life for residents, businesses, and visitors in the area.

1.6 Study Area and Parameters of the Study

The study area focuses on the Robinson-North Fayette retail area including Robinson Town Centre, The Mall at Robinson and The Pointe at North Fayette. Other areas include the US Routes 22 and 30 business corridor from Verizon through the Montour Church Road interchange, Regional Industrial Development Corporation (RIDC) Park West, FedEx Ground, Super K-Mart and adjoining businesses. In all, the study area includes:

- Portions of Four Townships (Findlay, Moon, North Fayette & Robinson)
- 19 Shopping Areas

Shoppers Walking in Robinson Town Centre

- 236 Retail Stores
- 70 Restaurants
- 1 Mall
- 11 Hotels
- 12 Office Buildings
- 1 Office Park (RIDC)
- 4 Gasoline Stations
- 1 Cinema (12 Screens)

Several Undeveloped Parcels

Figure 1.1 shows the location of the study, with respect to the State of Pennsylvania, Allegheny County and the City of Pittsburgh. Figure 1.2 shows the actual study area boundary, including roads, municipal boundaries and building footprints.

The types of issues addressed included:

Pedestrian
- Pedestrian movements
- Pedestrian desire lines (on public & private property)
- Intersection and mid-block crosswalks at signalized and non-signalized intersections
- Pedestrian access from Robinson Town Centre to the Point at North Fayette
- Traffic calming

Bicycle
- Connecting the Montour Trail to the retail area
- Amenities for Bicyclists

Bus
- Retail area as hub for public transit
- Bus circulation in the retail areas
- Private shuttles
- Bus stop locations

Vehicular
- Traffic calming
- Intersections
- Traffic signals and timings

Safety/ADA Issues
- Pedestrian & bicycle safety
- Roadway regulatory, warning, and destination (street name signs) signing
- Warranting traffic signals at unsignalized intersections
- Crash data on the roadway network system in the project area

Undeveloped Land/Future Development
- Future Roadway Improvements
- PennDOT's planned US Routes 22 and 30/PA Route 60 Interchange
- North Fayette Township's planned Montour Church Road Extension
- Port Authority's proposed park and ride lot
- PennDOT's planned I-376 re-designation of the US Routes 22 and 30/PA Route 60 Corridor
- PennDOT's planned improvements at the US Routes 22 and 30/Montour Church Road Interchange

Environmental Constraints
- Confirm the presence or absence of parks and recreational sites; cultural resources; section 4(f) impacts; natural resources (wetlands, stream crossings, flood plain impacts); potentially contaminated areas

1.7 Oversight Committees

The study was guided by the Steering Committee which met monthly and the Stakeholders Committee which met four times during the course of the study:

Steering Committee Members

Steering Committee

Victor DeFazio - PennDOT District 11-0
Robert Dudash - URS Corporation
James Foringer - PennDOT District 11-0
Henry Nutbown - ACTA
Carol Uminski - Southwestern Pennsylvania Commission

Stakeholders Committee

Charlie Beaumariage - Montour Trail Council
Rich Belotti - Allegheny County Airport Authority
Scott Brilhart - Moon Township
Eric Buncher - Allegheny County Airport Authority
Sandy Burkett - Vital Signs
Steve Burkett - Vital Signs
Michele Castro - GSP Consulting Corporation
Dan Cessna - PennDOT District 11-0
Rich Charnovich - Robinson Township
Darcy Cleaver - Port Authority of Allegheny County
Tom Cortese - Community College of Allegheny County
Darla Cravotta - Allegheny County Dept. of Econ. Dev.
Ruth Delach - Pittsburgh Technical Institute
Sharon DeNardo - Senator John Pippy's Office
Robert Dudash - URS Corporation
Beth Edwards - The Mall at Robinson
Richard Feder - Port Authority of Allegheny County
Mike Finnerty - Allegheny County Council

Stakeholders Meeting

Lisa Fulton - CareerLink
Bob Grimm - North Fayette Township
Sally Haas - Pittsburgh Airport Area Chamber
Lynn Heckman - Allegheny County Dept. of Econ. Dev.
Cindy Howe - Representative Nick Kotik's Office
Sidney Kaikai - Pittsburgh City Planning
Tim Killmeyer - Montour Trail Council
Todd Kravits - PennDOT District 11-0
Vera Krofcheck - Three Rivers Workforce Invest. Board
Ron Krusiensky - PennDOT District 11-0
Chris Lewis - Pittsburgh Airport Marriott
Dave McGaffin - The Mall at Robinson
Liz Nahm - OTMA
Jodi Noble - Moon Township
Terri Noble - IKEA
Henry Nutbrown - ACTA
Jerry Paytas - GSP Consulting Corporation
Dave Pecharka - Michael Baker Jr., Inc.
Maureen Pettner - PNC Bank
Mavis Rainey - OTMA

Jessica Schriner - RIDC Park West Association
Kristen Sheleheda - Beaver County Transit Auth.
Todd Steele - IKEA
David Stragar - Access to Work Interagency Cooperative
Janet Thorne - Hollow Oak Land Trust
Carol Uminski - Southwestern Pennsylvania Commission
Scott Vetere - Port Authority of Allegheny County
Dale Vietmeier - Robinson Township Police Department
David Wohlwill - Port Authority of Allegheny County
Sara Wolfoort - Southwestern Pennsylvania Commission
Vince Zappa - Zamagias Properties

Stakeholders Meeting

1.8 Consultants

Although the purpose of the study was to develop a mobility plan for the Robinson-North Fayette retail area, a broader goal was to get the community involved in a planning process that would encourage residents and workers to think about the daily mobility choices they make and about changes that might have to be made to the existing infrastructure to accommodate various mobility options.

ACTA decided that in order to accomplish the study goals, the expertise of both a planner and a transportation engineer were needed. Furthermore, because the planning process would start by getting the community to identify the mobility issues to be addressed in the study, the planning consultant needed to be brought on first. After interviewing planning consultants, the firm of Brean Associates was hired in July, 2006. Karen Brean was the project manager. The first six months (July –December, 2006) were spent conducting focus groups and collecting surveys.

After the process of collecting community input was well underway, ACTA prepared and advertised a Request for Proposals (RFP) for an engineering consultant. RFPs were due to ACTA on October 3, 2006. The firm of Mackin Engineering was selected. Mackin began work on the study in January, 2007. The project manager was Ray Hack. Engineering deliverables included:

- A list of recommended projects with conceptual opinions of probable costs for construction
- Conceptual drawings for each project using GIS and base mapping and improvements developed using Computer Aided Drafting and Design (CADD)
- Strategies (short term and long term), project implementation including identifying lead agencies
- Incentives for property owners and local governments to help implement plan
- Documentation of pedestrian desire lines and solutions
- Final Engineering report including narrative, recommended projects, conceptual costs and drawings
- Electronic files of deliverables
- Potential sources for funding

2.1 Recognizing the Need

On October 16, 2001, ACTA participated in a region-wide look at pedestrian issues led by Southwestern Pennsylvania Commission (SPC) and its consultant, Walkable Communities. One of the areas targeted by the study for a closer look was the Robinson-North Fayette retail area. To prepare for the half-day workshop, ACTA documented existing conditions for pedestrians in the study area. A number of community and local government representatives attended the workshop along with SPC and ACTA staff. The result was a map of existing and future pedestrian paths in the study area. Future paths were based on existing desire lines.

2.2 Defining the Problem

The Walkable Communities Workshop led to a walking tour that ACTA developed to call attention to the challenges walking in the Robinson-North Fayette commercial area. The walking tour and pedestrian issues, particularly associated with getting to jobs in the commercial area, were the subject of an article in *Pittsburgh Magazine*, "The Longest Commute" published in June, 2004. In late 2004, ACTA applied for funding to look at mobility issues in the Robinson-North Fayette commercial area.

Sidewalk in Robinson Town Centre

2.3 Building Community Consensus to Undertake the Study

In the spring of 2006, ACTA began meeting with local municipalities and other interested groups to talk about the mobility issues facing the commercial area and build support for the planning study. As part of the presentation to local leaders, ACTA proposed a ten-step planning process:

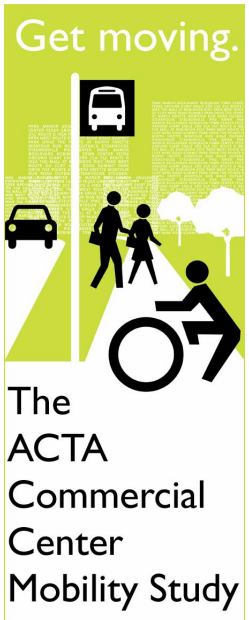
1. Meet with Key Stakeholders
2. Create Oversight Committees for the Plan
3. Create Community Awareness
4. Seek Community Input and Buy-In
5. Introduce Sweat Equity Concept
6. Develop Constituent Priorities
7. Get Technical Assistance
8. Produce the Plan
9. Get Community Support
10. Implement the Plan

2.4 Technical Assistance

Once funding was secured, ACTA hired Brean Associates, a planning consultant, in August of 2006 to help further define the planning process and assist with public involvement. Brean Associates worked with ACTA to create a public participation plan. In accordance with the planning process, outlined above, the engineering consultant, Mackin Engineering, was hired after public opinion on the study was collected.

2.5 Study Logo

In order to attract attention to the study which would rely heavily on public participation, a graphic designer, Draw Smart Design, was hired to create an identifying logo for the study. The "Get Moving" logo was developed in the fall of 2006.



Get Moving Logo

2.6 Oversight Committees

The Steering Committee for the plan began to hold monthly meetings in the fall of 2006. The Steering Committee had representatives from the Pennsylvania Department of Transportation and the metropolitan planning organization (study funders) as well as ACTA board and staff. The Stakeholder Committee, a much larger group, was comprised of government and private sector entities with an interest in the airport corridor and the study area.

2.7 Surveys

With the help of the planning consultant, ACTA began distributing surveys in the fall of 2006. In all, more than 300 surveys were collected. Surveys were distributed targeting particular user groups such as shoppers, bus riders, retail and food service workers and managers, and hotels. ACTA distributed surveys in person at community meetings, through the Pittsburgh Airport Area Chamber of Commerce newsletter and on-line at ACTA's web site www.acta-pgh.org.

2.8 Focus Groups

The results of the surveys often led us to target additional user groups. For example, upon interviewing the mall managers and store owners, we learned that the mix of stores is designed to attract teens and young adults. This information led us to conduct focus groups in three area high schools. In all, we talked to over 150 students and their teachers about mobility and livability issues.

2.9 Public Meeting

ACTA held a public meeting to gather information from residents on November 30, 2006. While the meeting was somewhat helpful in collecting information about mobility choices, the meeting was not well attended. The Steering Committee decided that more creative methods of information gathering needed to supplement the traditional public meeting.

2.10 Study Newsletter

Throughout the course of the 18-month study, ACTA produced four newsletters that were mailed to all constituent groups including local residents.

2.11 Converting Community Comments to Eight Study Areas

After feedback from the presentations, public meetings, newsletters, focus groups and surveys was gathered and reviewed, the following eight study areas (as derived from comments listed below each area) emerged:

1. Examine the bridge across the Parkway West connecting Robinson Town Centre and the Pointe at North Fayette from the signal at the intersection of Park manor Boulevard to the signal at the intersection of Summit Park Drive and Montour Church Road
   - » Need pedestrian connection from Robinson To the Pointe at North Fayette; current connection is dangerous for pedestrians
   - » Traffic light at the bridge between Robinson Town Centre and the Pointe has a delayed green light but there is nothing informing drivers of it.
   - » Address the light timing issues at both the left turn into the Pointe from the Parkway Interchange and at Andrew Drive
   - » 74.1% of those surveyed gave top priority to addressing the intersection of Summit Park Drive and Route 60 North (bridge over the Parkway)
   - » Build a pedestrian bridge over the Parkway

2. Inspect the Left Turn onto Park Manor Boulevard at the PNC Bank exit
   - » Make it a right turn only leaving PNC Bank driveway and create a location for U-turns

- » Add a traffic signal at the PNC driveway
- » 63.6% of those surveyed gave top priority to addressing the intersection of Park Manor Boulevard and the PNC/DSW Driveway

3. Explore the pedestrian system including 1) documenting existing sidewalks and walking paths (desire lines) on the base map; 2) identifying significant gaps in each system in order to create as complete an interconnected grid as possible; 3) addressing pedestrian access and safety issues at signalized and unsignalized intersections; and 4) looking at using in-ground motion-sensitive lighting along pedestrian paths
   - » Make the area more walkable
   - » Many of the pedestrian signals at traffic lights are inaccessible
   - » Dangerous to drive with pedestrians crossing the roads; pedestrians cross wherever
   - » Consider strategies to have property owners retrofit their properties to provide sidewalks

4. Study the walking and driving access and safety issues between the cinema and the other youth-oriented destinations such as Applebee's, Eat 'n Park, and The Mall at Robinson
   - » There has been an increase in pedestrian traffic from The Mall at Robinson to the West Point Apartments; there will soon be 300 total Pittsburgh Technical Institute students living in the apartments (increased from 200)
   - » People walk on the grass and in streets; walk from the mall to the movies; need designated crosswalks
   - » Create back roads; Example: Behind the Media Play strip mall for those going to The Mall at Robinson and avoiding the Atria's/Eat 'n Park intersection

5. Observe signal timing and signal phasing (especially left turn signals) throughout the commercial area
   - » Traffic signals are not coordinated
   - » Add a left turn signal at the intersection of Summit Park Drive and Route 60 North (Parkway Interchange)
   - » Add a traffic signal at the intersection of Summit Park Drive and Quinn Drive near Barnes & Noble
   - » Add a left turn arrow for Sam's Club complex (Summit Park Drive and Andrew Drive)
   - » Signal over 22/30 has no left arrow; dangerous
   - » Address congestion at Thorn Run (Costco); address traffic on Montour Run that backs to RIDC Park; address congestion at Beaver Grade Road and Montour Run; motorists often ride shoulder of road because of two right turn lanes into FedEx; on the Brothers Grimm side of the same access point, traffic backs up over a blind curve
   - » Add more traffic signals and time them
   - » Make longer turn lanes and better coordination of traffic lights
   - » Rethink driving lanes—wider, increased number (two versus one in each direction), dedicated left hand turn lanes, longer turn lanes at intersections

6. Evaluate improving signage and lighting to address safety concerns
   - » Signage at intersections is confusing; people don't know when to go or when to stop
   - » Poor roadway street lighting
   - » Roads are confusing, congested and can't accommodate traffic
   - » Need more directional signage to know where we're going
   - » Increase signage at all intersections

7. The bus stop at IKEA has the potential to be a "super stop" because it's the hub of both Port Authority and Beaver County Transit service in the airport corridor. Explore: 1) moving the entrance to IKEA; 2) addressing the left turn out of the IKEA parking lot; 3) improving pedestrian access and safety to the shelter across Park Manor Boulevard and other retail and restaurant destinations; 4) line-of-sight issues for bus riders crossing Park Manor Boulevard; and 5) replacing the current bus shelter with a larger four sided shelter.
   - » Many bus stops can not properly handle the overflow of bus riders
   - » Need sidewalks for bus riders (to get to jobs)
   - » IKEA is a destination; can generate congestion on a large scale

8. Create connections (on road and off road) between the Montour Trail and the commercial area
   - » There is a possibility of creating a switch back from Montour Trail to the commercial area
   - » Connect the area to the Montour Trail
   - » Provide bike lanes

2.12 Technical Work

The engineering consultant, Mackin Engineering, used the eight study areas as a guide to the engineering work. Over the next twelve months, the engineers examined each of the study areas and proposed solutions. Oversight committee members met regularly with the engineers to comment on the proposed designs as the work progressed. The study newsletter and ACTA's website also encouraged feedback from the public. The eight areas were published in the newsletter and put on the web site.

2.13 Summer Design Workshop

After reflecting on the importance of teens and young adults to the commercial area, ACTA added a new dimension to the study. In the summer of 2007, a small group of area high school students, educators, and design professionals (engineers and architects and landscape architects) participated in a four-day workshop focused on the Robinson – North Fayette commercial area. ACTA partnered with Carnegie Museum of Art to offer the workshop to look at suburban mobility, design and livability issues. They heard from local professionals, community leaders, politicians, and City and County officials.

