PIGEON FORGE Multimodal Corridor Study

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Prepared by



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PIGEON FORGE

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I.0 INTRODUCTION AND PROJECT OVERVIEW

I.I Introduction

The City of Pigeon Forge was awarded a TDOT Community Transportation Planning Grant in 2018 for a multimodal corridor study for SR 71/US 441 "the Parkway". This study aims to provide improvement recommendations along the corridor that prioritize the safety of vulnerable users without sacrificing vehicular operations. The City would also like to generate improvements that will promote development that is friendly to all modes of travel throughout the corridor. Given the extensive right-of-way for the Parkway, there are many opportunities to reconfigure the roadway to provide substantial multimodal facilities. Ultimately, the City Commission will need to adopt this study to be able to start implementing recommendations from the report. Therefore, it was imperative to gather input from stakeholders and receive support from the Commission throughout the study process.

I.I.I Study Area

The study area for this corridor study is defined as the 4.6-mile section of SR 71/US 441 "Parkway" within the city limits of Pigeon Forge and includes all of the signalized intersections between Lazy Lane/Music Road and Conner Heights Road. There are currently sidewalks on either side of the roadway and transit service that operates along the Parkway; however, crossing the Parkway via non-motorized modes is incredibly challenging and daunting. provides a location map and the study area for this study.



FIGURE I: PIGEON FORGE LOCATION AND STUDY AREA

I.I.2 Community Transportation Planning Grant (CTPG)

TDOT's Office of Community Transportation (OCT) works to coordinate the state's transportation planning, local land use decisions, and community visions to guide the development of a safe and efficient statewide transportation system. As part of this effort, TDOT initiated the Community Transportation Planning Grant (CTPG) program.

The goals of the CTPG program are to:

- Assist rural municipalities with planning efforts that define the transportation cohesiveness between multimodal transportation systems and local land use objectives that achieve the statewide transportation goals.
- Aid rural municipalities with the creation of planning documents that support improvements in traffic flow, safety, and overall efficiency of the transportation system.
- Provide rural city governments with planning resources to achieve community visions as related to transportation and land use needs that promote future economic growth.

In January 2018, the City of Pigeon Forge submitted a corridor study application to receive CTPG funding for the State Route 71/US 441 "Parkway". This corridor study is the first step towards completing a comprehensive multi-modal transportation plan. The City's goal is to transform the Parkway corridor in a way that stimulates quality economic development that is friendly to all modes of travel. As part of this study, the City would like to look at alternatives such as: optimizing access points; shortening crossing distances and improving perpendicular crossings for non-motorized modes of transportation; and the prioritization of transit operations. A copy of the CTPG application can be found in the Appendix.

I.2 Project PurposeI.2.1 Purpose and Need

State Route 71 ("the Parkway") is an essential corridor for the communities neighboring The Great Smoky Mountain National Park. The Smokies are the most visited national park in the United States, seeing over 11 million visitors in 2017. Pigeon Forge is located approximately seven miles north of the park entrance, positioning itself to profit from tourists traveling to east Tennessee from all over the world.

Although the City of Pigeon Forge is home to approximately 6,000 residents, the Parkway boasts an average daily traffic volume of around 50,000 vehicles and is notoriously congested. The nature of the corridor through Pigeon Forge is widely commercial tourism and most major destinations are located less than a mile from the Parkway. The length of the Parkway through the city limits is a modest 4.6 miles, but it is unfriendly to bicycles and pedestrians due to the width of the roadway and the lack of bicycle facilities. The relatively small area surrounding the Parkway has the potential of being easily connected due to its size, but unfortunately the Parkway was designed with the automobile as the main mode of travel. Pigeon Forge has a unique opportunity through this study to transform the Parkway into a multimodal facility that will not only improve the quality of life for residents, but also improve mobility of all modes for tourists and the local work force.

In June 2018, the City completed a Greenways and Bikeways Master Plan that provides a framework for connecting key areas of the City. This corridor study uses concepts from the Greenways and Bikeways plan related to access and intersection improvements along the Parkway. This study will provide a comprehensive multimodal transportation plan for the portion of the Parkway through the Pigeon Forge city limits, which will kickstart a multi-modal plan for the City. **PURPOSE**: To provide additional multimodal mobility options that support economic development goals along the Parkway.

NEEDS:

- Bicycle facilities on or parallel to the Parkway
- Shorter crossing distances for pedestrians
- More frequent pedestrian crossings
- Access management overhaul
- Separate accommodations for all users (ideally)

I.2.2 Vision and Goals

During the Steering Committee kick-off meeting for the project, the group gave feedback regarding how they view the corridor today and how they want the corridor to look in the future. The group agreed that the Parkway currently feels and operates like a highspeed facility not conducive to walking or biking. In the future, they would like the Parkway to have more trees and green space with fewer median openings and driveway cuts to allow for a safer environment for bicyclists and pedestrians.



The goal is to develop the corridor in a way that encourages quality development while also improving the mobility of all transportation modes. As mentioned previously, the City must adopt this plan before implementing the recommendations from the study. Therefore, this study provides realistic recommendations and guidance on how to implement multimodal improvements over the short-, mid-, and long-term.

I.3 Planning and Engagement Process

The study began in January 2019 with a project team kickoff meeting including representatives from Pigeon Forge, TDOT's Office of Community Planning, and CDM Smith. The City identified a Steering Committee comprised of proprietors representing the various businesses along the Parkway. Throughout the study, the Steering Committee was consulted to ensure that the recommendations complied with the vision the stakeholders established for the corridor. The City Commission was also informed along the way to ensure that the final recommendations would be approved by them. The illustration below depicts the major components of the planning process and the key tasks associated with each step.

The engagement process began with a Steering Committee Brainstorming Meeting on February 7, 2019, where any and all ideas were brought to the table. From this initial meeting, the consultant team developed improvement ideas based on the major issues the stakeholders identified. A survey was also published online to gather input from the public. Once the alternatives were developed, the Steering Committee and the City Commission had opportunities to provide feedback. The consultant team then produced the final recommendations based on this feedback.

I.4 Relationship to Other Studies

Pigeon Forge has engaged in several planning-level studies over the past few years. The most recent being the Greenways and Bikeways Master Plan completed in June 2018. This plan provides a framework for connecting key areas of the City with pedestrian and bike facilities. Although the focus of this plan was to connect key areas of the City, several recommendations were provided for making the Parkway more pedestrian- and bicycle-friendly. Another recent endeavor the City participated in was the Corridor Management Agreement along Veteran's Boulevard (SR 449) in which the City of Pigeon Forge and the City of Sevierville collaborated on establishing goals for the corridor that included access management, land use planning, and roadway design and capacity. During this study, results from these efforts were considered when making recommendations for the Parkway.

2.0 EXISTING CONDITIONS AND ANALYSIS

2.1 Existing Land Use

Land use along the Parkway is primarily commercial with a mixture of hotels, restaurants, retail shopping, and entertainment dominating the frontage. Almost all the land use along the Parkway in Pigeon Forge is related to tourism, either directly or indirectly. The exception is that a few banks exist. Most of the property along the Parkway is extremely valuable so owners must develop their property to generate significant revenue. The typical development has buildings set back from the Parkway right-of-way and parking in front of the building.

Figure 2 through Figure 10 depict development along the Parkway and name many of the buildings/developments.