The workshop incorporated both field work and studio time. Sessions were held on-site in the Robinson-North Fayette retail area and at Carnegie Museum of Art in Oakland. The museum's collections of paintings, architectural drawings, and models inspired creative thinking about what makes the places where we live, work, and play unique and memorable and how they evolve over time. The museum was also the site for teams to try out ideas with hands-on projects. The week was designed to be exploratory and investigative and to result in fresh thinking about the suburban landscape and the role individuals can play in shaping their environment. The workshop ended with the teams presenting their ideas to a jury of local community leaders and design professionals.


Summer Design Workshop Participants

The summer design workshop is replicable in high school classes during the school year and in future summer programs, greatly informed the Commercial Center Mobility Study by adding a hands-on component that yielded many creative and innovative ideas about both

mobility and livability. A separate publication focusing on the Summer Design Workshop, *Suburban Transportation Solutions* is available from ACTA.

2.14 Setting Funding/Implementation Priorities

By the fall of 2007 Mackin had completed most of the technical work. The Oversight Committees were assembled to review the engineering work and prioritize the proposed designs based on a number of factors including cost and feasibility. A matrix of options was presented to the committees so that they could prioritize the proposed solutions. Solutions were grouped into these categories:

- Sidewalk/Walkway Connections
- Crosswalks
- Intersections and Traffic Signals
- Buses and Shuttles
- Trails
- Steps

2.15 Walk Challenge Preview

To get feedback from the community, ACTA decided to try something different from the usual public meeting. On November 10, 2007 ACTA sponsored a Walk Challenge called "The First 2,000 Steps" which was a preview to a month-long Walk Challenge planned for spring, 2008. The purpose of the Walk Challenge was:

- To get people physically involved in mobility issues emphasizing that every trip begins on foot
- To encourage physical activity

To distribute the matrix of solutions for the Commercial Center Mobility Study and get public feedback
In addition to the responses from the Walk Challenge preview, ACTA solicited responses from the ACTA web site. The Walk Challenge planned for spring, 2008 will provide another venue for community input.

2.16 Funding and Implementation

ACTA's next step is to present the results of the plan to community leaders, elected officials, local developers, and private sector companies. Through these presentations ACTA hopes to build support for the plan. With the planning and design phases completed, ACTA is working to complete the project prioritization process. The next step for ACTA is to work with its partners to identify funding for and implement as much of the plan as feasible.

The Challenge: Desire lines, also known as worn walking paths, were found throughout the study area. Pedestrians are walking at locations without sidewalk or steps and are crossing streets at mid block locations without much protection or warning.

The Investigation and Analysis: Mackin conducted field views to determine the location of existing sidewalk and desire lines throughout the study area. Mackin and ACTA also conducted pedestrian surveys at four (4) locations to determine where pedestrians were walking and to what extent. Based on all of this information, Mackin developed a pedestrian priority system in which locations in need of sidewalk, steps, or crosswalk treatments were rated with a high, medium or low priority rating.

Potential Solution: Construct sidewalk at locations where pedestrians are walking, yet no sidewalk exists, starting with the highest priority locations (3,800 feet), then the medium priority locations (8,100 feet), followed by the low priority locations (17,400 feet). Construct steps at the suggested locations from highest priority (2 locations covering 156 feet), then the medium priority (1 location for 28 feet) to the lowest priority (4 locations for 144 feet). Erect the suggested crosswalk treatments from highest priority (4 locations) then the medium priority (5 locations) to the lowest priority (1 location).

Probable Cost: The cost of sidewalk depends on the material that is used. Concrete, asphalt and crushed limestone are three (3) options that can cost $63, $39 and $31 per linear foot for a five (5) foot sidewalk width, respectively. Assuming concrete, the total estimated cost for constructing the highest priority sidewalk is $240,000, $513,000 for medium priority sidewalk and $1,096,000 for lowest priority sidewalk. The estimated costs of concrete steps are $31,000 for the highest priority steps, $6,000 for medium priority steps and $29,000 for lowest priority steps. The estimated costs of crosswalk treatments are $16,000 for the highest priority crosswalks, $6,000 for medium priority crosswalks and $2,000 for lowest priority crosswalks.

3.1 Inventory of Existing Sidewalks and Desire Lines

Mackin conducted field views of the entire study area several times, including during winter and summer months, to inventory the location of existing sidewalks and desire lines. Desire lines can be defined as locations where there is a worn dirt path in the grass or snow where pedestrians are walking, and wearing a path in the grass. These desire lines were typically found along the sides of roads, wherever numerous pedestrians walk.

A desire line is shown along the southern side of Summit Park Drive in North Fayette Township.

Figure 3.1, titled 'Desire Lines" shows the location of existing sidewalk in green and desire lines in red. Notice that nearly all of the existing sidewalk is located in Robinson Township, in The Mall at Robinson, Robinson Court, Robinson Crossroads and The Commons development areas. North Fayette Township, including the highly developed The Pointe at North Fayette, did

A desire line along Park Manor Blvd heading towards The Mall at Robinson in Robinson Township.

not have any existing sidewalk. Additionally, the Robinson Town Centre area does not have sidewalk along the side of the roads.

Desire lines were found throughout the study area. However, they were more noticeable along both sides of Summit Park Drive, along the southern side of Park Manor Blvd, and along Robinson Center Drive and Park Manor Drive at gaps in the sidewalk where no sidewalks exist.

3.2 Discussion of Pedestrian Priorities

Mackin developed a pedestrian priority system, in which potential locations for sidewalk were ranked according to priority. The locations in which Mackin felt that sidewalk was needed the most were given a "Highest Priority" rating, and are designated by the color red in Figure 3.2, titled "Pedestrian Priorities". "Medium Priority" locations are colored orange and "Lowest Priority" locations are colored yellow. Criteria used in developing these priorities were as follows:

- The location did not have an existing sidewalk;
- The location shows signs of pedestrian activity with desire lines. Some desire lines are stronger than others, as they appeared more worn and wider;
- Pedestrians were witnessed at the location, either during a field view or during one of the four pedestrian surveys conducted; and
- The location connects existing sidewalk from two (2) locations, by filling in the gap.

Pedestrian surveys

With the guidance of Mackin, ACTA conducted pedestrian surveys during peak travel periods at the following four (4) locations:

- Across the Robinson Town Centre/The Pointe Interchange Bridge over the Parkway
- Along and Across Park Manor Blvd in the vicinity of the IKEA and Robinson Town Centre Bus Shelters
- Along and Across Summit Park Drive in North Fayette Township
- Between the Showcase Cinema, The Mall at Robinson and Various Restaurants in Robinson Township

3.3 Pedestrian Counts Collected at the Robinson Town Centre/The Pointe Interchange Bridge Over the Parkway

The survey at this location was conducted on four (4) separate dates and times:

- 7:15 –8:15 AM, Thursday, April 19, 2007
- 4:30 –5:30 PM, Thursday, April 19, 2007
- 12:00 –1:00 PM, Friday, April 20, 2007
- 1:00 –2:00 PM, Saturday, April 21, 2007

These four (4) hours of pedestrian movements are summarized graphically in Figure 3.3. Note that the vast majority of the pedestrians crossed the bridge on the eastern side. Thirty-four (34) pedestrians were

counted crossing the eastern side of the bridge, compared to only five (5) on the western side, during the four (4) hours of data collection. The bus stop at the corner of Park Manor Blvd and Robinson Town Centre Drive is a very busy bus shelter, as twenty-six (26) pedestrians were counted coming from/going to this stop in the four (4) hours. On the southern side of the bridge, twelve (12) pedestrian's origin/destination was from on top of the hill where Lowes is located. These pedestrians are climbing a fairly steep hill. Ten (10) pedestrians continued on towards Wal-Mart on the southern side of Summit Park Drive, seven (7) went up Montour Church Road and five (5) continued on towards Wal-Mart on the northern side of Summit Park Drive.

3.4 Pedestrian Counts Collected Along and Across Park Manor Boulevard in the Vicinity of the IKEA and Robinson Town Centre Bus Shelters

The survey at this location was conducted on five (5) separate dates and times:

- 7:15 –8:15 AM, Tuesday, May 22, 2007
- 4:30 –5:30 PM, Thursday, May 24, 2007
- 12:00 –1:00 PM, Friday, May 25, 2007
- 7:15 –8:15 AM, Wednesday, May 30, 2007
- 1:00 –2:00 PM, Saturday, June 2, 2007

These five (5) hours of pedestrian movements are summarized graphically in Figure 3.4. Note that a pedestrian survey graphic from one location can be compared to the graphic from another location, as the number of pedestrians witnessed at a particular location was divided by the number of hours that the survey was conducted. The thickness of the travel paths is shown in pedestrians observed per hour.

The major origin/destination at this location is, by far, the IKEA bus shelter. The majority of the pedestrians going to/coming from this shelter are parking their cars in the IKEA parking lot and riding the bus, using the IKEA parking lot as a park-n-ride lot. Fifty (50) pedestrians were observed doing this in the five (5) hour survey. The second most common attraction for pedestrians using the IKEA bus shelter is Robinson Town Centre. Whether these people work or shop there is unknown. Twenty-Eight (28) pedestrians were observed making this movement. Two other transit related pedestrian movements are also occurring in this area. ACTA operates an ACTA On-Demand Shuttle service at certain times of the day, which picks people up behind the IKEA bus shelter and takes them to other locations with the commercial area. Thirteen (13) people were observed going from the IKEA bus shelter to the ACTA On-Demand Shuttle. Finally, fourteen (14) people were observed transferring from one bus shelter to the other, across the street at the Robinson Town Centre bus shelter.

Besides the pedestrian movements related to the bus shelters, it can be seen that a lot more pedestrians walk along the southern side of Park Manor Blvd, opposed to the northern side. Twenty one (21) pedestrians were observed on the southern side, compared to only two (2) on the northern side.

3.5 Pedestrian Counts Collected Along and Across Summit Park Drive in North Fayette Township

The survey at this location was conducted on five (5) separate dates and times:

- 7:15 –8:15 AM, Tuesday, June 12, 2007
- 9:00 –10:00 AM, Thursday, June 14, 2007
- 4:30 –5:30 PM, Thursday, June 14, 2007
- 12:15 –1:15 PM, Friday, June 15, 2007
- 1:00 –2:00 PM, Saturday, July 21, 2007

These five (5) hours of pedestrian movements are summarized graphically in Figure 3.5. As can be seen in the graphic, a wider array of pedestrian movements was witnessed than in the previous two surveys. However, some general trends can be determined. Two major attractions for pedestrians in this corridor are the LaFayette Plaza and the Barnes & Noble book store, including their parking lots. Seventeen (17) pedestrians were observed crossing Summit Park Drive in between these two areas during the five (5) hour survey. Another trend observed is that more pedestrians are walking along the southern side of Summit Park Drive than the northern side, especially between Home Drive/Chauvet Drive in the west and the Barnes & Noble parking lot in the east. Not many pedestrians were seen walking between the Wal-Mart/Sam's Club area and the Barnes & Noble/LaFayette Plaza area, and not many pedestrians were seen getting on or off of buses. A final trend that was observed is that several pedestrians were seen traversing the hillsides to Circuit City and the Microtel Hotel, locations where no steps or sidewalks exist. Numerous pedestrians were seen going up and down Chauvet Drive towards Target.

3.6 Pedestrian Counts Collected Between the Showcase Cinema, The Mall at Robinson and Various Restaurants in Robinson Township

The survey at this location was conducted on two (2) separate dates and times:

- 7:00 –9:00 PM, Friday, July 20, 2007
- 9:00 –11:00 PM, Saturday, September 29, 2007

These four (4) hours of pedestrian movements are summarized graphically in Figure 3.6. One of the purposes of conducting a pedestrian survey in this location was to see the pedestrian movements of school kids on a Friday or Saturday night, as they walk between The Mall at Robinson, the Showcase Cinema West and the restaurants in the area, including TGIF's and Applebee's. One of the trends in pedestrian traffic is that quite a few pedestrians were observed crossing Robinson Lane between TGIF's and the Showcase Cinema parking lot. Due to the fact that many of these pedestrians were wearing TGIF uniforms, it was assumed that many of the TGIF employees park in the Showcase Cinema parking lot. Another trend observed was that there were many pedestrians observed going between the restaurants located by the Mall, The Mall at Robinson and the bus shelter located at the corner of Park Manor Boulevard and Robinson Center Drive, many of which cross Robinson center Drive at the traffic signal. Although the exact routes that were taken were not recorded, twenty-seven (27) pedestrians were observed going to and from The Mall at Robinson, during the four (4) hours of observation.

3.7 Locations of Needed Steps

During the field views and pedestrian surveys, Mackin and ACTA observed several locations where pedestrians were climbing or transcending hillsides. As was done for the sidewalk priorities, Mackin developed a series of step priorities. Criteria used in developing these priorities were as follows:

- The location did not have any existing steps;
- The location shows signs of pedestrian activity with desire lines. Some desire lines are stronger than others, as they appeared more worn and wider;
- Pedestrians were witnessed at the location, either during a field view or during one of the four pedestrian surveys conducted; and
- The hillside was too steep for sidewalk alone;

As can be seen in Figure 3.7, there are seven (7) locations that Mackin feels warrant the need for steps. A description of each location, in order of importance, follows:

Step Location 1 –From the corner of Park Manor Blvd and Robinson Centre Drive down to The Mall at Robinson area, in Robinson Township. Approximate length – 104 feet. Priority – High. Currently,

Step Location 1 - From the corner of Park Manor Blvd and Robinson Centre Drive down to The Mall at Robinson area, in Robinson Township.

sidewalk exists on the eastern side of Robinson Centre Drive and the southern side of Park Manor Blvd. However, these routes are longer than some pedestrians are willing to take, as numerous walking paths were observed coming from Robinson Centre Drive and Park Manor Blvd down the hill to the Mall ring road. For a direct route from the corner of Park Manor Blvd and Robinson Centre Drive to The Mall at Robinson, it is recommended that steps and sidewalk be constructed as shown in Figure 3.8. According to Dave McGaffin, Manager of The Mall at Robinson, the empty lot just south of the National City Bank was being developed by Abby Carpet. Abby Carpet, or whoever develops this empty parcel should be involved in the design of the proposed steps and sidewalk, since they will be walking through the property.

Step Location 2 –From Summit Park Drive, approximately 100 ' south of the bridge over SR 60, up to the Lowes parking lot, in North Fayette Township. Approximate length –52 feet. Priority –High. Currently two (2) walking paths were observed on the hillside from Summit Park Drive to the Lowes parking lot. This path cuts the corner for those pedestrians who would otherwise be forced to use Montour Church Road or Andrew Drive to access Lowes, McDonalds, Cracker Barrel, Wal-Mart and other commercial buildings. Chapter 7, Robinson Town Centre/ The Pointe Interchange Bridge over the Parkway, of this report details the construction of a walking path across the bridge, continuing on towards Montour Church Road and Andrew Drive. The construction of these stairs could be included as part of that project.

Step Location 2 - From Summit Park Drive, approximately 100 ' south of the bridge over SR 60, up to the Lowes parking lot, in North Fayette Township.

Step Location 3 –From Summit Park Drive, approximately 150 ' north of intersection with SR 60 westbound on and off ramps up to the Office Max parking lot, in Robinson Township. Approximate length – 28 feet. Priority – Medium. Pedestrians are using this hillside to cut the corner between Summit Park Drive and the Office Max, PNC Bank, DSW Shoe Warehouse and east on Park Manor Blvd. As with step location 2, the construction of these stairs could be included as part of the SR 60 bridge walkway project.

Step Location 4 –From the corner of Summit Park Drive and Chauvet Drive up to the Microtel Hotel parking lot, in North Fayette Township. Approximate length –23 feet. Priority –Low. Note that some sidewalk would need to be constructed as well to connect to the hotel parking lot.

Step Location 5 –From the corner of Summit Park Drive and the driveway behind Barnes & Noble up to the Circuit City parking lot, in North Fayette Township. Approximate length –35 feet. Priority –Low.

Step Location 6 - From Park Manor Boulevard, approximately 400 'from the corner of Park Manor Blvd and Robinson Centre Drive, down to the IKEA Distribution Center and Robinson Town Centre parking lot, in Robinson Township.

Note that some sidewalk would need to be constructed as well to connect to the Circuit City parking lot.

Step Location 6 – From Park Manor Boulevard, approximately 400 'from the corner of Park Manor Blvd and Robinson Centre Drive, down to the IKEA Distribution Center and Robinson Town Centre parking lot, in Robinson Township. Approximate length – 45 feet. Priority – Low. Currently 175 'of sidewalk exists along the northern side of Park Manor Blvd. This sidewalk would need to be extended some 175 'to the top of the proposed stairs.

Step Location 7 – From the corner of Summit Park Drive and Quinn Drive up to the Wal-Mart ring road and parking lot, in North Fayette Township. Approximate length – 41 feet. Priority – Low. One (1) walking path was observed from Quinn Drive up the hill to the Wal-Mart ring road and one (1) walking path was observed from Summit Park Drive up the hill to the Wal-Mart ring road. The proposed steps would split the difference between these two locations. Note that some sidewalk would need to be constructed as well to connect the steps to the corner of Quinn Drive and Summit Park Drive.

3.8 Recommended Mid-Block Crosswalk Locations

There are several locations within the study area where pedestrians are crossing the street at mid-block locations or at stop controlled intersections where the pedestrian protection is inadequate or absent. Mackin has identified ten (10) of these locations, and has given them a priority ranking similar to what was done for the steps and sidewalk. A typical crosswalk treatment would include the following, unless otherwise stated:

- A fluorescent yellow-green PEDESTRIAN sign (W11-2) with an AHEAD sign (W16-9P) underneath it on each approach to the crossing;
- A fluorescent yellow-green PEDESTRIAN sign at the actual crossing with a DIAGONAL DOWNWARD POINTING ARROW sign (W16-7P) underneath it, on each approach; and
- A longitudinal or diagonal crosswalk pattern in addition to the typical transverse lines. This will provide greater emphasis. Use white thermoplastic pavement markings for longer durability.

These locations can be seen graphically on the Proposed Locations for Crosswalk Improvements Figure 3.9. A description of each location follows:

Crosswalk Location 1 – Across Park Manor Blvd between the IKEA and Robinson Town Centre bus shelters, in Robinson Township. Priority – High. A pedestrian count was conducted here, as was described this Chapter. This count determined that approximately eight (8) pedestrians per hour are crossing Park Manor Blvd in this area during peak travel times, a fairly significant amount considering that no crosswalk or signal is present. Additionally, responses from the public survey stated that it is difficult for pedestrians to cross here due to the high traffic volumes, poor sight distances and lack of gaps in traffic.

Alternative 1 – A crosswalk should be installed across Park Manor Blvd directly between the two (2) bus shelters as shown in Figure 3.10. The existing traffic median on Park Manor Blvd should be cut so that

the crosswalk can continue through the median, at grade with the existing roadway. This Alternative would include the appropriate signing and pavement markings on Park Manor Drive but not the extension of the sidewalk into Robinson Town Centre.

Alternative 2 – Note that the Figure also shows a pedestrian walkway that proceeds through the Robinson Town Centre parking lot. This resulted from a Steering Committee request to design a "parking lot path for peds". This is a great location for a parking lot path for peds because many of the pedestrians counted were walking to and from Robinson Town Centre. Also note in the Figure that the Robinson Town Centre parking lot is being reconstructed so that the ring road is cut off. This is not necessary, if opposed. Another crosswalk across the ring road would be recommended instead. Outdoor Tube System lighting by Kim Lighting can be used to light the parking lot path for peds, to be consistent with the existing lighting in the commercial area. Additionally, benches, bike racks, water fountains, and garbage receptacles can all be included along the path, to provide for a park-like feel.

Parking lot path for pedestrian amenities—benches, bike racks, water fountains, garbage receptacles, etc., www.pedbikeimages.org, Annie Lux

Crosswalk Location 2 – Across The Mall at Robinson ring road, in Robinson Township (three locations). Priority –High to Medium. If the steps proposed in this Chapter are built (Steps 1), it is recommended that a sidewalk be built connecting the steps to The Mall at Robinson ring road as shown in Figure 3.8. From here, a crosswalk should be installed across the ring road connecting to new sidewalk in the existing island. The new sidewalk should be extended to meet the existing sidewalk, leading to The Mall. If the steps are not built, it is obviously not recommended to construct this sidewalk and crosswalk (2b) . Instead, one or both of the proposed adjacent sidewalk paths and crosswalks should be constructed as in Figures 3.11 and 3.12 (Crosswalks 2a and 2c). Both will provide a continuous path between the restaurant area and The Mall at Robinson.

Crosswalk Location 3 –Across The Mall at Robinson ring road as part of the connection of the Montour Trail to the Commercial Area, in Robinson Township. Priority—High, if the Montour Trail connection is made, otherwise, no priority. This crosswalk would connect the Montour Trail Extension described in Chapter 6 with The Mall at Robinson. Further detail is covered under that section.

Crosswalk Location 4 –Across Park Manor Drive between Robinson Court (near Applebee's) and the Iron & Glass Bank bus shelter area, in Robinson Township. Priority –High. A pedestrian count was conducted in this area, as was described in this Chapter. This count determined that approximately two (2) pedestrians per hour are crossing Park Manor Drive at this location during peak travel times. Note that during field views by Mackin, it appeared that an even higher number of pedestrians cross Park Manor Drive at this location than the surveys determined. Park Manor Drive is six (6) lanes wide and has a very high traffic volume at this location, adding to the difficulty and safety of crossing. A short term, cheaper solution, can be implemented, as can be seen in Figure 3.13. Under this Alternative 1, "Pedestrian Ahead" and "Pedestrian Arrow" signs are constructed on both approaches to the crossing. Heavy, thermoplastic crosswalk pavement markings should also be applied to the pavement. A more expensive, long-term solution, could be implemented, as shown in Figure 3.14. Under Alternative 2, two (2) mast arms would be installed, one on each approach of Park Manor Drive at the crossing. The mast

arms would support electronic pedestrian signs that would be illuminated at all times. Upon pedestrian activation by a push button, two (2) flashing yellow warning lights would be turned on for approximately one minute, to allow time for the pedestrian to cross. In addition to the mast arms, heavy, thermoplastic crosswalk pavement markings should be applied to the pavement.

Crosswalk Location 5 –Across Summit Park Drive between Lafayette Plaza and Barnes & Noble in North Fayette Township. Priority – Medium. A pedestrian count was conducted in this location, as was described in this Chapter. This count determined that approximately three (3) pedestrians per hour are crossing Summit Park Drive in this area during peak travel times. Some additional sidewalk and ADA wheelchair ramps would also be recommended, as can be seen in Figure 3.15.

Crosswalk Location 6 –Across Summit Park Drive at Park Lane (2 locations, 6a and 6b) as part of the connection of the Montour Trail to the Commercial Area, in North Fayette Township. Priority – Medium, if the connection is made, otherwise, no priority. These crosswalks would connect the Montour Trail described in Chapter 6 with Summit Park Drive, Park Lane, Summit Commerce Park and the North Fayette Township commercial area. Further detail is covered under that section.

Crosswalk Location 7 –Across Robinson Lane between TGIF's and the Showcase Cinema parking lot, in Robinson Township. Priority –Low. A pedestrian count was conducted in this area, as was described in this Chapter. This count determined that approximately nine (9)pedestrians per hour are crossing Robinson Lane during peak travel times. The majority of these pedestrians are believed to be employees of TGIF's. In addition to providing thermoplastic crosswalk pavement markings and appropriate signing, some additional sidewalk and ADA wheelchair ramps would also be recommended, as can be seen in Figure 3.16.

3.9 Recommended Sidewalk Connections and Desire Line Connections

The total amount of existing sidewalk within the study area was estimated at 18,960 feet, or a little over 3 and a half miles, most of which is constructed of concrete. Based on the recommendations in Figure 3.2, Pedestrian Priorities, the following lengths of sidewalk for each priority class are as follows:

- Highest Priority –3,813 linear feet
- Medium Priority –8,147 linear feet
- Lowest Priority –17,401 linear feet

Note that the section of sidewalk along Park Lane and Summit Park Drive in the west is not really sidewalk, and was not included in the linear feet totals above. This section uses the existing roadway as a walking/bike riding path by restriping the existing road with new pavement markings. Further details are included in Chapter 5, Connecting the Montour Trail to the Commercial Area.

3.10 Cost Estimates

Cost Estimates for Sidewalk Connections

The estimated costs to construct the sidewalks depends on what material is used in construction. Three (3) possible choices include crushed limestone, asphalt and concrete. Assuming that the width of sidewalk is 5 feet, the estimated costs per linear foot for each type are as follows:

- Crushed Limestone –$31/linear foot
- Asphalt –$39/linear foot
- Concrete –$63/linear foot

These estimates include labor, excavation and materials, including the construction of ADA wheelchair ramps at desired locations. Therefore, the estimated costs for constructing all of the sidewalk proposed above for each of the three priorities shown in the following Table 3.1:

Table 3.1- Cost Estimate for Sidewalk				
Priority	Total linear feet	Total estimated cost if constructed of crushed limestone	Total estimated cost if constructed of asphalt	Total estimated cost if constructed of concrete
Highest Priority	3,813	$ 118,203	$ 148,707	$ 240,219
Medium Priority	8,147	$ 252,557	$ 317,733	$ 513,261
Lowest Priority	17,401	$ 539,431	$ 678,639	$ 1,096,263
Total	29,361	$ 910,191	$ 1,145,079	$ 1,849,743

Cost Estimate for Steps

The estimated cost to construct a flight of concrete steps is approximately $200 per linear foot, assuming that the width of a step is 5 feet. This estimate include labor, excavation and materials, including the construction of hand rails at desired locations. Therefore, the estimated costs for constructing the steps is shown in the following Table 3.2:

Table 3.2—Priorities and Costs for Steps				
Location #	Location Description	Priority	Length (ft)	Estimated Cost
1	From the corner of Park Manor Blvd and Robinson Centre Drive down to The Mall at Robinson area, in Robinson Township	High	104	$ 20,800
2	From Summit Park Drive, approximately 100 'south of the bridge over SR 60, up to the Lowes parking lot, in North Fayette Township	High	52	$ 10,400
3	From Summit Park Drive, approximately 150 'north of intersection with SR 60 westbound on and off ramps up to the Office Max parking lot, in Robinson Township	Medium	28	$ 5,600
4	From the corner of Summit Park Drive and Chauvet Drive up to the Microtel Hotel parking lot, in North Fayette Township	Low	23	$ 4,600
5	From the corner of Summit Park Drive and the driveway behind Barnes & Noble up to the Circuit City parking lot, in North Fayette Twp.	Low	35	$ 7,000
6	From Park Manor Boulevard, approximately 400 'from the corner of Park Manor Blvd and Robinson Centre Drive, down to the IKEA Distribution Center and Robinson Town Centre parking lot, in Robinson Township	Low	45	$ 9,000
7	From the corner of Summit Park Drive and Quinn Drive up to the Wal-Mart ring road and parking lot, in North Fayette Township	Low	41	$ 8,200
Totals			328	$ 65,600

Cost Estimates for Crosswalks

The estimated costs to construct the mid-block crosswalks include the thermoplastic pavement marking material and signing and the costs for sidewalks and ADA wheelchair ramps, unless otherwise stated.

Therefore, the estimated costs for constructing the crosswalks are shown in the following Table 3.3:

Table 3.3—Priorities and Costs for Crosswalk Treatments

Location #	Location Description	Priority	Estimated Cost—Alt 1	Estimated Cost—Alt 2
1	Across Park Manor Blvd between the IKEA and Robinson Town Centre bus shelters, in Robinson Township	High	$11,200	$68,400
2a	Across The Mall at Robinson ring road, in Robinson Township (at Joe's Crab Shack area)	Medium	$2,060	NA
2b	Across The Mall at Robinson ring road, in Robinson Township (from proposed steps)	High*	$2,060	NA
2c	Across The Mall at Robinson ring road, in Robinson Township (at Park Manor Blvd)	Medium	$2,060	NA
3	Across The Mall at Robinson ring road as part of the connection of the Montour Trail to the Commercial area, in Robinson Township	High*	Cost estimate included in Chapter 5	
4	Across Park Manor Drive between Robinson Court (near Applebee's) and the Iron & Glass Bank bus shelter area, in Robinson Township	High	$2,370	$32,500
5	Across Summit Park Drive between Lafayette Plaza and Barnes & Noble in North Fayette Township	Medium	$2,060	NA
6a	Across Summit Park Drive at Park Lane (western side) as part of the connection of the Montour Trail to the Commercial area, in North Fayette Township	Medium*	Cost estimate included in Chapter 5	
6b	Across Summit Park Drive at Park Lane (eastern side) as part of the connection of the Montour Trail to the Commercial area, in North Fayette Township	Medium*	Cost estimate included in Chapter 5	
7	Across Robinson Lane between TGIF's and the Showcase Cinema parking lot, in Robinson Township	Low	$1,440	NA

* Dependant on whether the corresponding project gets built or not. If not, no priority.
NA = Not Applicable.

The Challenge: The bus stop at IKEA has the potential to be a "super stop" because it is the hub of both Port Authority and Beaver County Transit service in the airport corridor.

The Investigation and Analysis: The area around IKEA is fairly built-out at present, complicating the possibility of locating a super stop at this location. In addition, the Port Authority has purchased property near the interchange with the Parkway West and Routes 22/30. Because of easy access to the Parkway West at this site, the Port Authority has proposed using the site for a park-n-ride lot.

Potential Solution: Locate the transit transfer center at or near the IKEA bus stop (reconfiguring the entrance to IKEA proposed in Chapter 7 will make this proposal more feasible) and use the Port Authority's site off Route 22/30 for the Intermodal Park-N-Ride lot.

4.1 Existing Transit Service

An October, 2006 study completed for ACTA by Linare Consulting ("Study of Improved Shared Ride Transportation Services to the Robinson/North Fayette Employment Center" available on line at www.acta-pgh.org) looked at existing transit service in the airport corridor. This study was completed prior to the Port Authority's service cuts in mid-2007. At present both the Port Authority of Allegheny County and Beaver County Transit Authority offer service in the commercial area. The primary routes that serve the commercial area are:

Primary Routes

28X Airport Flyer is operated by the Port Authority of Allegheny County. It operates between Oakland in the City of Pittsburgh and Pittsburgh International Airport. Weekday service offers 42 inbound trips from the airport to Oakland starting at 5:55 a.m. and ending at 12:05 a.m. Outbound service starts at 4:55 a.m. and ends at 11:00 p.m. There are 41 weekday trips. Saturday, Sunday and holiday service offers 39 trips in each direction. Weekday trips are about 25-30 minutes apart. Weekend trips are most often 30 minutes apart.

Bus Service

Route 6 is the only route operated by Beaver County Transit Authority. Service extends from the Rochester Transportation Center in Beaver County and the IKEA bus stop with major stops at BCTA's Express Transportation Center and Pittsburgh International Airport. On weekdays service inbound operates between 5:30 a.m. and 6:42 p.m. Outbound operates from 6:56 a.m. to 8:16 p.m. with ten trips in each direction. Saturday service also offers ten trips in each direction. There is no service on Sundays.

21C West Park operates between Downtown Pittsburgh and The Mall at Robinson. There are 30 trips in each direction on weekdays. However, only 8 trips in each direction serve the Robinson-North Fayette commercial area. Saturday service provides 22 trips in each direction with 12 trips in each direction serving the commercial area. On Sundays there are 18 trips in each direction with 10 trips serving the commercial area.

26E Robinson-Imperial provides service from Imperial to Downtown Pittsburgh. There are nine trips inbound to Downtown Pittsburgh and seven trips outbound to Robinson-Imperial weekdays. Of those trips six inbound and five outbound serve the commercial area. There is no weekend or holiday service.

28M Campbells Run Express, a relatively new service, operates weekdays only between Pittsburgh Technical Institute and Downtown Pittsburgh with five trips in each direction. However, only one trip in each direction 10:47 p.m. to Pittsburgh and 6:53 a.m. to Robinson serves the commercial area. There is no weekend or holiday service on the 28M.

Feeder Route

With the cuts in service made by the Port Authority in mid-2007, only one of three feeder routes was retained:

25A Robinson-Moon Coraopolis operates from The Mall at Robinson to the Neville Island park and ride lot. It serves a number of residential stops in Moon Township as well as Cherrington Corporate Center, RIDC Park West, the Airport Office Park, and Robert Morris University. Travel time for the route (one direction) is just over an hour. There are 18 trips in each direction on weekdays. Service begins at The Mall at Robinson at 6:02 a.m. with the last trip of the day at 10:10 p.m. The first trip from Neville Island is at 6:42 a.m. with the final trip of the day at 9:29 p.m. There are seven Saturday trips in each direction and 5 Sunday and holiday trips in each direction.