2.2 Traffic Signal Inventory

There are 14 traffic signals in the study area including at the following locations:

- Music Road/Lazy Lane
- Music Road/Pinoak View Road
- Henderson Chapel Road/Sugar Hollow Road
- Teaster Lane (T-intersection)
- Christmas Tree Lane
- Community Center Drive (T-intersection)
- Wears Valley Road
- The Island Drive (T-intersection)
- Red Roof Mall (T-intersection)
- Jake Thomas Boulevard (T-intersection)
- Pine Mountain Road (T-intersection)
- Old Mill Avenue (T-intersection)
- Dollywood Lane (T-intersection)
- Conner Heights Road (T-intersection)

Nine of the 14 signalized intersections are configured as a "T" meaning there is only one side street leg, which results in maximizing the traffic throughput since the traffic signal can have only three phases. The 3-legged "T" configuration also facilitates pedestrian movements because the signal phasing is simpler. Figure 2 through Figure 10 illustrate the spacing between the 14 signalized intersections. The study area is approximately 4.6 miles long, so the traffic signals are spaced an average of about 0.3 miles apart, or approximately 1,700 feet. The shortest distance between signals is 675 feet from Henderson Chapel Road/Sugar Hollow Road to Teaster Lane; whereas, the longest distance is 4,500 feet between Dollywood Lane and Conner Heights Road. The distance between traffic signals is a challenge regarding pedestrians crossing the Parkway.



FIGURE 2: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET I)



FIGURE 3: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 2)



FIGURE 4: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 3)



FIGURE 5: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 4)



FIGURE 6: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 5)



FIGURE 7: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 6)



FIGURE 8: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 7)



FIGURE 9: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 8)



FIGURE 10: LAND USE AND TRAFFIC SIGNAL SPACING (SHEET 9)

2.3 Pedestrian Infrastructure Inventory and Counts

The Parkway contains a 7.5 to 8.0-foot sidewalk on both side for the entire length of the study area. South of Wears Valley Road, the sidewalk is separated from the road by a 4-foot grass strip. Painted pedestrian crosswalks are absent along the Parkway at most driveways and minor streets. As can be seen in a later section of this report, there are frequent driveways in which pedestrians must cross. As a policy, TDOT does not paint crosswalks at unsignalized driveways, but they do at unsignalized side road intersections.

The crosswalk inventory at the signalized intersections is depicted in Figure 11. The red dot represents no pedestrian crosswalks, yellow symbolizes one crosswalk, and green represents crosswalks along both legs of the Parkway. Of the 14 signalized intersections along the Parkway, three have no pedestrian crosswalks across the Parkway at all, 10 have only one crosswalk, and one has two crosswalks.

Figure 12 through Figure 15 show pedestrian counts at all the signalized intersections except Pinoak View Drive, Sugar Hollow Road, and Christmas Tree Lane. Traffic count data at these intersections were obtained from Pigeon Forge's GridSmart cameras, which do not record pedestrians. It is clear from the count data that a modest number of pedestrians cross the Parkway or the side streets intersecting it. The count data were collected on Friday May 31, 2019 and Tuesday June 4, 2019. It is not surprising that a modest number of pedestrians are crossing the Parkway given the amount of vehicular traffic that exists, the length to cross, the two-stage crossing required at most locations, and the fact that some intersections have no or only one crosswalk.



FIGURE 11: CROSSWALK INVENTORY SYMBOLOGY AT SIGNALIZED INTERSECTIONS



FIGURE 12: PEDESTRIAN VOLUMES (SHEET I)



FIGURE 13: PEDESTRIAN VOLUMES (SHEET 2)



FIGURE 14: PEDESTRIAN VOLUMES (SHEET 3)



FIGURE 15: PEDESTRIAN VOLUMES (SHEET 4)

Figure 16 depicts an inventory of pedestrian features at the 14 signalized intersections. All the signalized intersections except Music Road/Lazy Lane, Teaster Lane, and Wears Valley Road have push button signal indications. Those three intersections do not have crosswalks across the Parkway either. There are 7 intersections where it takes multiple phases to cross the parkway, and all of those are located on the south end of the study area. Figure 17 through Figure 20 illustrate the difficulty of crossing the Parkway based on the number of phases required for a pedestrian to cross. At the intersection of Music Road/Pinoak View Drive, it takes one signal phase to cross from east to west and two signal phases to cross from west to east. There are 3 intersections including Henderson Chapel Road, Christmas Tree Lane, and Community Center Drive where pedestrians can cross the entire Parkway in one signal phase.



FIGURE 16: EXISTING PEDESTRIAN FEATURES INVENTORY

The Appendix figures show details of the pedestrian crosswalk distances, traffic signal pedestrian equipment, the traffic signal phases, and time required to cross the Parkway as a pedestrian. The traffic signal phasing information is from the Synchro software. The Appendix illustrations show the AM and PM peak hour worst- and best-case Parkway crossing scenarios, which is based on when a pedestrian arrives at the intersection. The worst-case crossing time is if a pedestrian arrives at the end of the Parkway pedestrian phase, either a left turn phase or a through phase. Conversely, the best case is if a pedestrian arrives at the beginning of the pedestrian phase. Listed below is a summary of this information.

- Music Road/Lazy Lane (no pedestrian crossings)
- Music Road/Pinoak View Road (worst- 146 seconds, best-36 seconds)
- Henderson Chapel Road/Sugar Hollow Road (worst- 133 seconds, best- 31 seconds)
- Teaster Lane (T-intersection) (no pedestrian crossings)
- Christmas Tree Lane (worst- 119 seconds, best- 31 seconds)
- Community Center Drive (T-intersection) (worst- 121 seconds, best- 31 seconds)
- Wears Valley Road (no pedestrian crossings)
- The Island Drive (T-intersection) (worst- 230 seconds, best-134 seconds)
- Red Roof Mall (T-intersection) (worst- 226 seconds, best-I 32 seconds)
- Jake Thomas Boulevard (T-intersection) (worst- 226 seconds, best- 98 seconds)
- Pine Mountain Road (T-intersection) (worst- 229 seconds, best- 95 seconds)
- Old Mill Avenue (T-intersection) (worst- 229 seconds, best-104 seconds
- Dollywood Lane (T-intersection) (worst- 190 seconds, best-50 seconds)
- Conner Heights Road (T-intersection) (worst- 231 seconds, best- 124 seconds)

The Appendix illustrations contain other details regarding crossing the Parkway such as the time it takes to cross without interference from traffic signal phases at 3.5 feet/second (need 36s) and the time and phase given to the pedestrian phase (P3=32s).



FIGURE 17: PEDESTRIAN CROSSING SUMMARY (SHEET I)



FIGURE 18: PEDESTRIAN CROSSING SUMMARY (SHEET 2)



FIGURE 19: PEDESTRIAN CROSSING SUMMARY (SHEET 3)



FIGURE 20: PEDESTRIAN CROSSING SUMMARY (SHEET 4)

2.4 Driveway and Median Inventory

Between Music Road/Lazy Lane on the north end of the study area and Conner Heights Road on the south end of the study area, there are 283 driveways and 35 unsignalized median openings. There are 140 driveways on the east side of the Parkway and 143 on the west side.

The average spacing is approximately 195 feet on each side, which is less than the TDOT driveway spacing guideline of 200 feet. Some areas of the Parkway have driveway spacing considerably less than 200 feet. Figure 21 and Figure 22 show the driveways throughout the Parkway



FIGURE 21: EXISTING DRIVEWAY INVENTORY (SHEET I)





FIGURE 22: EXISTING DRIVEWAY INVENTORY (SHEET 2)

2.5 Bicycle Inventory

There are no specific dedicated bicycle facilities along to the Parkway and none have been proposed. Bike lanes are proposed along Teaster Lane and a combination of roads southwest of the Parkway, hence the Greenways and Bikeways Master Plan calls for excellent bicycle facilities parallel to the Parkway, but not on the Parkway. This multimodal corridor study does consider a bikeway along the Parkway, though the consultant recognizes the challenges constructing it would present.