4.2 Bus Stops in the Commercial Area

There are 23 bus stops within a one-mile radius of the IKEA bus stop:

- Park Manor Drive and Park Manor Boulevard
- Steubenville Pike and Tonidale
- Park Manor Drive and Iron and Glass Bank Drive
- Andrew Drive and Summit Park Drive
- Steubenville Pike and Bayer Road
- Steubenville Pike and Montour Church Road
- Steubenville Pike and Steubenville Pike E.
- Wall-Mart Entrance
- Steubenville Pike and Pittsburgh Technical Institute Drive
- Steubenville Pike Opposite Pittsburgh Technical Institute Drive
- Summit Park Drive and Opposite Quinn Drive
- Summit Park Drive and Chauvet Drive
- Summit Park Drive and Home Drive
- Summit Park Drive and Quinn Drive
- Summit Park Drive and Chauvet Drive
- Steubenville Pike and Calgon Drive
- Campbells Run Road and Pittsburgh Chop House
- The Mall at Robinson Entrance K
- Steubenville Pike and Hightower Drive
- Steubenville Pike and Hankey Plaza
- Steubenville Pike Opposite Hankey Plaza
- Steubenville Pike Opposite Wendys

Bus Stop in Robinson Town Centre

4.3 "Commuting in the Corridor"

A summary of two studies previously commissioned by ACTA, the Linare study, "Study of Improved Shared Ride Transportation Services to the Robinson/North Fayette Employment Center" published in October, 2006 and the results of a number of surveys conducted and analyzed by Tripp Umbach in 2005 (employer and employee surveys, bus rider surveys, and private shuttle provider survey) will be published by ACTA in early 2008. "Commuting in the Corridor" will be available a www.acta-pgh.org. This study looks at where jobs are located, where people are commuting from and what commuting options are available to them. Finally, gaps in the daily commute are identified with suggestions for how to bridge those gaps.

4.4 ACTA's Shuttles

ACTA operates two shuttle buses. The shuttles are funded by a grant from the Job Access and Reverse Commute Program. The purpose of the shuttles is to bridge the gap between the bus stop and the work site. One shuttle, started in the spring of 2004, operates between Penn Center West office park and the West Busway. The shuttle was started based on a request from ACTA member Penn Center West (Soffer Organization) to help a new tenant (OSI, a call center) get transit-dependent employees from the bus stop to the job site (a half-mile trip up a steep hill). The targeted employees earn slightly above minimum wage. ACTA originally contracted with ACCESS to provide 12 trips per day between the Port Authority bus stop on Campbells Run Road and Penn Center West. ACTA then worked with OSI to build the ridership on these trips so that eventually the Port Authority assumed all trips that coordinated with the mainline service on Campbells Run Road. The last Port Authority trip was at 4:00 p.m. Consequently, workers working into the evening had no bus service. In order to accommodate evening quit times for these employees, ACTA contracted with ACCESS to provide the late afternoon and evening trips. Since there is no connecting service on Campbells Run Road during the evening, the ACTA shuttle takes workers to the West Busway in Carnegie. Without the ACTA shuttle, these workers would not be able to get home from work. The service operates every 30 minutes weekdays from 4:30 to 8:30. Over the past year, ridership on this shuttle has increased significantly. For example, most recently, the ridership in November, 2007 increased to 527 riders from 405 riders in November, 2006. Average riders per hour on the Penn Center West Shuttle is seven.

ACTA Shuttle

In November, 2005, ACTA began an on-demand shuttle service to connect workers riding the 28X (Port Authority) and Route 6 (Beaver County Transit Authority) to job sites within a 1.5 mile radius of the IKEA bus stop. The service was started at the request of Bayer and its employees when they discovered that the rerouting of a Port Authority bus would leave them without service. Currently employees from a number of businesses in the commercial center including Bayer, FedEx Ground, Thermo Fisher Scientific, Wal-Mart, IntraCorp and GlaxoSmithKline use the shuttle. The on-demand shuttle (a first for the airport corridor) operates weekdays from 6:30 a.m. to 8:30 a.m. when it meets riders at IKEA (28X and Route 6 stops). Shuttle riders make individual reservations with the shuttle driver to be picked up in the afternoon between 4:00 p.m. and 6:00 p.m. to return to the IKEA stop. ACTA contracts with ACCESS to provide the service. Because this service operates on a very limited schedule and continued funding has been an issue ACTA has not widely publicized this service. New ridership develops mostly by word of mouth. Despite these limitations, monthly ridership has increased from 298 riders in November, 2006 to 681 riders in November, 2007. Average riders per hour on the Penn Center West Shuttle is eleven.

4.5 Transit Transfer Center

It is Mackin's suggestion that an improved transit transfer center be constructed in the Robinson Township/North Fayette Township commercial center at or near the IKEA and Robinson Town Centre bus shelters on Park Manor Blvd. This location is currently heavily used by bus patrons and is the interconnection between Port Authority of Allegheny County (PAAC) and Butler County Transit Authority (BCTA). It is also a stopping location for the ACTA Shuttle, which transports employees and customers from this bus stop to their locations. This location is more centrally located and more easily accessible by pedestrians than the proposed Port Authority Intermodal Park-N-Ride. With sidewalk, crosswalk and traffic signal improvements, this location could become more pedestrian friendly. Based off of the pedestrian surveys discussed in Chapter 3, this location ranks as one of the highest for pedestrian movements within the whole commercial area and seems to be the "unofficial" town center in the Robinson Township commercial area.

4.6 Intermodal Park and Ride

The proposed Port Authority Intermodal Park and Ride is to be located on the southern portion of Montour Church Road off of the US 22/30 - Old Steubenville Pike / Bayer Road Exit in North Fayette Township. Mackin believes that this surface lot should be constructed to provide convenient parking/bus connections for those commuters destined for Downtown or Oakland due to the increasing extensive traffic backups at the Fort Pitt Tunnel and the escalating price of fuel. It's location near the interchange with the Parkway West and 22/30 is ideal for vehicular access. It will not, however, effectively serve those bus patrons working and shopping in the commercial area, unless Montour Church Road is extended down the hill to the Montour Church Plaza. The Montour Church Road connection should also include the construction of sidewalk from the Intermodal Center to Summit Park Drive. By connecting the northern and southern portions of Montour Church Road, motorists will have better access to the Intermodal Park and Ride Lot via the Robinson Town Centre / The Pointe Interchange as well as the Montour Run Road Interchange. Furthermore, with this connection, bus service through the commercial area along Summit Park Drive will have access to the Park and Ride Lot and thus, patrons of the Park and Ride will be able to access the commercial area for shopping or working via walking, bus or shuttle service.

It is for these reasons that Mackin suggests that the PAAC Intermodal Park-N-Ride Lot and the Transit Transfer Center be two different facilities since they will serve different needs. The Transit Transfer Center would be used primarily as a transfer location, as well as a bus stop for individuals wanting to work and shop in the Robinson Town Centre and surrounding retail areas. The PAAC Intermodal Park and Ride Lot would be used primarily as a park-n-ride facility for commuters wishing to travel to and from the City of Pittsburgh. However, by connecting the northern and southern sections of Montour Run Road, the lot can also be used as a stop for individuals wanting to work and shop in the Pointe at North Fayette and surrounding retail areas, in addition to providing better vehicular access to the lot.

The Challenge: At present, The Montour Trail does not have good access to the commercial areas like The Pointe at North Fayette, Robinson Town Centre or The Mall at Robinson.

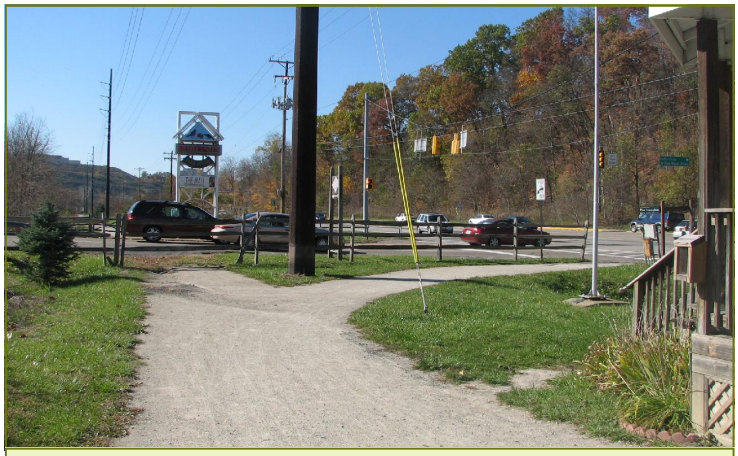
The Investigation and Analysis: Based on a review of the study area, two potential connections are possible, a western connection via Summit Park Drive and an eastern connection accessing The Mall at Robinson and The Commons areas. On the eastern side, Mackin investigated an on-road connection via Park Manor Boulevard and an off-road connection by constructing a Montour Trail Spur up the hill through to woods to The Mall at Robinson.

Potential Solution: On the western side, Mackin suggests a Montour Trail Spur which would go through the Association of Theological Schools property and intersect Summit Park Drive. From here, a 5 'walk/bike path would be provided on the existing Summit Park Drive Bridge by narrowing the travel lanes. Finally, a 6 'walk/bike path could be provided on existing Park Lane Drive along the northern and eastern sides by narrowing the lanes, to connect with Summit Park Drive and the retail areas. On the eastern side, Mackin suggests an off-road connection by constructing a Montour Trail Spur that goes from the existing Trail across from the YMCA on Montour Run Road, up the hill to The Mall at Robinson ring road. The trail would never have a grade higher than 5% by following a series of switchbacks. Benefits of an off-road connection include interest by the Mall, separation of vehicle and bikes, and the fact that no stream crossing is needed.

Probable Cost: The opinion of probable costs for the western and eastern connections are $21,400 and $250,000, respectively.

5.1 The Montour Trail

The Montour Trail is a multi-use non-motorized recreational rail-trail that runs through the study area in a general east-west direction following Montour Run Road in the western portion of the study area and following Coraopolis Heights Road—Cliff Mine Road in the eastern portion of the study area, as can be seen in Figure 1.1. The trail currently does not have good access to the commercial areas like The Pointe at North Fayette, Robinson Town Centre or The Mall at Robinson. As can be seen in Figure 1.1, the most logical choices for connection to the trail would be at Summit Park Drive in Findlay Township and at Park Manor Boulevard in Moon Township since these two roads intersect the Montour Trail. Park Manor Boulevard intersects the Montour Trail at grade at a pedestrian actuated crossing. Summit Park Drive travels over the Montour Trail and Montour Run via a four lane bridge. Access from Summit Park Drive to the Montour Trail is currently provided by an asphalt sidewalk approximately 600 'down Coraopolis Heights Road—Cliff Mine Road to the southwest.



The Montour Trail crossing of Park Manor Drive in Moon Township.

Mackin was asked to look into establishing a better connection between the Montour Trail and the commercial area, either on or off-road, for several reasons, including:

- » Survey information indicated that this was a requested amenity by the public;
- » By providing a connection for pedestrians and bicyclists, it would make the area more inter-modal. The Allegheny County Comprehensive Plan states that this area is considered an inter-modal center; and
- » The Montour Trail is a part of a larger tourism industry, the Great Allegheny Passage. Plans are in the works for the trail to be connected to the airport, which in turn, will create a connection all the way to Washington D.C. in the near future. The trail also connects to the Panhandle Trail, which goes all the way to West Virginia.

Mackin looked at connections on both sides of the study area, as discussed earlier. These two connections are discussed separately, as the western and eastern connections.

5.2 Connection of Park Lane to the Montour Trail across Summit Park Drive Bridge (Western Connection)

Mackin investigated a connection between the Montour Trail and Summit Park Drive. The current connection can be accomplished by walking approximately 600 ’down Coraopolis Heights Road—Cliff Mine Road on an asphalt sidewalk to the southwest. Unfortunately, this connection may not be know to exist by the general public as it is not signed as such. Additionally, it is not very safe for pedestrians to cross the Summit Park Drive bridge over the trail. The bridge is currently 49 ’-4 ” wide, barrier to barrier, with a 3 ’shoulder on the southwestern side of the bridge and a 1.5 ’shoulder on the northeastern side of the bridge. Furthermore, the bridge parapet is only 3 ’high, offering an insecure feeling while crossing the bridge. Finally, there is no existing sidewalk from this bridge to the commercial area in North Fayette Township. Pedestrians currently use either Summit Park Drive or Park Lane, neither of which has sidewalk. Pedestrians probably walk in the grass along the sides of the road or in the shoulder or curb gutter. Bicyclists travel on road with the traveling public.

Looking up Summit Park Drive to the southeast across the bridge. The area to the right is the proposed location of the Montour Trail spur.

To provide a better western connection, Mackin proposes the following, as shown in Figure 5.1. What is shown in the Figure could be built as three independent projects or all as one project. The three projects are as follows:

- » Project 1 –Montour Trail Spur to Summit Park Drive
- » Project 2 –Summit Park Drive Walk/Bike Path
- » Project 3 –Park Lane Drive Walk/Bike Path

Project 1 – The first project would be to provide a pedestrian and bicycle path from the Montour Trail to the northwestern side of the bridge through the Association of Theological Schools property, around the existing guide rail. The proposed location of this trail spur can be seen in the adjacent photo. This connection would cut the distance between the bridge and the existing trail by approximately 660 ' from what it currently is. By providing signs directing people to the trail, this connection might attract more users to the trail. Due to the grade differential between Summit Park Drive and the existing Montour Trail, a ramp could be constructed along the hill as shown in Figure 5.1. This ramp should not exceed a 5% grade and is estimated at 300 .' Assuming that this trail spur is constructed in a similar manner to the existing Montour Trail, the estimated cost of the trail spur would be $9,400, which includes excavation, paving, landscaping and signing.

Project 2 – The second project for the western connection would be to provide a 5 ' walk/bike path on the existing Summit Park Drive bridge to provide a safer crossing. The 5 ' pathway would be established on the southwestern side of the bridge by adjusting the lane widths. Removal of existing pavement markings and placing new pavement markings for an estimated 600 ' of Summit Park Drive, indicating the adjusted lane widths, would be required to accommodate this change. Since 2 ' would need to be picked up to increase the shoulder from 3 ' to 5 ,' these 24 " would need to be taken from the four (4) existing lanes, or 6 " from each. Therefore, the four (4) existing 11 '-2.5 " lanes would be reduced to 10 '-8.5 ". These changes can be seen graphically in Figure 5.1. The expected cost of pavement marking removal and installing the newly aligned pavement markings would cost approximately $3,600.

Project 3 – The third project of the western connection would be to provide a 6 ' walk/bike path on existing Park Lane Drive along the northern and eastern sides as shown in Figure 5.1. The pathway would be established by adjusting the lane widths, the same as was recommended for the second project on the Summit Park bridge. Removal of existing pavement markings and placing new pavement markings indicating the adjusted lane widths would be required to accommodate this change. The existing width of Park Lane Drive, a two (2) lane road, is 33 ' from curb to curb, with two (2) 1.5 ' shoulders and two (2) 15 ' lanes. By adjusting the lane widths from 15 ' to 12 ,' we can gain 6 ' of pathway. This pathway would be delineated by a white 6 " edge line. Please note that this pathway is not a raised sidewalk, but is actually at grade with the existing roadway. It could be constructed as a raised asphalt or concrete sidewalk; however, this would be more costly and is not recommended at this time. In addition to the above, crosswalks are proposed at each end of Park Lane Drive in order to cross Summit Park Drive. The expected cost of this third project , which includes pavement marking removal and installing the newly aligned pavement markings and crosswalks would cost approximately $8,400.

This proposed walk/bike path from the Montour Trail to the intersection of Park Lane Drive and Summit Park Drive (eastern intersection) and the commercial area also is shown on the Pedestrian Priorities Figure 3.2. Note that the first project (Trail Spur) has lowest priority, while the second (Summit Park bridge) and third (Park Lane Drive) projects have medium priority.

5.3 Connection to The Mall at Robinson (Eastern Connection)

Mackin investigated a connection between the Montour Trail and the eastern end of the commercial area, including The Mall at Robinson and The Commons areas. The current connection can be accomplished by going up Park Manor Boulevard from Montour Run Road; however, no sidewalk exists so pedestrians and bicyclists would be forced to proceed off road in the grass or on the roadway with the existing traffic, both undesirable conditions.