2.6 Trolley Inventory & Ridership

Pigeon Forge's Fun Time Trolley is one of the most successful public transit systems in the State of Tennessee with annual ridership approaching or exceeding 200,000 since 2013. Table 1 presents annual ridership for the Fun Time Trolley from 2013 through 2018. In that 6-year timeframe, ridership peaked in 2016 at 221,694 and had its low point in 2013 with 174,051.

TABLE I: FUN TIME TROLLEY RIDERSHIP DATA

Year	North	South	Total
2013	111,729	62,322	174,051
2014	152,509	66,045	218,554
2015	155,036	66,304	221,340
2016	157,574	64,120	221,694
2017	138,506	59,448	197,954
2018	143,822	64,597	208,419



FIGURE 23: FUN TIME TROLLEY MAP



FIGURE 24: FUN TIME TROLLEY STOP INVENTORY (SHEET I)



FIGURE 25: FUN TIME TROLLEY STOP INVENTORY (SHEET 2)

As shown in Figure 23, the North Parkway (**Purple**) Route travels back and forth along the Parkway from Old Mill Street to Governors Crossing in Sevierville; the Wears Valley Route (**Orange**) travels on a segment of the Parkway before turning onto Teaster Lane; and the South Parkway Route (**Brown**) enters the Parkway from Pine Mountain Road, travels along the Parkway, and finally makes a loop on local roads or reverses flow on Conner Heights Road.

Figure 24 and Figure 25 illustrate the trolley stops along the Parkway but distinguish between those with only a sign and those that have a shelter.

2.7 Roadway Inventory

The Parkway contains 3-lanes in each direction and has a 70-foot grass median south of and 30-foot median north of Wears Valley Road. The section north of Wears Valley Road has curb and gutter in both directions and on both sides whereas the section south of that road has curb and gutter only on the outsides. The lanes are 12-feet wide. South of Wears Valley Road, the back-of-sidewalk to back-of-sidewalk dimension is approximately 180 feet, and north of that road it is approximately 120 feet.

2.8 Traffic Volumes and Level of Service

Figure 26 through Figure 29 provide the AM and PM peak hour signalized intersection turning movement counts on Friday May 31, 2019 or Tuesday June 4, 2019. According to data at TDOT's permanent count station ATR 3, the traffic volume on those two days represent the approximately 125th highest day in Pigeon Forge, which is about 18% lower than the 30th highest day. The 30th highest day is a reasonable design day in a tourist city like Pigeon Forge. Hence, the volumes on May 31, 2019 do not necessarily represent a normal design day for Pigeon Forge.

As a point-of-reference, CDM Smith conducted Synchro intersection level of service and capacity analysis at three representative intersections and the results are summarized in Figure 30. At all three intersections along the Parkway – Teaster Lane, Wears Valley Road, and Dollywood Lane – the overall intersection service levels were no worse than D, which is considered acceptable. This analysis suggests that, on the 125th highest day, some reserve capacity is available at these three key intersections. It should be noted that the Parkway experiences times of substantial vehicular congestion, and this condition is not reflected in this analysis. The congestion occurs during special events, when traffic is exiting the area on peak weekends, and at several hotspots.

The information obtained from the traffic counts and intersection capacity analysis is relevant to pedestrians because time taken away from the Parkway's vehicular movements would impact motorist delays and travel times on the Parkway. It becomes a tradeoff between vehicular versus pedestrian delays and convenience.



FIGURE 26: TURNING MOVEMENT COUNTS (SHEET I)



FIGURE 27: TURNING MOVEMENT COUNTS (SHEET 2)



FIGURE 28: TURNING MOVEMENT COUNTS (SHEET 3)



FIGURE 29: TURNING MOVEMENT COUNTS (SHEET 4)


FIGURE 30: EXISTING INTERSECTION LEVEL OF SERVICE

2.9 Crash Data

TDOT provided crash data for 2016-2018 and it is summarized in Table 2. There were 995 crashes reported along the Parkway in the 3-year period with 19 involving a bicyclist or pedestrian. The majority of bike/pedestrian crashes were a cyclist traveling the wrong way on a sidewalk, as shown in Table 3. Figure 31 illustrates the location of the 19 bike/pedestrian crashes along the parkway.

TABLE 2: BICYCLE AND PEDESTRIAN CRASH DISTRIBUTION

Total Crashes	Bicycle	Pedestrian	% Bike/Ped
	Crashes	Crashes	Crashes
995	П	8	2%

TABLE 3: CAUSE OF BICYCLE AND PEDESTRIAN CRASHES

Cause of Crash	Crashes	
Biking Wrong Way on Sidewalk	9	
Failed to Yield Right-of-Way	3	
Pedestrian Not in Crosswalk	3	
Right Turn Hook	2	
Other	2	
TOTAL	19	



FIGURE 31: BICYCLE AND PEDESTRIAN CRASHES ALONG

As part of an online survey that was conducted to receive public feedback, the public was polled to determine which intersection they perceived to be the most dangerous. The results of that question are shown in Figure 32 and compared to actual dangerous intersections. The public's perceptions of safety match closely with the reported crash data.



FIGURE 32: PERCEIVED DANGEROUS INTERSECTIONS COMPARED TO ACTUAL DANGEROUS INTERSECTIONS

3.0 PUBLIC INVOLVEMENT PROCESS

A vibrant and meaningful public engagement process was undertaken as a part of this study, and this section summarizes the results.

3.1 Outreach

An interactive website was created to gather information and feedback from the public. This site was highly successful, having received 1,228 survey responses. Additionally, the City of Pigeon Forge developed a list of stakeholders comprised of City of Pigeon Forge professional staff, TDOT professional staff, and local business owners. The stakeholders were extremely active in the two meetings in which they participated and provided very valuable input and feedback.

3.1.1 Meetings

A total of four meetings were held for this project including:

- Kick off Meeting on January 11, 2019
- Stakeholder Meeting on February 7, 2019
- Stakeholder Meeting on August 29, 2019
- City Commission Workshop on September 17, 2019

The Pigeon Forge City Commission will approve this plan at one of their regular meetings at a date to be determined later.

Minutes for each of these meetings as well as the PowerPoint presentations are included in the Appendix.

3.2 Feedback

3.2.1 Feedback from Stakeholder Meeting #1

The purpose of Stakeholder Meeting #1 was to get acquainted with the group and gather input regarding the current issues along the Parkway and the types of multimodal improvements they would want to see implemented. Using an interactive voting process in the stakeholder meeting, participants were asked eight questions to gauge priorities for various types of improvements.

In general, everyone agreed that the Parkway is currently too congested and does not provide a safe and comfortable atmosphere for non-motorized modes. The stakeholder group was very amenable to changing the corridor to provide facilities for all users; however, there was some hesitation for providing bicycle facilities along the Parkway.

A more detailed description of the responses is included in the Appendix within the meeting minutes. In addition to the eight questions, participants were asked to use dots on maps to indicate problem-areas. The location and description of the problem-areas is included in the meeting minutes.

3.2.2 Feedback from Stakeholder Meeting #2

The purpose of Stakeholder Meeting 2 was to present data analysis findings and survey results and gather feedback on the short-, mid-, and long-term improvement alternatives that were developed.

CDM Smith presented initial thoughts on the most logical and achievable short-term improvements that will promote multimodal travel along the Parkway:

- Provide crosswalks across the Parkway at all legs of signalized intersections.
- Retime signals to allow pedestrians to cross the Parkway in one phase.
- Implement driveway closures for a short segment as a pilot project to test impacts.

- Median closures/porkchops at full median openings located at unsignalized intersections.
- Provide trolley stop enhancements such as upgraded shelters, furniture, bike racks, etc.

In addition to providing these short-term alternatives, the stakeholders were asked to provide feedback on these ideas through a dot-exercise. Figure 33 below shows the stakeholder responses.



FIGURE 33: STAKEHOLDER VOTING EXERCISE

Driveway closures received the most frequent negative response. Median closures also received a somewhat luke-warm response. Transit enhancements and crosswalks on all intersection legs received a 100% positive response.

3.2.3 Feedback from Online Survey/Website

Eleven questions were asked on the online survey, which are provided in the Appendix. A summary of the results follows:

- Most respondents prefer to drive, though 12% said they would like to use a non-motorized mode.
- About three-fourths of the respondents said additional pedestrian facilities were a high to moderate propriety, though only one-third said it was a high priority.
- Bike facilities on the Parkway are not a very high priority.
- 40% of respondents placed transit improvements as a high priority and 40% as a moderate priority.
- Access management was a high priority for only 25% of the respondents and a low priority for 45%.

4.0 BENEFITS OF MULTIMODAL CORRIDORS

Many municipalities are turning to multimodal implementation to increase the share of non-motorized modes and transit use instead of capacity projects to allow for more vehicles along a corridor because of the benefits seen from creating complete streets. Complete streets help to create thriving communities by improving safety, equity, public health, and reducing transportation costs and congestion. Complete streets provide vulnerable users (cyclists and pedestrians) the proper infrastructure to operate in harmony with vehicles. The following describe the various benefits that a multimodal corridor can offer to a community.

4.1 Economic Development

Investing in multimodal improvements can stimulate private investment in redevelopment, especially in retail and tourism districts like Pigeon Forge. When pedestrians and cyclists do not have safe facilities to use, they are less likely to travel outside of their vehicles; however, when there are attractive facilities for them to use, they will feel comfortable walking along the Parkway in front of stores and attractions.

By integrating land use and transportation, a mix of building types and street designs can create a more attractive environment. Providing a mix of uses and pedestrian and/or bicycle infrastructure can also raise property values.



4.2 Safety

Streets without safe places to walk, cross, catch a bus, or bicycle put people at risk. Pedestrians are at a greater risk on arterial roadways designed to be wide and fast. They are at an even greater risk when there are no crosswalks available, such is the case in many areas along the Parkway. Designing a street with pedestrians in mind – sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for travelers with disabilities – may reduce pedestrian risk by as much as 28%.

The safety benefits of multimodal improvements are seen when

multiple features are combined into a comprehensive improvement. For example, painting a crosswalk on a highspeed road will not reduce pedestrian crashes; however, streets designed with pedestrians in mind that include sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for disabled travelers provide a safer pedestrian environment.

Multimodal corridors also commonly include design elements that result in speed reduction, which has a dramatic impact on pedestrian fatalities (See Figure 34). These elements include wide sidewalks, raised medians, street trees, narrow lanes, and bike lanes.



FIGURE 34: THE EFFECTS OF SPEED

Separate bicycle facilities are preferred because of unexpected conflicts at driveways and intersections. Drivers often do not anticipate bicycles riding along the sidewalk, especially against the flow of adjacent traffic. The City could regulate bicycle riding on the sidewalk and use measures such as the sign shown in Figure 35 for tourists and other users unfamiliar with the rules of the road in Pigeon Forge.

4.3 Health Benefits

Traditional streets designed with only cars in mind deny people the option to choose other more active ways to get

around, such as walking and biking. On facilities like the Parkway where there are existing sidewalks, the large intersections and heavy traffic make walking unpleasant and unsafe, discouraging nonmotorized travel. This multimodal corridor study allows the City to think about providing a network of facilities targeted to both motorized and non-motorized users and promote physical activity in the form of walking or biking.

4.4 Social Equity

Complete Streets are planned, designed, operated, and maintained to be safe and comfortable for everyone, regardless of age, ability, ethnicity, income, or chosen travel mode. When streets are incomplete, it is more difficult for people to walk or bicycle for exercise or for transportation; however, those who do not have access to an automobile still need to make trips and must do so perilously without the proper infrastructure. Complete streets allow everyone to stay connected to the community.

4.5 Multimodal Elements

The following sections identify multimodal elements from other areas that were used as inspiration for developing the alternatives for the Parkway.

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FIGURE 35: EXAMPLE BICYCLE LAWS SIGNAGE FROM COLUMBIA, SOUTH CAROLINA



4.5.1 Pedestrian Infrastructure Examples

The pedestrian facilities below (clockwise from top left) are a HAWK signal, median refuge, Rectangular Rapid Flashing Beacon (RRFB), and a lead pedestrian interval.



FIGURE 36: PEDESTRIAN INFRASTRUCTURE EXAMPLES

4.5.2 Bicycle Infrastructure Examples

The photos on the left represent a two-way cycle track. The photo on the right shows a bike facility adjacent to a wide pedestrian path.



FIGURE 37: BICYCLE INFRASTRUCTURE EXAMPLES



4.5.3 Transit Infrastructure and Wayfinding Examples

The photos below show various transit stops with shelters and informational signage. The photo on the top left illustrates how the median can be dedicated for transit lanes.



FIGURE 38: TRANSIT INFRASTRUCTURE EXAMPLES

4.5.4 Complete Streets Examples

Below are examples of how corridors can accommodate all transportation modes.



FIGURE 39: COMPLETE STREETS EXAMPLES

5.0 SCENARIO DEVELOPMENT

Several scenarios were developed that take into account the various multimodal elements that the stakeholders and public would like to see implemented throughout the Parkway. All of the scenarios maintain the existing roadway width from the back of sidewalk. Additional right-of-way is not anticipated to be needed.

The portion of the Parkway south of SR 321/Wears Valley Road currently consists of a very wide grass median with an open drainage system. The scenarios presented below would require a drainage analysis and extensive curb and gutter installation for the median modifications. In addition to drainage analysis, all design concepts would require further traffic analysis to ensure vehicular operations would not be impeded before advancing any of the alternatives proposed into the design stage.

5.1 Cross Sections (Long-Term)

5.1.1 Alternate A – North of Wears Valley Road (SR 321)

The existing width of the Parkway from the back of sidewalks is approximately 120 feet. The existing grass median is approximately 22 feet at its widest point. The proposed cross section as shown in figure 40 reduces the grass median to 10 feet. The existing sidewalk is located at the back of curb. The proposed typical section provides an 8-foot landscape strip between the roadway and the pedestrian walkway. This area would also accommodate transit shelters where appropriate. The existing sidewalk would be replaced with a 12-foot wide shared use path.

5.1.2 Alternate A – South of Wears Valley Road (SR 321)

The existing width of the Parkway is approximately 192 feet with a grass median of up to 70 feet. Alternative A proposes to reduce the grass median to 30 feet. A 16-foot linear swale buffer would be provided between the roadway and the non-motorized facilities. Within these 16 feet, 8 feet would be dedicated to transit shelters, where appropriate. Behind the landscaping would be a 12-foot two-way bike lane and a separate 10-foot sidewalk. Another landscaped buffer would be located between the sidewalk and the parking areas. Figure 41 illustrates the concept.

5.1.3 Alternate B – South of Wears Valley Road (SR 321)

Utilizing the same 192-foot width, Alternate B, as shown in Figure 42, proposes a two-way bike lane through the center median. In order to accommodate the bike path, the center median would be reduced to approximately 48 feet. An 18-foot linear swale area would be provided that could also accommodate transit shelter areas, where appropriate. An 11-foot sidewalk is proposed behind the landscaped area. Additional crossing considerations at all median openings and signalized intersections would need to be analyzed to ensure pedestrian and cyclist safety.