Mackin was asked to look into establishing a better connection between the Montour Trail and the eastern commercial area, either on or off-road. After considering several options, it was decided that an

off-road connection between the Montour Trail and The Mall at Robinson ring road was most preferable because:

- Bicycle traffic would be completely separated from vehicular traffic;
- The Mall at Robinson is interested in this connection, so there's a higher probability of future implementation;
- The Mall (Forest City) owns the property. Therefore, multiple owners would not need to be dealt with;
- A location for the off-road trail can be found where there is no stream crossing, therefore no new bridge construction;
- The grade of the off-road trail could be constructed at 5% grade or less, which is less than the grade of Park Manor Boulevard in places;
- There is a park-n-ride lot proposed in the Mall parking lot (266 spaces) close to this area, making the use multi-modal;
- The Boy Scouts created and maintain a nature trail in the same area as the proposed connection to the Montour Trail;
- Signage could be placed on the existing trail directing bicyclists and pedestrians to the retail area and the food court; and
- This connection would help the mall in its application for a LEED (Leadership in Energy and Environmental Design) certification, which would make The Mall at Robinson the first green mall in the country.

Figure 5.2 shows the proposed location of the Montour Trail Extension to The Mall at Robinson. This connection would start at the existing Montour Trail in Robinson Township, across from the Western Area YMCA on Montour Run Road, and ascend the hill through the wooded area beneath the mall, switching back and forth from east to west so that the grade is no greater than 5%. When the trail reaches The Mall at Robinson ring road, it would run adjacent to it for a short stretch and then cross the ring road at the most northern point, in the vicinity of the Macy's Department Store. Newly constructed sidewalk or pavement markings through the mall parking lot would carry on the trail to Mall Entrance F, where pedestrian amenities like outdoor furniture, signage and bike racks could be positioned. The total length of the trail would be approximately 6,550 feet and would be constructed of a 10 'wide asphalt surface with a 5 'wide vegetated shoulder on each side for a total width of 20 feet.

Several negative issues were also introduced by this off-road trail connection, including:

- Forest City might not want to assume liability or maintenance for the trail connection; and
- Forest City is planning future development in the area, two parcels along the northern side of the ring road;

As far as liability and maintenance, the Montour Trail Council would most likely accept both liability and maintenance, assuming that this connection would be taken on as a part of the Montour Trail. This trail will have to be incorporated into the future development plans along the ring road. These two issues need to be developed further.

5.4 Environmental Issues with the Eastern Connection

Mackin was asked to conduct an environmental overview of the trail extension. This can be found in its entirety in the Appendix along with an Environmental Trail Study Corridor Map. To summarize the environmental report, the following required actions or additional investigations will be necessary to implement the proposed project:

- Alternatives or minor shifts to the trail alignment may be necessary to avoid wetland impacts. If wetlands cannot be avoided, the development of wetland mitigation plans or replacement of impacted wetlands may be required;
- Several minor stream crossings, culverts or relocations may be required;
- The project will exceed the minimum earth disturbance acreage limit and would require a NPDES permit, which requires the preparation and implementation of an Erosion and Sediment Control Plan;
- The probability for the presence of historic or archeological artifacts may be present. The completion of a Historic Structures Survey/Determination of Eligibility Report may be required;
- Impacts to the recreational Montour Trail would constitute a Section 4(f) impact and would require the preparation of a Section 4(f) Evaluation;
- Significant encroachments to the Montour Run floodplain would require a hydrologic and hydraulic (H&H) analysis;
- A Phase I Hazardous Waste Investigation may be required to determine if environmental hazards exist;
- If threatened, endangered, or species of special concern are identified during the development of the project, agency coordination and additional studies may be required;
- Due to the presence of overhead electrical transmission lines, underground gas lines and the possibility of additional utilities, utilizing the PA One Call system should occur prior to trail construction activities;
- Alternatives or minor shifts to the trail alignment may be necessary to avoid steep slopes, abandoned road beds and relict excavations in order to reduce project construction impacts; and
- The presence of an open well, pond, cisterns, solid waste debris piles and relict building foundations within close proximity to the proposed trail could potentially create safety issues if left in their current condition. The installation of exclusionary fencing, masonry caps and debris cleanup efforts could be implemented accordingly.

5.5 Cost Estimates

A preliminary construction estimate for the trail extension to The Mall at Robinson, as described above, would be approximately $250,000. This includes grading, drainage and erosion control, paving, fencing, landscaping, signing and pedestrian amenities.

The Challenge: Based off of the results of the public surveys, there was a concern for pedestrian access across the bridge that runs over State Route 60 between the two commercial business centers, The Pointe at North Fayette and Robinson Town Centre. Currently, pedestrians are walking in a 2 1/2 foot water table (shoulder) or on the median across the bridge.

Aerial Photo of Robinson Town Centre/The Pointe Interchange Bridge Over S.R. 60 in North Fayette Township.

The Investigation and Analysis: Mackin conducted a pedestrian survey, which determined that there were 19 pedestrians crossing the bridge per hour during peak vehicular travel periods, with the majority (89%) using the eastern (city) side. Furthermore, desire lines prove that these pedestrians are continuing on further without sidewalk or a safe walking surface.

Potential Solution: A potential solution is to shift the travel lanes on the bridge to the west by narrowing them and narrowing the bridge median, so that the existing 2 1/2 'eastern shoulder becomes a 6 'pedestrian walkway. The walkway could be at grade with the existing roadway (short term) or raised with concrete sidewalk (long term). In addition, the walkway should be extended to the bus shelter at the corner of Robinson Town Centre Boulevard and Park Manor Boulevard to the north and to the Wal-Mart Driveway to the south.

Probable Cost: The walking pathway could be constructed of crushed limestone, asphalt or concrete. The opinion of probable cost for the short term option is estimated at $101, 000 for crushed limestone, $112,000 for asphalt and $146,000 for concrete. The long term option, which also includes two (2) ADA Accessible Wheelchair ramps and a railing on top of the eastern bridge parapet to provide pedestrian protection, is estimated at $158,000 for crushed limestone, $169,000 for asphalt and $203,000 for concrete.

Looking across the Bridge from south to north. Note the narrow shoulder and worn walking path behind the guide rail.

6.1 The Existing Bridge Conditions

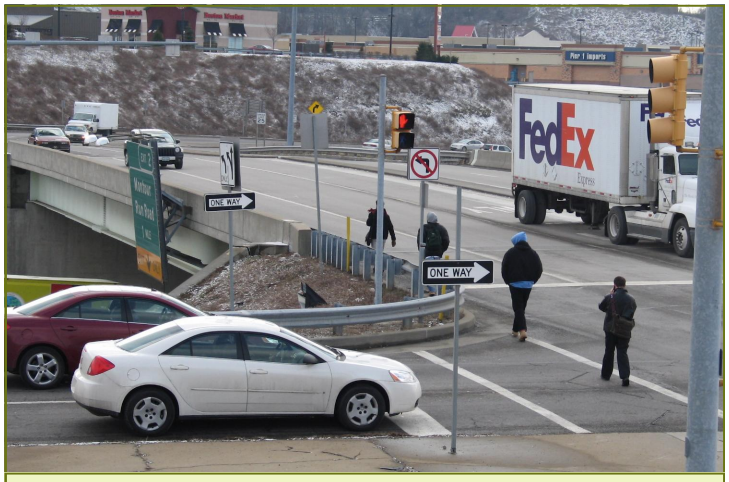
The bridge that runs over State Route 60 between The Pointe at North Fayette and Robinson Town Centre is owned and maintained by PennDOT and is designated SR 3144. This bridge over the Parkway West, also know as Summit Park Drive, is 172 feet long and 71 feet wide, barrier to barrier. The bridge has five (5) 12 'lanes, a 6 'median of which 4 'of it is raised concrete and 2 1/2 'shoulders on each side. As can be seen in the aerial photo from Google Maps to the left, there are two southbound through lanes and three lanes northbound, a left turn lane and two through lanes. The left turn lane sends vehicles onto a ramp which goes to State Route 60 northbound.

6.2 A Need for a Better Pedestrian Connection

Based off of the results of the public surveys, there was a concern for pedestrian access between the two commercial business centers. Field viewing the location, one often sees pedestrians crossing this bridge, many getting off of a bus at the bus shelter at the corner of Robinson Town Centre Blvd and Park Manor Blvd, walking south on Summit Park Drive, crossing the bridge, destined for Lowes, Wal-Mart, Sam's Club and other retail buildings. Many of these people are either shopping or going to work, and will walk the reverse trip on their way back to the bus shelter. Furthermore, pedestrian worn walking paths can be seen just beyond both ends of the bridge, many of whom continue up the hill towards Lowes, as can be seen in the aerial photo to the left.

Mackin conducted a pedestrian survey, collecting data on pedestrians walking across the bridge to determine how many pedestrians are crossing the bridge, which side they are crossing on and where are they going to and coming from. The results of this survey are described in more detail in Chapter 3 and are shown graphically in Figure 3.3. On the whole, these surveys determined the following:

- There are a considerable amount of pedestrians crossing the bridge (19 pedestrians per hour during the survey times, which were during peak vehicular travel periods);
- The majority of the pedestrians are walking on the eastern side of the bridge (89%); and
- The pedestrians are heading to/coming from numerous destinations, although the bus shelter, Lowes and Wal-Mart appear to be major origin/destinations.



A common scene; several pedestrians walking from the bus shelter in Robinson Township to The Pointe at North Fayette retail area.

That said, Mackin set out with the task of determining the best way to get these pedestrians across the bridge in a much safer manner than the current conditions. Currently, the bridge has no sidewalks and the existing shoulder is only 2 1/2 feet wide. In addition to that, some of these pedestrians, once across the bridge to the south, are stepping over the existing guide rail and walking behind it, while others are walking in front of the guide rail, where they are still in harms way of passing vehicles.

6.3 Alternative I

Mackin came up with the idea of shifting the travel lanes on the bridge to the west, so that the existing 2 1/2 'shoulder on the eastern side of the bridge becomes 6 'wide, providing a 6 'pedestrian walkway. In order to shift the travel lanes, the existing 4 'raised concrete median would need to be reconstructed or cut back to a 2 'median, the existing 12 'left turn lane will need to be narrowed to 11 ,'and the existing 12 ' center through lane would need to be narrowed to 11.5 .' In order to narrow the lanes and make this shift, existing pavement marking edge, center, and lane lines will need to be removed and new pavement markings will need to be established. These proposed changes are shown graphically in Figure 6.1.

At present, there exists a roadway project adjacent to this bridge that is in final design. The North Fayette Township project can be described as the widening of Summit Park Drive between just beyond the Andrew Drive/Wal-Mart Drive intersection and the Bridge over the Parkway, a distance of 2000 .' The section of Summit Park Drive between Montour Church Road and Wal-Mart Drive is being widened from five (5) lanes to six (6) lanes, while the section between Montour Church Road and the Bridge over the Parkway is being

widened from five (5) lanes to eight (8) lanes. Furthermore, the two signalized intersections in this section are also being redesigned, and the intersection of Summit Park Drive, Robinson Town Centre Blvd, Ramps A and B is being slightly modified to provide a protected/permissive phase northbound. The preliminary roadway plans and the proposed traffic signal permit plans for this project are shown in the Appendix.
Mackin has spoken with Bob Grimm, North Fayette Township Manager and Jeff Thompson, Project Manager at District 11-0 to request incorporating some pedestrian amenities into their Summit Park Drive widening project. Neither person had a problem with incorporating the pedestrian amenities into the existing project. It was mentioned that the North Fayette Township project does not have a letting date and doesn't appear to be on schedule for 2007 or 2008. It was also stated that this project may be under budget and thus can accommodate the changes that Mackin is proposing.

In addition to the suggestions stated earlier about shifting the lanes on the bridge and cutting the median back from 4' to 2', it is proposed to extend the pedestrian walkway in both directions along Summit Park Drive. To the north, the walkway would cross Ramp A and the channelized right turn lane of Ramp A and continue into Robinson Township to the bus shelter at the corner of Park Manor Blvd and Robinson Town Centre Blvd. To the south, the walkway would continue to Montour Church Road, cross this road and continue on to Wal-Mart Drive. These suggested changes are shown graphically in Figure 6.2, also called Alternative I. Note that the existing guide rail connected to the southern side of the eastern bridge parapet would need to be relocated to accommodate the walking path. The relocated guide rail should be transitioned or buried into the existing hillside, as shown on the plans, allowing the walking path to be located in front of the guide rail at all times. Off of the bridge, the walking path would be slightly elevated in comparison to the road surface. However, across the bridge, the walking path would be at grade with the road surface. To get the elevated walkway on the side of the road down to the level of the shoulder, a curb cut would need to be constructed just past the southern end of the bridge parapet, and the proper ADA wheelchair ramp installed. Additionally, several signs are recommended to warn motorists of crossing pedestrians. These signs are shown on the attached figures. This option is considered Alternative 1, where the existing shoulder, or water table, of the bridge is widened and used as the pedestrian walkway.

6.4 Alternative II

Alternative II takes this a step further, in which a 4" concrete sidewalk is constructed across the eastern side of the bridge, instead of the at-grade walkway. This leads to additional work, as there are two inlets, one on each end of the bridge, that will need to be accommodated. Also included with Alternative II, it is suggested that pedestrian railing be installed along the top of the bridge parapet for added protection, as the existing parapet is only 3' high. Finally, it is suggested that the pedestrian amenities provided to cross the bridge from the eastern side to the western side, be removed so that pedestrians are prohibited on the western side of the bridge. These Alternative II recommendations can be seen graphically in Figure 6.3.

6.5 Cost Estimates

Several materials were discussed for the walking path surface off of the bridge, including crushed limestone, asphalt and concrete. Assuming a 6' walking path or sidewalk width, the estimated costs per linear foot for the three (3) materials are as follows:

- Crushed limestone—$31 per linear foot;
- Asphalt—$39 per linear foot; and
- Concrete—$63 per linear foot.

The estimated costs for constructing the 1,405 ' walkway for Alternative I, assuming one of three types of walking surface are used is as follows:

- 1,405 ' of Crushed limestone—$43,555 or;
- 1,405 ' of Asphalt—$54,795; or
- 1,405 ' of Concrete—$88,515.

Additional costs for Alternative I are as follows:

- Reconstruct median on Summit Park Drive from 4 ' width to 2 ' width- $33,500;
- Remove and relocate guide rail—$3,500;
- Mobilization and Maintenance and Protection of Traffic (MPT) - $19,000;
- Pedestrian signing three (3) "Pedestrian" signs (W11-2) and one "Diagonal Down Arrow" sign (W16-7) —$780; and
- White and Yellow pavement marking epoxy material—$840;

Alternative II, which elevates the walkway across the bridge from the existing shoulder to concrete sidewalk, has the following additional costs:

- Construct a 5 ' sidewalk with barrier curb from the intersection at Ramp A across bridge approximately 375 ' to curb cut. At curb cut, sidewalk transitions and meets elevation. Maintain a 1 ' offset with the 6 ' white edge line of the right lane for northbound Summit Park Drive—$23,600;
- Provide drainage through the sidewalk to the two existing scuppers—$2,400;
- Install 172 ' of railing on top of the eastern bridge parapet to provide pedestrian protection—$13,125;
- Construct 2 ADA Accessible Wheelchair ramps, one located at the sidewalk corner radii at ramp A from the bridge and one on each side of the island on Ramp A—$2,000;
- Removal of pedestrian signal equipment (4 push buttons and 4 pedestrian signal heads) and installation of 4 "No Pedestrian Crossing" (R9-3) signs—$1,440; and
- Mobilization and Maintenance and Protection of Traffic (MPT) - $14,000.

These costs would be in addition to the costs for Alternative I.

The Challenge: Based on the results of the public surveys, the intersections of Park Manor Blvd with the PNC/DSW Shoes Driveway & the IKEA Driveway are considered two of the intersections that need addressed most within the study area. The main complaint is that drivers are having a very difficult time making a left turn onto Park Manor Boulevard during peak travel periods, from the two stop-controlled driveways.

The Investigation and Analysis: Field views by Mackin determined that the left turn out of these intersections can be difficult to make due to the lack of gaps in traffic in both directions on Park Manor Boulevard. The lack of gaps can be attributed to the lack of traffic signals on Park Manor Boulevard and the number of high volume staggered driveways feeding onto it. Discussions with IKEA also revealed that they often hire police on the weekend to help their customers exit the IKEA parking lot onto Park Manor Boulevard.

Potential Solution: A potential short term solution would be to eliminate left turns from the PNC/DSW Shoes Driveway. To do this, the traffic island on PNC/DSW Shoes Driveway should be increased in size. This does not address the IKEA Driveway, however. A potential long term solution would be to eliminate the left turns out of the PNC/DSW Driveway and construct a reverse jug handle on Park Manor Boulevard that would send vehicles back towards Robinson Town Centre Boulevard. Additionally, the IKEA Driveway could be relocated so that it is directly across from the existing Robinson Town Centre Driveway. This "new" intersection would most likely warrant a traffic signal.

Probable Cost: The probable cost for the short term solution was estimated at $3,500 which includes signs and a newly constructed traffic island. The long term probable cost for the jug handle would be roughly $139,600, not including property acquisition. The relocation of the IKEA Driveway would cost approximately $94,500, not including property acquisition. If this "new" intersection warrants a traffic signal, the estimated cost of signal equipment could reach $120,000, while the engineering and design of the traffic signal is estimated at $24,000.

7.1 Statement of the Problem

Based on results of the ACTA Commercial Center Mobility Study survey conducted by ACTA in 2006 and 2007, the intersection of Park Manor Blvd & the PNC/DSW Shoes Driveway (#24) and the intersection of Park Manor Blvd & the IKEA Driveway (#25) are considered two of the intersections that need addressed most within the study area. The main complaint described in the survey results concerning these two intersections is that drivers have a very difficult time making a left turn from the two driveways onto Park Manor Blvd. Note that these intersections are controlled by a stop sign on the side street only. During peak travel times, traffic volumes are high on Park Manor Blvd. Additionally, the lack of a traffic signal between Robinson Town Centre Blvd and Robinson Lane results in fairly constant traffic with little platooning of vehicles. Vehicles trying to make a left turn out of one of the four (4) internal driveways along this stretch are experiencing very few gaps in traffic to enter onto Park Manor Blvd.

The purpose of the ACTA Commercial Center Mobility Study is to improve transportation within the study area, including vehicular, bus, pedestrian and bicycle travel. In addition to the vehicular problems described above at the two intersections, there are no sidewalks along Park Manor Blvd, making pedestrian access to the many stores in Robinson Town Centre difficult. Survey results also stated that crossing Park Manor Blvd can be very difficult and dangerous, as the road curves, has inadequate sight

distance and doesn't provide many gaps in traffic. The lack of sidewalks also makes it difficult for people with disabilities to access the two bus shelters located in front of IKEA, as well as the various stores.

7.2 Alternative 1

The simplest and most reasonable solution to the problem at the intersection of Park Manor Blvd & the PNC/DSW Shoes Driveway (#24) is to eliminate left turns from the PNC/DSW Shoes Driveway. The problem with this alternative is that these vehicles would be forced to find their own route to Robinson Town Centre Blvd, many turning around in the IKEA and Robinson Town Centre parking lots, or making U-turns on Park Manor Blvd. For this alternative, it is recommended that the traffic island on PNC/DSW Shoes Driveway be increased in size to deter left turning vehicles, as can be seen in Figure 7.1. Note that this solution solves some of the safety issues at this intersection only. In order to solve the capacity issues, additional mitigation along Park Manor Blvd would be needed.

The existing traffic island at the PNC Bank/DSW Shoes Driveway is too small and shows signs of getting run over.

This alternative does not address the problems at the IKEA Driveway. A short term fix for the traffic issues at the IKEA Driveway would be to change the traffic control from side street stop control to all-way stop control. However, this is not recommended, as it is not advised to use stop control on multi-lane approaches. Trucks in adjacent lanes can block the view of the stop sign. Vehicles in adjacent lanes can block the view of oncoming vehicles, as well.

7.3 Alternative 2

The second alternative, shown in Figure 7.2, also assumes that left turns are prohibited out of the PNC/DSW Shoes Driveway as in Alternative 1. The IKEA driveway is converted to right-in-right-out by constructing a 16 'median in front of this driveway. Vehicles that are forced to make a right out of the PNC/DSW Shoe Warehouse or IKEA Driveways that wish to reach Robinson Town Centre Blvd would now use a jug handle constructed using the existing Robinson Town Centre Driveway and parking lot. By providing a new IKEA driveway across from this existing Robinson Town Centre Driveway, a four-way, plus intersection is created, rather than two offset T 'intersections. This intersection would be signalized, if warranted. By signalizing this intersection, additional gaps in traffic are provided for turning vehicles as well as pedestrian crossings. Appropriate signing would be installed to direct traffic to Robinson Town Centre Blvd.

7.4 Alternative 3

The third alternative, shown in Figure 7.3, is similar to the second alternative, except that the jug handle is located on the opposite side of Park Manor Blvd, in the existing IKEA driveway and parking lot. Appropriate signing would be installed to direct traffic to Robinson Town Centre Blvd. For Alternative 3, the existing IKEA Driveway would be converted to right-in only. A new IKEA Driveway would be constructed across from the existing Robinson Town Centre Driveway, as in Alternative 2, forming a four-way, plus intersection, which would be signalized, if warranted. By providing sidewalks, crosswalks and ADA wheelchair ramps throughout the area, pedestrians can get from IKEA to the bus shelters to Robinson Town Centre and so forth with much more safety and ease. Note that these pedestrian issues are further covered under the Pedestrian System section of this report.

The Alternatives described above were presented to IKEA at a meeting with Terri Noble and Todd Steele. They agreed that problems did exist with traffic trying to make a left out of the IKEA Driveway onto Park Manor Blvd during peak travel times. They also stated that IKEA often hires police on the weekends to help with these traffic problems. Alternatives 2 and 3 were then forwarded on to IKEA Corporate Headquarters in Conshocken, Pennsylvania to be reviewed by David Garonzik. Mr. Garonzik had reservations about these two alternatives due to their intrusion on the IKEA parking lot and driveway. Therefore, Mackin developed Alternative 4.

7.5 Alternative 4

Alternative 4, shown in Figure 4, uses a jug handle design similar to Alternatives 2 and 3. However, Alternative 4 locates the jug handle such that it does not take as much property. Alternative 4 does, however, require the construction of an eastbound left turn lane on Park Manor Blvd utilizing the existing 16 ’median. This left turn lane will direct cars into the jug handle, thus sending them back towards Robinson Town Centre Blvd. This Alternative, which is called 4A on the Figure, should improve the left turn problem out of the PNC Park Driveway.

In addition to the above, Alternative 4B, as shown on the Figure, should improve the left turn problem out of the existing IKEA Driveway. The existing IKEA Driveway would become right-in only, thus eliminating the westbound left turn lane on Park Manor Blvd into the existing IKEA Driveway. IKEA Driveway egress traffic would be directed towards a newly constructed IKEA Driveway at a four-way, plus intersection, similar to that from Alternative 2. This intersection would be controlled by a traffic signal, if warranted, or could be controlled by stop signs on the side streets, or by an all-way stop controlled condition. A westbound left turn lane would need to be constructed on Park Manor Blvd in the existing median, as can be seen in the Figure.

7.6 Suggested Alternatives

As a short term, cheaper solution for the traffic issues at the PNC Bank Driveway, Alternative 1, described above, as can be seen in Figure 7.1, is suggested. No short term, cheap solution to the traffic issues at the existing IKEA Driveway is suggested.

For a more permanent, more expensive solution, Alternative 4, described above, is suggested, and can be seen in Figure 7.4. For this Alternative to work best, the intersection of Park Manor Blvd, Robinson Town Centre Driveway and the relocated IKEA Driveway should be controlled by a traffic signal. The IKEA Driveway approach and parking lot configuration should be designed by IKEA.

7.7 Cost Estimates

- Alternative 1 would cost approximately $3,500.
- Alternatives 2 and 3 are not recommended, therefore, cost estimates were not determined.
- Alternative 4A would cost roughly $139,600, as a stand alone job, not including property acquisition.
- Alternative 4B would cost approximately $94,500, as a stand alone job, not including property acquisition.
- If Alternatives 4A and 4B were constructed as one project, the cost would be approximately $213,800, not including property acquisition.
- Adding a traffic signal at the intersection of the IKEA Driveway, Robinson Town Centre Driveway and Park Manor Blvd for Alternative 4B would add an additional $120,000 into the cost of the project.
- These costs do not include engineering, which would add about 20% more to the total project cost.

The Challenge: There are twenty-two signalized intersections within the study area. Based off of the results of the public input and steering committee meetings, signalized intersections are a major concern of this mobility study, including their operation, safety and congestion levels for vehicular, as well as bicycle and pedestrian traffic.

The Investigation and Analysis: Mackin field viewed the operation of all traffic signals, reviewed historic traffic counts and analyzed crash data throughout the study area. For intersections or road sections with high crash history, mitigation was offered. At intersections where the operations, signing or pavement markings appeared deficient, improvements were suggested. At the request of ACTA, certain intersections were analyzed in greater detail, such as the intersection of Montour Run Road / Park Manor Boulevard / Fed Ex Drive, RIDC Park West Drive / Cliff Mine Road / Aten Road, and S.R.0060 (Steubenville Pike) / Park Manor Drive / Giant Eagle Driveway. Additionally, the interconnection of traffic signals was investigated.

Potential Solution: Numerous suggestions, improvements and mitigation techniques were given to improve the safety, operation and congestion of the signalized intersections in the study area. In general, however, most of Mackin's suggestions were that an official traffic study would need to be conducted in order to determine the best course of action. One specific example of a signalized intersection improvement is to change the lane configuration on Montour Run Road at its intersection with Park Manor Boulevard and Fed Ex Drive. Currently, two eastbound left turn lanes on Montour Run Road lead to Fed Ex Drive while only one westbound left turn lane leads to Park Manor Boulevard. Traffic counts show that by removing the dual left from the western side and adding it to the eastern side, the intersection will operate with a better level-of-service. As a bonus, this change can be completed without having to make physical changes to the roadway.

One solution that could drastically affect the congestion levels throughout the study area is interconnection. By checking to make sure the existing connections are working correctly and by completing the missing links, traffic should be able to flow much better, especially along corridors like Summit Park Drive, Cliff Mine Road and Steubenville Pike.

Probable Cost: Numerous costs were introduced for the many suggested improvements, ranging from a few hundred dollars to over $200,000. Traffic studies typically cost from a few thousand dollars upward to $40,000.

8.1 Existing Signalized Intersections within the Study Area

There are twenty-two (22) signalized intersections within the limits of our study area, as can be seen in Figure 8.1. Traffic signal permit plans for each of the twenty (22) intersections were requested from PennDOT District 11-0 and reviewed. Three (3) signals are located in Findlay Township, four (4) in Moon Township, six (6) in North Fayette Township, and eleven (11) in Robinson Township. Note that intersection #3 is located in both Moon and Findlay Townships, while intersection #12 is located in both North Fayette and Robinson Townships. Table 8.1 describes the location of each of the traffic signals, along with a number used for identification throughout this section.

Table 8.1 –Signalized Intersections Located within the Study Area

#	Intersection Description	Township
1	Summit Park Drive & Cliff Mine Road	Findlay
2	RIDC Park West Drive & Cliff Mine Road & Aten Road	Findlay
3	S.R.8074 (Ramp B) & Cliff Mine/Coraopolis Heights Road	Moon & Findlay
4	S.R.3072 (Montour Run Road) & Route 60 Ramps	Moon
5	S.R.3072 (Montour Run Road) & Scott Road & Scott Blvd	Moon
6	S.R.3072 (Montour Run Road) & RPS Drive & Park Manor Blvd	Moon
7	Summit Park Drive & Home Drive & Chauvet Drive	North Fayette
8	Summit Park Drive & Chauvet Drive at Lafayette Plaza	North Fayette
9	Summit Park Drive & Andrew Drive & Wal-Mart Driveway	North Fayette
10	Summit Park Drive & Montour Church Road & Ramps C/D	North Fayette
11	Summit Park Drive & Robinson Town Centre Blvd & Ramps A/B	North Fayette
12	Robinson Town Centre Blvd & Park Manor Blvd	North Fayette & Robinson
13	Robinson Town Centre Blvd & Park Manor Blvd	Robinson
14	Robinson Town Centre Blvd & Robinson Centre Drive	Robinson
15	Park Manor Blvd & Costco Drive & Sutherland Drive	Robinson
16	Park Manor Blvd & Robinson Lane	Robinson
17	Park Manor Blvd & Robinson Centre Drive	Robinson
18	S.R.0060 (Steubenville Pike) & Park Manor Drive & Giant Eagle Driveway	Robinson
19	S.R.0060 (Steubenville Pike) & Kohl's Driveway & Ames Drive	Robinson
20	S.R.0060 (Steubenville Pike) & Campbell's Run Road & Bank Entrance	Robinson
21	S.R.0060 (Steubenville Pike) & Hightower Blvd & Site Drive 2	Robinson
22	Campbell's Run Road & Penn Centre Blvd & Private Drive	Robinson

Based off of the results of the public input and steering committee meetings, regarding traffic signal issues within the study area, Mackin was asked to do the following:

- Observe signal timings and phasing (especially left turn signals) throughout the commercial area;
- Conduct accident analyses throughout the study area and provide mitigation recommendations;
- Review public input comments concerning traffic signals;
- Review the intersection of RIDC Park West Drive & Cliff Mine Road/Aten Road (#2) for improvements, including pedestrian access;
- Collect traffic volumes at the intersection of S.R. 3072 (Montour Run Road) & Fed Ex Drive/Park Manor Blvd (#6) and review for signal upgrades;
- Request traffic volumes from URS at the intersection of S.R.0060 (Steubenville Pike) & Park Manor Drive/Giant Eagle Driveway (#18) and review for proper timing and phasing; and
- Provide recommendations and cost estimates on all of the above.

8.2 Crash Analyses

Mackin reviewed the accident reports from the following locations within the study area, to identify recurring crash locations for the purpose of determining possible remedies or mitigations:

- Intersection of S.R. 3072 (Montour Run Road), Park Manor Blvd. and RPS Drive (Fed Ex Drive) (#6) and its approaches of 250 ' in Moon Township;
- Summit Park Drive between Park Lane (western side) in the west and S.R.0060 Ramps A/B in the east in North Fayette Township; and
- Robinson Town Center commercial area, including Park Manor Blvd, Robinson Town Centre Blvd, Robinson Centre Drive and Park Manor Drive in Robinson Township.

8.3 Crash Analysis - S.R.3072 (Montour Run Road) & RPS Drive & Park Manor Blvd in Moon Township

Mackin requested accident information from the Moon Township Police Department for the past five (5) years for intersection #6, S.R.3072 (Montour Run Road) & RPS Drive & Park Manor Blvd and its approaches of 250 .' Both reportable and non-reportable incidents were requested. As can be seen in the collision diagram in Figure 8.2, there were thirty-three (33) crashes between the years 2002 and 2006, or 6.6 a year. The severity of the 33 accidents was as follows:

- Property damage only - 23
- Minor injury –9
- Moderate injury –1

The severity of accidents for this intersection appears to be low, fortunately, considering the size of the intersection and amount of traffic that uses it. However, the total number of crashes appears high. The Montour Trail crosses Park Manor Blvd at this intersection. Mackin thought that it was particularly significant that no accidents were reported involving pedestrians or bicyclists. The types of accidents were as follows:

- Rear-end –19
- Angle –6
- Unknown –6
- Head-On –1
- Hit-Fixed Object –1

The following crash patterns were determined from the collision diagram:

- Rear-end accidents occur on both approaches of Montour Run Road to the intersection, especially eastbound.
- Northbound left turns are colliding with southbound throughs at an angle.

Mackin does not recommend any mitigation for this intersection due to the crash analysis for the following reasons:

- Low severity of accidents since many of them are rear-end accidents;
- The intersection appears to have proper timings and phasing based on the existing lane configurations and traffic volumes. Recommended changes in lane configurations are described in the Traffic Signal Improvements Chapter 8.7. With a change in lane configurations, the signal should be retimed, based on a traffic study. This change in signal timings should mitigate some of the rear-end and angle accidents; and
- The intersection geometry and signal design is relatively new (1999); therefore the signal equipment is up to date.

This intersection is studied further in the Traffic Signal Improvements Chapter 8.7, with additional improvements recommended in that section.