FIGURE 40: ALTERNATE A NORTH OF WEARS VALLEY ROAD



FIGURE 41: ALTERNATE A SOUTH OF WEARS VALLEY ROAD



FIGURE 42: ALTERNATE B SOUTH OF WEARS VALLEY ROAD

5.1.4 Alternate C – South of Wears Valley Road (SR 321)

Alternate C (see Figure 43) proposes to transform the grass median into a dedicated trolley facility. Many of the public comments received indicated that a transit lane was desired in the median. This alternative could transpire in many different ways and has the potential to transform the Parkway. Safe pedestrian crossings between the sidewalk and the transit stops in the median will be critical for this alternative to be successful.

5.1.5 Alternate D – South of Wears Valley Road (SR 321)

Alternate D proposes the same modifications to the grass median as Alternative A. In lieu of separate bicycle and pedestrian facilities, a 15-foot shared use path is proposed. A 12-foot linear swale buffer would be provided between the roadway and the shared use path, with 8 feet dedicated to transit shelters, where appropriate. An additional landscaped buffer would be located between the sidewalk and the parking areas. Figure 44 depicts this concept.

5.2 Intersection Modifications (Mid-Term)

In support of the typical sections, three intersection concepts were developed to illustrate how the proposed cross sections could be implemented. The following concepts are for illustrative purposes and will require further study and design before implementation.

5.2.1 Teaster Lane

Teaster Lane is a busy three-legged, or T-intersection, located north of Wears Valley Road (SR 321) where the median width is approximately 22-feet wide. In this portion of the Parkway, a 10foot wide shared use path is proposed that can be accommodated by reducing the lane widths and the median. Other improvements at Teaster Lane include providing crosswalks at all legs of the intersection, providing a pedestrian refuge island in the median, and reducing the curb radii to discourage higher turning speeds. The implementation of the crosswalks will require a study to look at how adding a pedestrian walking phase to the signal timing will impact vehicular operations. The curb radii will need to follow TDOT standard guidelines based on design vehicles; however, there are techniques on providing larger vehicles enough turning clearance with a smaller radius by allowing them to turn into the middle receiving lane of a six-lane street. These details will be hashed out during the design phase. Figure 45 shows the Teaster Lane intersection concept.



FIGURE 43: ALTERNATE C SOUTH OF WEARS VALLEY ROAD



FIGURE 44: ALTERNATE D SOUTH OF WEARS VALLEY ROAD



FIGURE 45: TEASTER LANE INTERSECTION IMPROVEMENTS

5.2.2 Wears Valley Road (US 321)

The Wears Valley Road intersection is perceived as the most dangerous intersection along the Parkway within Pigeon Forge. There is also statistical evidence that shows this intersection experiences the highest number of crashes out of the 14 signalized intersections within Pigeon Forge. There is currently a design project that is ready for construction that modifies the southwestern approach along Wears Valley Road leading up to the Parkway. The project includes replacing the existing asphalt with concrete and removing the southbound and eastbound channelized right turn lanes, which tightens up those curb radii and shortens the crossing distance for pedestrians across Wears Valley Road. In conjunction with this construction, the City could position themselves to make low-cost pedestrian improvements such as crosswalks across the Parkway, median refuge areas, and signal modifications to allow for a pedestrian phase. The implementation of the crosswalks will require a study to look at how adding a pedestrian walking phase to the signal timing will impact vehicular operations. The City could also reduce the curb radii of the northeastern leg of the intersection, based on TDOT standards for trucks and RVs. Figure 46 illustrates the proposed improvements at this intersection.

5.2.3 Dollywood Lane (SR 449)

Dollywood Lane is representative of the configuration of the seven (7) intersections south of Wears Valley Road that operate as singlepoint T-intersections. Currently, pedestrians are provided a crosswalk that zig zags across the left turn lane. This configuration is ideal for vehicular traffic because it allows the pedestrians to cross the Parkway while the side road has a green phase; however, due to the crossing distance, pedestrians are not able to fully cross the Parkway during the side road's green phase. They must wait in the median refuge areas until another pedestrian phase is called. The proposed improvement, as shown in Figure 47, for the Dollywood Lane intersection shows an additional crosswalk to cross the Parkway. The implementation of the new crosswalk will require a study to look at how adding a pedestrian walking phase to the signal timing will impact vehicular operations.

5.3 Driveway/Access Modifications (Mid-Term)

As discussed in the Driveway Inventory section previously, there are 283 driveway openings along the Parkway within the study area. Every driveway cut presents a conflict point between vehicles and pedestrians walking along the Parkway. Although TDOT requires a standard spacing of 200 feet between driveways, the Parkway was developed long before the standard was adopted. Pigeon Forge should be proactive in reaching out to stakeholders along the Parkway and present the safety benefits of consolidating driveways, which would, in turn, create a more comfortable pedestrian environment and encourage more foot activity in front of their businesses. In addition to the safety benefits, by reconfiguring an extra driveway cut, businesses can increase their number of parking spaces. A traffic study would need to be performed before any median openings or driveways are closed to ensure that the redistribution of traffic would not cause latent delays elsewhere along the Parkway.



FIGURE 46: WEARS VALLEY ROAD INTERSECTION IMPROVEMENTS



FIGURE 47: DOLLYWOOD LANE INTERSECTION IMPROVEMENTS

5.3.1 Driveway Closure Concept from Wears Valley Road to The Island Drive

Figure 48 illustrates how driveway consolidation and median closures could be implemented along a small section of the Parkway. This section between Wears Valley Road and The Island Drive currently has 25 driveway cuts and two full median openings. A positive note about this section is that cross access is available between each of the parcels, which is imperative for successfully consolidating driveways. Additionally, each parcel has an entrance along the parallel roads behind the parcels, making it easy for vehicles to navigate to a signalized intersection to enter the Parkway.

5.3.2 Access Management on South End

Figure 49 through Figure 51 represent what the southern end of the Parkway from Dollywood Lane to the Spur could look like if the driveway spacing were in compliance with the TDOT standard spacing. This scenario also proposes closing the full median openings at unsignalized intersections and replacing with J-turns. These figures are for illustrative purposes only, as property owners were not consulted during the development of this particular concept drawing.

The most serious crashes that occur along the Parkway are angle crashes associated with left turns. The J-turn configuration shown in these figures would eliminate left turns from side streets and driveways onto the Parkway; instead, those wanting to turn left would make a right turn from the driveway and then make a u-turn further down the road. Proper acceleration and deceleration lanes would need to be provided so vehicles can safely merge onto the Parkway. Additional traffic studies will need to be done to ensure that the closures will not impede traffic flow.



FIGURE 48: DRIVEWAY CLOSURE CONCEPT BETWEEN WEARS VALLEY ROAD AND THE ISLAND DRIVE



FIGURE 49: ACCESS MANAGEMENT CONCEPT SOUTH OF DOLLYWOOD LANE (SHEET I)



FIGURE 50: ACCESS MANAGEMENT CONCEPT SOUTH OF DOLLYWOOD LANE (SHEET 2)



FIGURE 51: ACCESS MANAGEMENT CONCEPT SOUTH OF DOLLYWOOD LANE (SHEET 3)

5.4 Bikeways/Greenways Master Plan

The City of Pigeon Forge contracted with a consulting firm to develop a Greenways and Bikeways Master Plan that was published in June 2018. Figure 52 presents a summary of the master plan. From Wears Valley Road southwards, the Parkway contains an existing side-path (7.5 to 8.0-foot sidewalk with 4-foot grass strip separating sideway and road) and from that intersection northwards it contains a regular sidewalk (generally a 7.5 to 8.0 foot sideway abutting the road). Bike lanes are not proposed along the Parkway but are proposed on parallel roads to the Parkway. Several intersections along the Parkway are targeted for pedestrian improvements according to the Greenways and Bikeways Master Plan. This study recommends implementing those intersection improvements that would allow for cohesion between the multimodal improvements proposed along the Parkway and the overall vision for the bikeways and greenways throughout Pigeon Forge.