8.4 Crash Analysis - Summit Park Drive Commercial Area

Mackin requested accident data from the North Fayette Township Police Department for the past five (5) years for Summit Park Drive between Park Lane (western intersection) and S.R.0060 Ramps A/B. Both reportable and non-reportable incidents were requested. The North Fayette Township Police responded by reporting that 370 accidents occurred during the five (5) years and that they wanted $15 per report, totaling $5,500. At the direction of ACTA, Mackin purchased crash data for just one (1) previous year, 2006. During the year, 77 accidents occurred and are shown graphically in the collision diagram in Figure 8.3. There appears to be four (4) concentrated areas of crashes or crash clusters. The largest cluster includes the Andrew Drive/Wal-Mart intersection (#9) and the Montour Church Road/Ramps C&D intersection (#10), as well as the road between these two intersections. Mackin is not proposing any crash analyses or mitigation at this location because this section of Summit Park Drive is to be widened as part of the North Fayette Township Project discussed in Chapter 6.

The second crash cluster occurs at the intersection of Quinn Drive and Summit Park Drive, where seven (7) crashes occurred in the last year, four (4) of which were angle accidents and three (3) rear-end accidents. This intersection currently operates as an all-way stop controlled condition. One possible method to mitigate the angle accidents is to signalize the intersection. It has been mentioned in previous studies that this intersection might warrant a traffic signal. It is unknown by Mackin whether or not this intersection warrants a traffic signal. Therefore, it is recommended that a traffic study be conducted at this location to determine if a traffic signal is warranted. Additionally, Quinn Drive is currently offset with the Marriott Springhill Suites-Airport Hotel Driveway by about 60 .' If a traffic study is conducted, it may be a good idea to look into the feasibility of realigning the Hotel Driveway to form a + 'intersection with Quinn Drive, before signalization.

The following approximate costs could be expected for this Quinn Drive project:

- Traffic and feasibility study to determine if the traffic signal is warranted along with the appropriate phasing and timings- $5,000;
- Traffic signal design and engineering - $20,000;
- Traffic signal construction, including interconnection - $120,000;
- If it is decided to realign the Hotel Driveway, design and engineering - $10,000;
- Driveway and parking lot construction- $15,775; and
- Mobilization and Maintenance and Protection of Traffic (MPT) - $5,000.

The third crash cluster is located at the intersection of Summit Park Drive, Home Drive and Chauvet Drive, where nine (9) crashes occurred in the last year. No particular crash pattern is present, and the signalization of this intersection is fairly new (1999). Therefore, Mackin does not have any cost effective recommendations for mitigating these accidents.

The fourth crash cluster occurs on Summit Park Drive from the top of the hill in front of the PNC Data Center westward to the intersection of Summit Park Drive and Park Lane (western intersection). Results from the accident reports in this area indicated that many of the accidents were skidding accidents due to wet conditions, vehicles driving too fast for conditions, and vehicle losing control. It is also known by Mackin that the PNC Data Center hired Mackin several years ago to protect their underground transformer because an out of control vehicle crashed into a bus shelter close to this location. Speed was definitely a contributing factor in many of these accidents. The lack of the proper superelevation, or tilt,

of the road is probably also a contributing factor. Mackin feels that the existing signs on Summit Park Drive do not properly warn motorists of the road conditions, as can be seen in Figure 8.4. Therefore, it is proposed to install "Slippery When Wet" Signs, "Right and Left Turn" Signs with "Advisory Speed Plaques" and "Chevron Alignment" signs, as can be seen in Figure 8.5, Proposed Signing. These signs will properly depict the roadway, help motorists negotiate the curves, and provide advance warning for the condition of the roadway. The cost of installing these signs would cost approximately $2,450.

8.5 Crash Analysis - Robinson Township Commercial Area

Mackin requested accident data from the Robinson Township Police Department for the past five (5) years for the commercial area of Robinson Township, including Park Manor Blvd, Robinson Town Centre Blvd, Robinson Centre Drive and Park Manor Drive.

There were ninety-nine (99) crashes throughout the commercial area, as can be seen in the following collision diagrams shown in Figures 8.6 and 8.7. Note that Figures 8.6 and 8.7 show the same location, with Figure 8.6 showing crashes 1 through 56 while Figure 8.7 shows crashes 57 through 99.

One intersection that had several serious accidents is Park Manor Blvd and Robinson Centre Drive, (#17). A collision diagram for this intersection is shown in Figure 8.8. From a safety standpoint, this intersection appears to be the worst in the study area. There were 18 recorded crashes in the last five (5) years, with the majority of them angle accidents (13), including numerous injuries and one fatality. Some suggestions addressing the accidents occurring from left turns colliding with through traffic is to determine if the existing traffic signal phasing would warrant the change from protected/permissive to protected/prohibited for some or all of the approaches. Angle accidents may also be addressed by reviewing the timing settings for the intersection concerning the yellow clearance time and the all red time.

Mackin conducted this preliminary traffic analysis. Traffic counts received from PBS&J as part of the Joe's Crab Shack traffic signal project show that protected/prohibited phasing is not warranted on any of the four approaches, although these counts appear to be low. Next, Mackin reviewed the yellow and red timings, which appeared low on the signal permit. Mackin conducted speed trial runs on all approaches and determined that the 85th percentile approach speeds ranged from 35 to 39 mph, quite a bit higher than the posted 25 mph speed limit on all approaches. It is recommended that the yellow and red times be increased as shown in Figure 8.9, resulting in approximately 2 to 3 more seconds of yellow plus red time for each movement. The intersection appears to have enough capacity to handle the loss in green time, in order to increase the safety of the intersection. The cost of adding seconds to the red and yellow times and updating the permit plans would be minimal, roughly $500. As far as changing the phasing from protected/permissive to protected/prohibited, the crash analysis seems to warrant it due to the numerous angle accidents. It is suggested that new PM peak hour and Saturday traffic counts should be collected at this intersection and the phasing of the intersection should be verified.

Reviewing the plotting of the types of accidents, it was determined that some general measures to help reduce accidents in the Robinson commercial are evident. Mackin believes the pavement markings or lack of pavement markings is a contributing factor to the accidents within the Robinson commercial area. Mackin's observation of the existing pavement markings was that it was very poor to non-existent. This was a general consensus concerning the entire study area.

Additionally, the posted speed limit on Robinson Town Centre Blvd and Park Manor Blvd is 25 mph, however Mackin's observations indicated that motorists are not observing the speed limit. One recommendation concerning the speed limit is to emphasis certain intersections, curves, grades, etc. with advisory speed plaques beneath a warning sign. Regulatory speed limit signs would be removed when conflicting with warning signs with an advisory speed plaque. This would eliminate any confusion for

motorists concerning the speed limit and give them advance warning of intersections, side roads, curves and any other unfamiliar or unexpected conditions of the roadway ahead with the a recommended speed to maintain or reduce to. The costs of supplying new pavement markings and advisory speed limit signs depend on the extent of the installation.

Rear-end accidents were identified and were significant throughout. Mackin believes motorists have too many distractions driving through this large development, such as what lane to be in, the location of a certain store, and many drivers whose statements were read in the accident reports were just plain lost. Mackin recommends better signing throughout the Robinson commercial area to address the confusion that drivers are experiencing. This is addressed further in Chapter 9, Signing. Finally, Mackin recommends more emphasis to the actual traffic signals at particular problem locations, especially when red. A flashing warning device or a static ground mounted sign could give additional attention to motorists approaching the intersection.

8.6 Traffic Signal Improvements—RIDC Park West Drive & Cliff Mine Road/Aten Road (#2) and S.R.8074 (Ramp B) & Cliff Mine/Coraopolis Heights Road (#3)

It was pointed out by the Findlay Township Manager that the intersection of RIDC Park West Drive & Cliff Mine Road/Aten Road (#2) is considered to be a problem intersection from a traffic congestion standpoint, as well as concerning pedestrian access and crossing. It was requested of Mackin to review this traffic signal concerning congestion, pedestrian access and other factors that could be mitigated short term or long term. Since the intersection of S.R.8074 (Ramp B) & Cliff Mine/Coraopolis Heights Road (#3) is just 400 feet away, and supposed to be coordinated with intersection #2, Mackin reviewed this intersection at the same time.

Results from the review indicated that both traffic signals are three (3) phase controllers and are interconnected to each other by fiber optic wire. The intersection of S.R. 8074 (Ramp B) and Cliff Mine / Coraopolis Heights Road is equipped with preemption so that the ramp does not back up onto the Parkway. Mackin did not confirm by opening the controller cabinet that the queuing detectors are in operating condition, however no queues backed up to the Parkway while the review was being conducted. Mackin did observe that the interconnection was not working as indicated on the traffic signal permits, and recommends that the coordination be reprogrammed according to the existing traffic signal permits. Another finding was turning movements were witnessed being made from the incorrect lanes. This indicates the need for additional signing. It is suggested that a sign be placed northbound on Ramp B at intersection #3, indicating the destination and the proper lane to be in to drive through the intersection, as seen in Figure 8.10. Trucks are a major concern with dual left turns to Cliff Mine Road and therefore must be in the right lane as an existing regulatory sign states. It is suggested that the existing regulatory sign be relocated on the left post of the proposed destination sign. The proposed sign along with the existing regulatory sign would provide a clear message to motorists, as to what lane they should be in.

A similar sign should be placed near right in advance to Aten Road westbound on Cliff Mine Road at intersection #2 as seen in Figure 8.10. This sign would properly indicate the destination that can be made from the designated lane. A 4 ”white dotted extension line or tracer line should be placed to properly guide motorists through this intersection. Note that these suggestions are designed to confirm the traffic control that is already in place, since illegal movements were seen during the field view. This does not necessarily mean that the existing westbound lane configuration is the best, capacity-wise. This intersection should be studied further to determine the best lane configuration and signal phasing. The traffic study would require AM and PM traffic counts and capacity analyses.

Two advance guide signs should be placed eastbound. One sign would be located on eastbound Park West Drive and the other sign on eastbound Cliff Mine Road. These signs would inform motorists of the

proper lane to be in for destinations Pittsburgh and the Airport, which are in the opposite lanes than one would think, geographically.

There are not any provisions for pedestrians at either of these intersections. Mackin does not see any reason for pedestrians to be crossing at Ramp B since both ramps lead to the Parkway. However, at the intersection of Cliff Mine Road & Aten Road/Park West Drive, a crosswalk, pushbuttons and pedestrians signal heads should be installed on the west side of Aten Road crossing Cliff Mine Road, as seen in Figure 8.10. One pedestal would need to be purchased and installed on the southern side of Cliff Mine Road. This crosswalk would accommodate pedestrians and bicyclists from the hotels that may use the Montour Trail.

Mackin's observation concerning the traffic signals at intersection #2 is that the existing placement of the mast arms and traffic signals are all near side for the approaches. This does not give the motorist the proper pull through signal confirmation that occurs with the current standards of traffic signals using far side signal heads that properly pull the motorist through the intersection. As a long term improvement, it is suggested that these mast arms be removed or relocated, and new mast arms be installed that are far side. This is a major consideration that could be programmed at a later time.

The short term improvements would cost approximately $16,000. Broken down by type, these individual subtotals would be estimated as:

- Preprogram interconnection: $500;
- Advanced signing (4 signs): $8,400
- Transverse pavement markings and arrow legends: $2,000;
- Pedestrian access equipment: $5,100.

The long term improvement of redesigning the intersection to provide for far side signal heads and mast arms would be approximately $120,000.

8.7 Traffic Signal Improvements—S.R. 3072 (Montour Run Road), Park Manor Blvd. and RPS Drive (Fed Ex Drive), (#6)

Mackin conducted a crash analysis of this intersection and determined that there were no reported accidents involving pedestrians or bicycles in the past 5 years, which is extremely good news considering the Montour Trail crosses Park Manor Boulevard at this intersection. However, based on new technology and recent studies, it is suggested that a leading pedestrian interval (LPI) be employed for the Park Manor Blvd crossing. This would provide a 3 second head start for the pedestrians crossing Park Manor Boulevard, i.e. those using the Montour Trail. To do this, insert a leading pedestrian interval phase, which would be an all red phase for vehicles on all approaches and a 3 second head start walk phase for pedestrians crossing Park Manor Boulevard, upon actuation, as can be seen in the marked up traffic signal drawing, in Figure 8.11 The cost of including this LPI would be minimal, as the existing controller is modern enough to handle the reprogramming. The reprogramming could cost up to $500.

Although this intersection was not considered one of the worst intersections within the study area based off of the public surveys, this could partially be because this intersection was not listed as one of the choices. Respondents needed to choose this intersection by stating it in the "other" category. For anyone who drives throughout the study area, it is well known that this intersection should be considered one of the most congested, especially during the PM peak period and holidays. One comment in particular, by Sydnee Bagovich, led Mackin to study this intersection further, in which Ms. Bagovich states that the dual left turn lanes on Montour Run Road into FedEx don't appear to be necessary, however the single, "small left turn lane (on Montour Run Rd) into the mall backs up and forces drivers going straight to ride off-road to pass". This comment led to Mackin reviewing this intersection in a bit more depth.

Mackin collected manual turning movement counts at intersection #6 at the following dates and times:

- Thursday, August 16, 2007 from 7:30 –9:00 AM;
- Monday, August 20, 2007 from 4:00 –6:00 PM.

These counts were used to determine whether the existing lane configurations, phasing and timings were correct, and are found in THE Appendix. When the original traffic signal was designed in 1999, it was probably designed for the Fed Ex Ground development. Therefore, two (2) eastbound left turns lanes were constructed on Montour Run Road to provide enough capacity for the anticipated traffic volumes heading for Fed Ex. At the time, the Robinson Commercial Area was not as built up as it is today. Therefore, only one (1) westbound left turn lane was constructed on Montour Run Road for Robinson commercial area traffic. If you look at the traffic signal permit plans, (Figure 8.11), you can see that a large hatched out area westbound on Montour Run Road exists. This hatched out area could be converted to a left turn lane, but due to the geometry of the intersection, the opposing dual left turns eastbound would need to be changed to a single left turn lane. Mackin's traffic counts were used to determine which direction needed the dual left turn lanes.

After watching and counting the intersection during both the AM and PM peak travel periods, the following was learned:

- The number of eastbound left turns (200) is basically equal to the number of westbound left turns (194) during the AM peak hour;
- The number of eastbound left turns (21) is a lot less than the number of westbound left turns (346) during the PM peak hour;
- During both the AM and PM peak hours, the westbound left turn lane can back up into the through lane, causing some drivers to use the shoulder to get around the traffic queue;
- Drivers are using the shoulder on Park Manor Blvd northbound, especially during the PM peak hour. This is an unsafe condition due to the crossing of the Montour Trail; and
- A very high percentage of right turning vehicles are making the right turn during a red light display at this intersection.

Mackin conducted capacity analyses for both peak travel periods under the following two scenarios, as can be seen in Table 8.2:

Table 8.2 –Intersection #6 Capacity Summary –Level of Service Table

Intersection Approach/ Movement	Level of Service (Delay in Seconds/Vehicle)			
	AM Peak Hour		PM Peak Hour	
	2007 Existing Configuration	2007 New Configuration	2007 Existing Configuration	2007 New Configuration
6. Montour Run Rd, Fed Ex Dr & Park Manor Dr				
Eastbound Left Turns	D	E	E	E
Eastbound Throughs	D	D	F (89.1)	E
Eastbound Right Turns	C	C	D	C
Eastbound Approach	D	D	E	E
Westbound Left Turns	E	D	F (87.5)	E
Westbound Shared Through/Rights	E	E	C	C
Westbound Approach	E	E	E	D
Northbound Left Turns	C	C	E	D
Northbound Shared Through/Rights	E	E	E	E
Northbound Approach	E	E	E	D
Southbound Left Turns	C	C	F(84.2)	E
Southbound Throughs	C	D	E	D
Southbound Rights	C	C	D	D
Southbound Approach	C	C	E	D
Overall	D (54.1)	E (57.3)	E (68.1)	D (49.5)

Existing Configuration = 2 Eastbound left turn lanes, 1 westbound left turn lane
Proposed Configuration = 1 Eastbound left turn lane, 2 westbound left turn lanes

The results of changing the lane configuration from two (2) eastbound left turn lanes and one (1) westbound left turn lane to one (1) eastbound left turn lane and two (2) westbound left turn lanes results in 3.2 seconds more of overall delay for drivers in the AM peak but 18.6 seconds less of overall delay during the PM peak. Therefore, Mackin favors the conversion, as it will improve overall delays throughout the majority of the day. The conversion should be fairly inexpensive and non-intrusive as additional right-of-way is not needed. Figure 8.11 shows the suggested improvements for this intersection, based off of this traffic study.