FIGURE 52: GREENWAYS AND BIKEWAYS MASTER PLAN MAP

6.0 **RECOMMENDATIONS**

This study provides the framework to transform the Parkway into a multimodal facility that will not only improve the quality of life for residents, but also improve mobility of all modes for tourists and the local work force. The scenarios developed in this report are intended to serve as a long-range plan for the City of Pigeon Forge. In an effort to help the City strategize and plan for how they ultimately envision the Parkway in the future, the following graphic was developed to categorize improvement projects into short-, mid-, and long-term timeframes. It should be noted that although the results from zoning regulation changes will come to fruition in the long term, updates to the regulations should begin immediately.

 Crosswalks at Signalized Intersections • Median Closures/J-turns • Signal Timing Adjustments • Trolley Stop Enhancements Short- Driveway Consolidation/Increase Parking • Wayfinding Term • Intersection Geometry Modifications (Reduce Radii, Pedestrian Refuge, etc) • Access Management Along South End Mid-Term Major Cross Section Modifications Zoning Regulation Changes Parallel Street Network Long-Term Underground Utilities

7.0 POTENTIAL FUNDING SOURCES

The recommendations provided in this study will likely need to be implemented in phases, which is why smaller scale projects were categorized as short-term and mid-term projects. There are several funding opportunities available through State and Federal grant programs that can aid in financing the implementation of this plan. The table below summarizes some of the more popular programs.

Grant/Program	Agency	Description	Match
Transportation Alternatives Program (TAP)	TDOT	The Transportation Alternatives Program provides funding for programs and projects including pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation.	80% State 20% Local For Construction Only
Multimodal Access Grant Program	трот	TDOT's Multimodal Access Grant is a state-funded program created to support the transportation needs of transit users, pedestrians, and bicyclists through infrastructure projects that address existing gaps along state routes.	95% State 5% Local Max - \$1M
Highway Safety Improvement Program (HSIP)	TDOT	The HSIP is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land.	90% Federal 10% Non-Federal
Spot Safety Improvement Program	TDOT	This program was developed to fund safety projects that do not qualify under the HSIP.	Federal 90-100%
Recreational Trails Program (RTP)	TDEC	Provides grant funding for land acquisition for trails, trails maintenance and restoration/rehabilitation, trail construction, and trail head support facilities.	80% State 20% Local Max - \$250K
Local Parks and Recreation Fund (LPRF)	TDEC	Provides grants to eligible local government entities for the purchase of lands for parks, natural areas, greenways, and recreation facilities. The funds may also be used for trail development and capital projects in parks, natural areas, and greenways.	50% State 50% Local Max - \$1M
Surface Transportation Block Grant (STBG)	FHWA	Provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.	80% Federal 20% Non-Federal Safety Projects funded at 100%

8.0 APPENDICES

- CTPG Application
- Pedestrian Time to Cross Figures
- Meeting Minutes
- Survey Responses

CTPG APPLICATION



Letters of Intent are due from Cities to RPO coordinators by January 1, 2018.

RPO Coordinators must submit Letters of Intent to TDOT by close of business January 31, 2018.

2017-18 Letter of Intent to Seek Funding

- 1) Please tell us which Rural Planning Organization which serves your community: <u>Pigeon Forge</u>
- 2) The following plan types are eligible for funding under the Community Transportation Planning Grant Program. Please select the plan type for which your community is seeking funding. Your RPO coordinator can help you determine which type most closely describes your proposed plan (choose only one):
 - ___ Community Mobility Plan
 - X Corridor Study
 - __ Complete Street Plan
 - ____ Pedestrian and Bicycle Master Plan
 - ___ Road Diet Analysis
 - ____ Transportation Systems Management and Operations (Signal Retiming Plan, Etc)
- 3) Please provide an overview of the plan for which you are seeking funding, highlighting key goals it would seek to accomplish. Your RPO Coordinator can assist you with putting together this description (Attach additional sheets as necessary, maximum 500 words).

Attached

4) Please provide a map of the area the grant would seek to study as an attachment to this letter, highlighting key roadways and other significant features. Your RPO coordinator can assist you with putting together a map.

Attached

5) Will your local government be willing to provide an upfront 10% match as part of this grant application as well as to adopt a resolution stating its intent to implement the plan document produced following completion of this grant?

Provide 10% Local Match?	X_YESNO	Adopt Board Resolution? _	X_YESNO
-p.J.e			1-25-18
David Taylor	Community Development	Pigeon Forge Community Development	1.25.2018
Name (Print)	Title	Organization	Date

City of Pigeon Forge Letter of Intent

State Route 71/ US 441"Parkway" Corridor Study

State Route 71 or the Parkway as it is locally known stretches from the Sevierville city limits on through Pigeon Forge and forward into Gatlinburg. The State Route is an essential corridor for the communities neighboring The Great Smoky Mountain National Park. Its significance to the area cannot be understated, since it moves a significant majority of passenger vehicles to and through the area AADT in 2017 was an estimated 50k vehicles. Being as much a destination as it is a thoroughfare, SR 71 is one the single most vital asset to the State and the surrounding communities. The nature of corridor wide land-use is classified as commercial tourism, and it places a significant burden upon vehicular movement along the corridor. With the sustained growth in tourism and development in the area, it has become paramount to plan for the effective development of the transportation asset.

Pigeon Forge seeks to complete a comprehensive multi-modal transportation plan for the portion of SR 71 within the city limits of Pigeon Forge. The current transportation structure of the Parkway is proving to be unsustainable, there is a need to incorporate modern transportation planning principals so to create a transportation asset that serves all modes of transportation. Existing SR 71 is a 6 lane divided facility with 7ft sidewalks abutting each side. It is a goal of Pigeon Forge to develop the corridor in a way that encourages a higher standard of development. The potential of, optimizing access points, shortening crossing distances, improving perpendicular crossing for non-motorized modes of transportation and the prioritization of transit operation all fall under the goals for SR 71's development. The city of Pigeon Forge has never embarked on such a comprehensive planning effort, but is already taking similar proactive steps elsewhere within the City.

The SR 71/US 411/ Parkway Corridor Study, will also maximize the planning efforts along Veteran's Boulevard Corridor Management Agreement. Many of the steps taken in the CMA planning activities will be ported over and coordinate with the Parkway Corridor Study. In addition the City is currently undergoing bicycle and pedestrian planning efforts and would likely coordinate with other planning efforts. Protecting this investment will be vital, and Pigeon Forge is dedicated to partnering with neighboring municipalities to enhance Corridor study planning efforts.

The Corridor Study is an ambitious effort, but the City is committed to all stages of the plans life cycle, from planning to authorization to implementation. Future efforts at regional coordination can be pursued should the Corridor Study be a success. The City of Pigeon Forge vitally needs to protect this asset and with continuing, comprehensive and collaborative planning, the goal of a multi-modal corridor can be realized.



Map of proposed Project Area

1. Great Smoky Mountains National Park &

Gatlinburg

- 2. Veteran's Boulevard
- 3. Intensive development of tourism industry
 - 4. Priority area for transit enhancement
- 5. Future major road location "Jake Thomas

Extension"

PEDESTRIAN TIME TO CROSS FIGURES
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PIGEON FORGE PARKWAY MULTI-MODAL STUDY





PIGEON FORGE PARKWAY MULTI-MODAL STUDY





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PIGEON FORGE PARKWAY MULTI-MODAL STUDY

PIGEON FORGE PARKWAY MULTI-MODAL STUDY

MEETING MINUTES

MEETING MINUTES

Pigeon Forge Multi-Modal Corridor Study Stakeholder Meeting #1

Date:	February 7, 2019
Time:	11:00 am – 1:00 pm
Location:	Pigeon Forge City Hall – Meeting Room B
Prepared by:	Melody Butler

Project Name: Pigeon Forge Multi-Modal Corridor Study

Attendees:	Karl Kreis, City of Pigeon Forge	kkreis@cityofpigeonforgetn.gov
	Lanny Goodwin, City of Pigeon Forge	lgoodwin@cityofpigeonforgetn.gov
	Joe Barrett, East TN Development District	jbarrett@etdd.org
	Laurie Taylor, Country Tonite	Laurie@countrytonitepf.com
	David Taylor, City of Pigeon Forge	dtaylor@cityofpigeonforgetn.gov
	Lynn Wilhoite, City of Pigeon Forge	lwilhoite@cityofpigeonforgetn.gov
	Bobby Braden, City of Pigeon Forge	bbraden@cityofpigeonforgetn.gov
	Steve Reagan, Reagan's House of Pancakes	<u>sareagan@rfsdelivers.com</u>
	Mark Rutledge, Pine Mountain Hospitality	markrutfom@aol.com
	Michelle Christian, TDOT	<u>michelle.a.christian@tn.gov</u>
	Eric Brackins, City of Pigeon Forge	<u>ebrackins@icloud.com</u>
	Jeff Mize, CDM Smith	<u>mizerj@cdmsmith.com</u>
	Melody Butler, CDM Smith	butlermn@cdmsmith.com
	Hollis Loveday, CDM Smith	lovedaywh@cdmsmith.com
	Chris Kirby, CDM Smith	<u>kirbync@cdmsmith.com</u>

Meeting Objective: To gather input and have discussions regarding the major issues along the Parkway and the types of multimodal improvements that could be used to enhance the Parkway.

Meeting Summary:

David Taylor opened the meeting by welcoming everyone and explaining the project purpose. Jeff Mize also explained that this project is a result of a TDOT grant for multimodal improvements and that the final study will need to be approved by the Pigeon Forge City Commission. The meeting then proceeded with introductions of everyone in the room and their relation to the project.

Melody Butler then began the PowerPoint presentation, again going over the project purpose and the purpose of this meeting. She also went over the project schedule to show the tasks that will be performed before the second stakeholder meeting in the summer of 2019. Then several examples of potential multimodal facilities were identified and discussed with the group. These included sidewalks, curb extensions, median refuges, signal options, bike lanes, shared-use paths, cycle tracks, and reducing the median width to provide wider active transportation areas along the outside lanes of the Parkway.

Part of this study involves researching cities with similar characteristics as Pigeon Forge that have implemented multimodal improvements; therefore, several initial "similar cities" were identified and discussed during the meeting (Branson, Missouri; Myrtle Beach, South Carolina; Las Vegas, Nevada; Orlando, Florida). The audience provided feedback on other cities they think could also be researched for this endeavor. The cities the stakeholders brought up were Hilton Head, South Carolina; Minneapolis, Minnesota; Anaheim, California; Indianapolis, Indiana; Seattle, Washington; and New Orleans, Louisiana.

CDM Smith then polled the stakeholders in an effort to understand how they currently view the Parkway, how they wish to view the Parkway in the future, and their priorities for various multimodal improvements. The meeting then wrapped up with the stakeholders identifying where there are safety concerns along the Parkway and where they would like to see multimodal improvements.

Detailed Notes:

The group concurred that there is a need to provide multimodal facilities along the Parkway to spur development and make the area more appealing. Below are the detailed summaries from the discussions, voting exercise, and mapping exercise.

Areas of concern:

- The number of access points (both driveways and median openings) is too many for the stretch of the Parkway through Pigeon Forge (270 driveways, 47 median openings). From a monetary and operations perspective, it is likely easier to close underutilized driveways as opposed to median openings.
- Bicycle facilities will need to be integrated at businesses and infrastructure should be built quickly if a bikeways system is to be successful. The City should market to bikes if the facilities are to be utilized.
- A traditional cross-section configuration with bike lanes and transit stops on the outside lanes introduces conflict points between the two modes. A dedicated transit lane is ideal. Innovative bike infrastructure such as ramps should be considered.
- The international students that come to Pigeon Forge during the peak season to work use bicycles as a commute mode. The infrastructure along the Parkway does not provide the safe space that they are likely accustomed to. Not only does the Parkway need safer bicycle facilities, but there should be an educational outreach to ensure users know the rules.
- If adjustments are made to the cross-section, the median should be narrowed. Parking is critical to business owners, so any modifications should be made within the existing cross-section from back of sidewalk to back of sidewalk.
- From the group's perspective, a majority of the crashes on the Parkway are rear-end crashes resulting from the stop and go traffic. "Good Samaritan" crashes also occur

frequently because vehicles in one lane will stop for a turning vehicle but the cars in the adjacent lane that are not visible to the turning vehicle do not stop.

- The existing conditions of the corridor are not conducive to walking or cycling. The stakeholders agreed that providing a landscape that creates an inviting walking and/or biking environment with street trees and more green space would be a key component to changing the feel of the Parkway.
- Wayfinding would also be a way to transform the Parkway into a more accessible environment. Sections of the Parkway could be divided into zones that tourists could navigate between easily, much like a large theme park.
- Safe pedestrian crossings should be provided more frequently than just at signalized intersections. They should also be spaced evenly to prevent unsafe mid-block crossings at undesignated areas.
- The City will need to plan for future ordinances that restrict/limit the use of budding motorized modes such as scooters, segues, or E-bikes.
- During busy events such as rod runs, the amount of pedestrian calls on the signals causes the signal to be inoperable. The City should consider a traffic management plan for these big events.
- There are areas along the Parkway where lighting is insufficient.

Similar Cities:

- Hilton Head, South Carolina bikeable city; touristy
- Minneapolis, Minnesota bikeable city "Most Bikeable City in the U.S."
- Anaheim, California shuttles transport tourists between Disneyland parks; signalized intersections with lead pedestrian signals; touristy
- Indianapolis, Indiana Cultural Trail through the City with designated areas for pedestrians and bicycles
- Seattle, Washington bikeable city
- New Orleans, Louisiana street car in median

Voting Summary:

Question 1: What words would you use to describe the current state of the Parkway?

Question 2: What is your priority for providing non-motorized safety improvements for crossing the Parkway?

		Priority	for Crossin	ngs	
80%					
60%					
40%				_	
20%					
0%	Low	Moderately Low	Moderate	Moderately High	High

Question 4: What is your priority for providing bicycle facilities along the Parkway?

Question 5: What is your priority for optimizing access points (driveways/median openings) along the Parkway?

Question 6: What is your priority for providing transit enhancements along the Parkway?

Question 7: What is your priority for improving vehicular operations along the Parkway?

Question 8: What words would you use to describe what you want the Parkway to look like in the future?