The tasks to complete this lane configuration conversion would include relocating a traffic signal head, removing and installing pavement markings, installing a new loop detector, relocating signs, and revising the traffic signal permit. The cost would be approximately $10,000.

8.8 Traffic Signal Improvements—Robinson Town Centre Blvd & Summit Park Drive/Ramps A/B (#11)

Results from the field review of this intersection indicated that the northbound left turn lane on Summit Park Drive appears to need a protected phase (left turn arrow). This movement currently operates as permissive only. Additionally, long delays were witnessed for these turning vehicles. During one Saturday afternoon, when traffic volumes are at their highest, the queue in this lane was seen backing up several times into the adjacent through lane, causing major traffic jams all the way back to intersection #10. Vehicles in this lane are simply unable to make this left turn without their own left turn arrow phase, due to the high traffic volumes and lack of gaps in opposing traffic.

As stated in Chapter 6, Summit Park Drive is proposed for widening between Andrew Drive and the Interchange Bridge over the Parkway as part of a North Fayette Township Project. As part of that project, the intent is for this northbound left turn on Summit Park Drive to be converted from permissive phasing to protected/permissive phasing. Traffic counts received from PBS&J for that project indicated that protected phasing is warranted, as expected. This improvement should be incorporated as soon as possible, as seen in Figure 8.12. If this project drags on or is never put into construction, this traffic signal improvement can be done separate from that project and can be done relatively cheap, resulting in a great relief of traffic congestion on Summit Park Drive. The cost for this improvement would be estimated at $3,890 and can be broken down as follows:

- Five section signal head: $1,200
- Structure mounted sign: $190
- Engineering study to determine phasing and timings: $2,000
- Reprogram signal: $500

Based on the pedestrian counts described in Chapter 3, there are not many pedestrians using the western side of the intersection and bridge. If the Robinson Town Centre/The Pointe Interchange Bridge over the Parkway project described in Chapter 6 is ever constructed, it is recommended that all pedestrians be prohibited from the western side of Summit Park Drive. Pedestrian signal heads, push buttons, crosswalk pavement markings and signs would need to be removed and "No Pedestrian" signs would need to be installed. The cost for this can be estimated at $1,440. This improvement and cost was described in more detail in the previous section.

8.9 Traffic Signal Improvements—Park Manor Blvd and Robinson Center Drive, (#17)

As was stated in the previous section, it is suggested that the yellow and red timings be increased as shown on the marked up traffic signal plans in Figure 8.9. By increasing the yellow and red times, the red light running that is causing numerous angle accidents the past few years, including one fatality, should be eliminated, or reduced. New PM and Saturday peak hour traffic counts should be collected in order to verify the left turn phasing at this intersection, as there were numerous right-angle accidents at this intersection in the last five (5) years.

8.10 Traffic Signal Improvements—S.R.0060 (Steubenville Pike) & Park Manor Drive/Giant Eagle Driveway (#18)

Mackin requested traffic volumes from URS at the intersection of S.R.0060 (Steubenville Pike) & Park Manor Drive/Giant Eagle Driveway (#18) and reviewed them for proper phasing, based on the existing lane configurations. Based on the conflict factors and existing lane configurations, the existing traffic signal phasing appears correct. Mackin field viewed the intersection and provides the following additional suggested short term modifications to this intersection, as can be seen in Figure 8.13:

» Provide the overhead route markers westbound on Steubenville Pike as per Figure 8.13, replacing the existing 'Straight Only' signs. A driver who is unfamiliar with the area would have a difficult time knowing which lane to be in approaching the Interchange. These overhead signs should help clear that up well in advance of the Interchange. Estimated costs = $600;
» Traveling eastbound on Steubenville Pike (SR 60), the highway goes from a high speed limited access highway to a stop and go, signalized commercial strip. Drivers are forced to reduce their speeds at a very fast rate. The numerous rear-end accidents observed here provides proof that some motorists are having difficulty stopping. By providing an overhead, mast arm mounted, internally illuminated, SIGNAL AHEAD (W3-3) sign with flashing warning lights, drivers will be alerted at a greater distance that a traffic signal is approaching. Estimated costs = $13,000; and
» Provide better pedestrian access to the two western signal poles. Some additional sidewalk is needed to provide for wheelchair access. This sidewalk is shown on Figure 3.2, Pedestrian Priorities and the cost is included in that section. Standard ADA wheelchair ramps are typically $1,000 apiece.

8.11 Traffic Signal Improvements—S.R.0060 (Steubenville Pike) & Ames Drive/ Kohl's Driveway (#19)

One minor suggestion similar to the suggestion at adjacent intersection #18 is to provide the overhead route marker eastbound on Steubenville Pike as per Figure 8.14. This lane is not hatched out as shown on the traffic signal permit plans. The lane currently operates as a through lane. The departure lane directly across from it quickly turns into a right turn only lane onto Campbells Run Road. Some motorists in this lane may not wish to make a right onto Campbells Run Road, leading to sudden lane shifts and possible sideswiping of vehicles. By providing advanced signing, vehicles can get into their appropriate lane at an earlier time. This short term improvement would cost roughly $200.

8.12 Traffic Signal Improvements—Robinson Centre Drive & Mall Drive #2/Joe's Crab Shack Driveway

This intersection is not currently signalized. It operates as stop controlled on all four (4) approaches. A traffic signal has been proposed at this intersection and has been designed by PBS&J for Robinson Township. The Mall at Robinson Manager Dave McGaffin stated that the Mall has a 10-year agreement with the Township to make unspecified improvements to the roads around the mall. Based on the crash analyses conducted by Mackin, only one reported crash has occurred at this intersection in the last five (5) years. Additionally, Mackin conducted a signal warrant analysis using traffic volumes provided by PBS&J and the intersection does not warrant a signal based off of these counts. Additionally, it is believed by adding a traffic signal at this location, a reduction in congestion is not expected. For these reasons, this intersection should remain as it is today, unsignalized. The money that would be needed for traffic signal equipment and construction could be used on another higher priority intersection such as the proposed IKEA-Robinson Town Centre intersection traffic signal, described in Chapter 7.

8.13 Interconnection of Traffic Signals

Mackin analyzed all of the traffic signal permit plans within the study area to determine the existing interconnection between traffic signals. Currently, six (6) separate systems exist, as shown on Figure 8.15, Existing Interconnection of Traffic Signals. Note that this information is only as accurate as the current traffic signal permit plans show. Two adjacent intersections can be coordinated with each other one of three possible ways:

» Time-Based Coordination - This is the easiest method of coordination in which the signals are not hard-wired with each other and thus, do not actually communicate with each other. They are simply coordinated by the use of synchronized clocks;

» Fiber Optic Interconnection –This method hard-wires adjacent intersections by fiber optic wires. The wires can be underground or aerial. The intersections communicate with each other to coordinate movements for optimal phasing and timing; and
» Spread Spectrum Radio Interconnect –This method is the most recent and the most advanced. As with the fiber optic interconnection, the adjacent intersections communicate with each other. However, the intersections are not hard-wired with each other. They communicate via radio waves sent above ground between antennas.

It is suggested that all future coordination of traffic signals within the study area should be via spread spectrum radio, as it is the least intrusive and the most advanced.

During the traffic signal field reviews, it appeared that some of the adjacent intersections were not coordinated properly. The individual townships are responsible for maintaining the traffic signals once they are constructed. Therefore, they are responsible for maintaining that the coordination of adjacent signals is working properly, even between adjacent townships. All four (4) townships should review the coordination of their traffic signals to make sure that they are working properly, based off of the traffic signal permit plans. If the coordination plans are off, they should be reprogrammed accordingly. The benefits of doing this can be great for mitigating congestion and providing better flow of traffic along busy corridors.

According to Figure 8.15, Summit Park Drive should be coordinated by either fiber optic or spread spectrum radio between intersection #9 and intersection # 14, yet it is not. A spread spectrum radio connection should be made between intersections #11 and #12 to provide a progressive movement of traffic on Summit Park Drive from intersection #9 to #14. Additionally, if Quinn Drive is ever signalized, the coordination should run progressively between intersections #7 through #14, which includes the existing spread spectrum radio interconnect at Chauvet Drive.

Two other potential traffic signals may be installed in the future at IKEA and Park Manor Drive and at Mall Driveway #2 and Robinson Centre Drive. When these signals are designed, they should include spread spectrum radio interconnection with their adjacent intersections.

8.14 Street Name Confusion

One additional comment that should be made regarding intersections is that the street names used throughout the study area can be downright confusing. There is a Robinson Town Centre Boulevard, a Robinson Centre Drive and a Robinson Lane, all within a 1/2 mile of each other. There are also two (2) roads named Park Manor Boulevard, a Park Manor Drive and a Park Terrace, again, all within a mile of each other. There are actually two (2) intersections named Park Manor Boulevard and Robinson Town Centre Boulevard, numbers 12 and 13 from Table 8.1. All of this can create great confusion for those unfamiliar with the area. Mackin suggests that some of these similar road names be changed to help avoid further confusion.

The Challenge: The commercial area contains too much sign clutter.

The Investigation and Analysis: Mackin conducted a field view to inventory the existing signing and determined that there were seven (7) different kinds of directional business signing. Mackin believes that this mixture of signs lessens the effectiveness of messages and creates confusion for the motorist. In addition, many of the existing signs are not in accordance with any PennDOT or Federal Highway Administration (FHWA) specification or standard. Some signs contain too many messages, the letter height is too small on many signs, and the location of some signs is on the wrong side of the intersection.

Potential Solution: In order to alleviate driver confusion, potential accidents, and sign clutter, the implementation of a comprehensive signing plan for the entire retail area would be beneficial.

Probable Cost: The associated cost of establishing a directional business signing plan could be in the range of $20,000 to $40,000. To actually implement the signing plan and construct it could cost anywhere from $100,000 to $1,000,000 depending on what is accepted by the governing bodies and property owners.

9.1 Signing Inventory

It was requested of Mackin to review the existing directional business signing within the study area. Mackin began the review by conducting an inventory of existing signs and their locations and indicated them on a location map, as can be seen in Figure 9.1.

Signing Inventory - Wayfinding Signs

The Mall at Robinson Stores

Robinson Town Centre Stores

Montour Church Plaza Stores

Signing Inventory - Wayfinding & Guide Signs

Robinson Township Area Destination Wayfinding Sign - PennDOT Style

Robinson Township Area Destination Wayfinding Sign - Architectural Style

PennDOT Guide Sign - Destination

PennDOT Guide Sign - Tourist Oriented Directional

Mackin's signing inventory review indicated that among the existing directional business signs, there exists a mix of several different types of signs. These include:

1. The Mall at Robinson Store Wayfinding Signs—Eleven (11) signs
2. Robinson Town Centre Store Finder Signs—Six (6) signs
3. Montour Church Plaza Store Finder Signs—Three (3) signs
4. Robinson Township Area Destination Wayfinding Signs
   - » PennDOT style—Eight (8) signs
   - » Architectural style—Thirteen (13) signs
5. PennDOT Guide Signs
   - » Destination—Four (4) signs
   - » Tourist-Oriented Destination—Six (6) signs

9.2 Problems with the Existing Signing

Mackin believes that this mixture of signs lessens the effectiveness of messages and creates confusion for the motorist. In the accident reports that Mackin analyzed, there were several motorists that reported that one of the contributing factors for their accident was that they were lost or didn't know where a specific business was located. Better signing may lead to reduced crashes.

Also, having too many signs can lead to sign clutter, in which signs can block the messages of other signs, or decrease the sight distances at certain locations.

In addition, many of the existing signs are not in accordance with any PennDOT or Federal Highway Administration (FHWA) specification or standard that motorists are accustomed to seeing while driving. For example, the Store Wayfinding signs have as many as thirteen (13) messages on one sign. This is against PennDOT or FHWA practice and makes it difficult for the average motorist to comprehend where they are going in a quick and safe manner. Additionally, these signs, as well as the other Store Wayfinder signs, often have their last message as low as the ground level, making it difficult for drivers to see when it is obstructed by snow, uncut grass or a bush.

Furthermore, there are numerous signs which are not properly located as per PennDOT or FHWA standards, which recommend that signs be placed at near right in advance of an intersection. Many of these signs in the study area are positioned far right after the vehicle already needed to turn. A few were even located far left, which may never even be seen until after the driver is through the intersection.

Another problem with some of these signs is that the letter height is too small. The height of the letters should typically be one (1) inch per 40 feet of legibility distance minimum, based off of the Manual of Uniform Traffic Control Devices (MUTCD). Mackin would recommend that all of these signs have a minimum of a six (6) inch letter height, which is not the case for the majority of the non-PennDOT signs.

An example of a sign located near left with lettering that is too small.

9.3 Future Direction

Mackin recognizes the expense involved in the existing signs. However, in order to alleviate driver confusion, potential accidents, and sign clutter, the implementation of a comprehensive signing plan for the entire commercial and retail area would be beneficial.

It is suggested that a directional business signing plan be completed that would consolidate messages and properly guide motorists to their desired destination from the surrounding highways leading to Robinson Town Centre, The Point at North Fayette, The Mall at Robinson and the various other locations within the study area. This directional business signing plan should follow PennDOT and or FHWA standards regarding sign color, location, and height as well as letter size. The steering committee decided that the completion of such a plan is beyond the scope of this study.

9.4 Cost Estimate

The associated cost of establishing a directional business signing plan could be in the range of $20,000 to $40,000. To actually implement the signing plan and construct it could cost anywhere from $100,000 to $1,000,000 depending on what is accepted by the governing bodies and property owners.

10.1 Summary of Recommendations

Following are Mackin's suggestions for the problem locations identified in this study which we believe should be initially pursued for implementation. We believe that these high priority projects have a good chance of being implemented due to their obvious need, chance of being supported and in some cases funding identified.

- Continue working with North Fayette Township and PennDOT to complete the roadway improvements at the interchange with the Parkway and Summit Park Drive and to incorporate the suggested pedestrian walkway improvements into the project;
- Pursue funding to complete the high priority walkway locations identified in the study;
- Pursue funding to make the minor traffic signal changes and left turn lane changes at the Fed Ex/ Montour Run intersection;
- Improve the crosswalk at the bus stops adjacent to IKEA and Robinson Town Centre on Park Manor Boulevard;
- Pursue the combined project to construct the turnaround for PNC/DSW and the relocated entrance to IKEA; and
- Support and encourage the construction of the extension of Montour Church Road and the construction of the Port Authority park and ride garage.

There are many other important projects enumerated in the study which should also be pursued for implementation in addition to those listed above. If funding is available or identified for a specific project it should be moved to the top of the list.

Successes are needed, however large or small, to create a wave of support for implementing as many projects as possible.

10.2 Potential Funding Sources

In order to implement the recommendations included in this report there are a number of potential funding sources which can be pursued. Those funding sources which follow depend, in some instances, on the type of project being pursued.

For the two extensions proposed from the existing Montour Trail to the Mall at Robinson and to Summit Park Drive, these are suggested possible funding sources:

- The Department of Conservation and Natural Resources (DCNR)
- Transportation Enhancement funds administered by PennDot
- Local property owners (donation of property or right of way)
- North Fayette and Robinson Townships
- Businesses

For sidewalk or walkway construction projects throughout the entire commercial area:

- The Department of Community and Economic Development (DCED)
- Transportation Enhancements-Hometown Streets
- Property owners
- Businesses
- Township
- Transportation Improvement Program (TIP) if part of roadway project

For the construction of steps on public or private property, the likely sources of funding are:

- Property owners
- Township
- Businesses

For the marking and signing of crosswalks or the installation of electrically operated signs:

- Township
- Property owners
- Businesses

For the installation or modification of traffic signals:

- Township
- Property owners
- Businesses

For roadway or intersection improvement projects:

- Transportation Improvement Program (TIP)
- Township
- Property owners
- Businesses

For signing on state highways:

- PennDOT

For design money to study and implement the directional signing:

- PennDOT research funding
- Businesses
- Township

In order to implement many of the recommendations in this report, a combination of funding sources will probably be required. All political contacts should be utilized to obtain grants which may be available to fund these types of projects.