Map Summary:

Music Road/Lazy Lane to Wears Valley Road

- Transit enhancements on both sides of the Parkway at the Music Road/Pinoak View Drive intersection
- Pedestrian and bicycle facilities at the Music Road/Pinoak View Drive intersection
- Transit enhancement in front of Titanic attraction
- High crash area (3 red dots) at median opening in front of Local Goat/Howard Johnson hotel
- Transit enhancements at intersection of Sunset Dr/Plaza Dr
- Crashes observed (1 red dot) at intersection of Sunset Dr/Plaza Dr
- Pedestrian improvements needed at intersection of Sunset Dr/Plaza Dr
- Pedestrian and bicycle facilities at Henderson Chapel Rd/Sugar Hollow Rd intersection
- Transit enhancements on north side of Parkway at Henderson Chapel Rd/Sugar Hollow Rd intersection and in front of the Grand Majestic on south side of Parkway
- Bicycle and especially pedestrian improvements at Teaster Lane intersection
- Bicycle and pedestrian facilities at Christmas Tree Lane
- Crashes observed (1 dot) at Community Center Dr intersection
- Pedestrian and bicycle improvements at Community Center Dr intersection

Wears Valley Road to Pine Mountain Rd

- Wears Valley Road intersection high crash area!
- Worst area is Wears Valley Road intersection (comment)
- Wears Valley Road need a roundabout here
- Bicycle and pedestrian improvements at Wears Valley Road intersection
- Pedestrians cross unsafely between Wears Valley Road and Island Drive (comment)
- Crashes observed (1 red dot) at median opening in front of Dolly Parton's Smoky Mountain Adventures (Lafollete Cir)
- Crashes observed (1 red dot) at intersection of The Island Dr
- Need pedestrian facilities at intersection of The Island Dr
- Newest ped crossing at intersection of The Island Dr and works best (comment)
- High crash location (2 red dots) at Sharon Dr intersection in front of Reagan's House of Pancakes
- Need pedestrian and bicycle improvements in front of Lid'l Dolly's at signalized median opening
- Crashes observed (1 red dot) at Jake Thomas Boulevard
- Bicycle and pedestrian improvements at Jake Thomas Boulevard
- High crash area (2 red dots) at Pine Mountain Rd
- Bicycle and pedestrian improvements at Pine Mountain Rd
- During Rod Runs, Pine Mountain Rd intersection is a bad crossing for pedestrians (comment)

Pine Mountain Rd to Indian Cir Dr

- Pedestrian facility at S River Road intersection
- Crashes observed (1 red dot) at median opening in front of All Sauced Up/Speed Zone Fun Park
- Bicycle and pedestrian facilities needed at Old Mill Avenue intersection
- Crashes observed (1 red dot) at Old Mill Ave intersection
- Crashes observed (1 red dot) at Ogle Dr
- Bicycle facility needed along Ogle Dr
- Crashes observed (1 red dot) at Emert St/Methodist St intersection
- Bicycle and pedestrian facilities needed at Emert St/Methodist St intersection
- Crashes observed (1 red dot) at Dollywood Ln intersection
- Bicycle and pedestrian facilities needed at Dollywood Ln intersection
- High crash area (3 red dots) at Mill Creek Road
- Bicycle and pedestrian facilities at Mill Creek Rd
- Crashes observed (1 red dot) at Golf Dr median opening
- Pedestrian and bicycle facilities needed at Golf Dr median opening
- A ped/bike crossing is needed at Golf Dr (comment)
- Crashes observed (1 red dot) at Jehu St median opening
- Bicycle and pedestrian facilities needed at Jehu St median opening
- Crashes observed (1 red dot) at Cates Ln in front of Smoky's Pancake Cabin
- Pedestrian and bicycle facilities needed at Indian Cir Dr

MEETING MINUTES

Pigeon Forge Multi-Modal Corridor Study Stakeholder Meeting #2

Date:August 29, 2019Time:10:00 am - 12:00 pmLocation:Pigeon Forge City Hall - Meeting Room BPrepared by:Melody Butler

Project Name: Pigeon Forge Multi-Modal Corridor Study

Attendees:	Karl Kreis, City of Pigeon Forge	<u>kkreis@cityofpigeonforgetn.gov</u>
	Lanny Goodwin, City of Pigeon Forge	lgoodwin@cityofpigeonforgetn.gov
	Joe Barrett, East TN Development District	jbarrett@etdd.org
	Laurie Taylor, Country Tonite	Laurie@countrytonitepf.com
	Joseph Ohman, Fun Stop	<u>joewohman@aol.com</u>
	Jim Bagley, Citicommunities	jbagley@cityhomes-us.com
	Stephen Houser, PF Planning Commission	stephen@stageswest.com
	David Taylor, City of Pigeon Forge	<u>dtaylor@cityofpigeonforgetn.gov</u>
	Lynn Wilhoite, City of Pigeon Forge	lwilhoite@cityofpigeonforgetn.gov
	Steve Reagan, Reagan's House of Pancakes	<u>sareagan@rfsdelivers.com</u>
	Michelle Christian, TDOT	<u>michelle.a.christian@tn.gov</u>
	Eric Brackins, City of Pigeon Forge	<u>ebrackins@icloud.com</u>
	Jeff Mize, CDM Smith	<u>mizerj@cdmsmith.com</u>
	Melody Butler, CDM Smith	butlermn@cdmsmith.com

Meeting Objective: To present data analysis findings and survey results. To also present the short-, mid-, and long-term improvement alternatives and gather feedback.

Meeting Summary:

The meeting began with CDM Smith reviewing the purpose of the project and the purpose of the meeting. Ultimately, this study needs to result in improvement ideas that will be accepted and approved by the Pigeon Forge City Commission. Therefore, we need to provide short-term improvement ideas that align with the immediate needs for the Parkway and long-term improvements that will align with the vision for the Parkway in the future.

The results from the online survey were presented side-by-side with the results of the survey questions posed to the stakeholders at the first meeting on February 7, 2019. The key takeaways are summarized below:

- The most prominent characteristic of the Parkway is how congested it is.
- Crossing the Parkway is difficult and dangerous for non-motorized modes.
- There was a large positive response for improving transit operations and amenities.

- People still want to drive and would like to be able to travel along the Parkway without it being so congested.
- The intersections people perceive to be dangerous align with the actual areas with high crash densities.

The most prominent issues identified through data analysis are summarized below:

- Not all of the signalized intersections have crosswalks provided across the Parkway.
- Of the 14 signalized intersections, only four have pedestrian phases that allow someone to cross the Parkway during one phase.
- Between 2016-2018, 11 bicycle and 8 pedestrian crashes were **reported**. Of the 11 bicycle crashes, 9 were caused by the bicyclists riding the wrong way on the sidewalk.
- There are currently 283 driveways along the Parkway. If the Parkway were to be in compliance with TDOT's standard spacing of 200', the number of driveways would reduce to 154.

CDM Smith presented their thoughts on the most logical and achievable short-term improvements that will provide promote multimodal travel along the Parkway:

- Provide crosswalks across the Parkway at all legs of signalized intersections.
- Retime signals to allow pedestrians to cross the Parkway in one phase.
- Implement driveway closures for a short segment as a pilot project to test impacts.
- Median closures/porkchops at full median openings located at unsignalized intersections.
- Provide trolley stop enhancements such as upgraded shelters, furniture, bike racks, etc.

In addition to providing these short-term alternatives, the stakeholders were asked to provide feedback on these ideas through a dot-exercise. The photo below shows the stakeholder responses.

	snort-rerni mip	novernems	T	
IMPROVEM	ENT TYPE	LOVE	LIKE	HATE
Crosswalks on all legs of inte	rsection		,	
Pedestrians cross Parkway in	one phase		8	
Driveway Closures			•	•••
Acdian Closures	A STREET			8
ansit Enhancements (upgra ade trees, cashless system,	ded shelters, furn etc.)	iture,	•	

Mid-term improvements include redesigning several key intersections and monitoring to assess whether changes should be made throughout the corridor. Another mid-term pilot project would be to retrofit the southern section of the Parkway to comply with TDOT driveway spacing standards.

Long-term improvements include major cross section changes that would reduce the width of the median to allow for wider sidewalks, landscape buffers, and/or a multi-use trail. Additionally, the City would need to implement zoning changes that would increase and enhance pedestrian and bicycle activity. To move vehicles more efficiently through Pigeon Forge, the City is developing a parallel roadway network that allows drivers more options.

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Pigeon Forge Multi-Modal Corridor S Stakeholder Meeting #2 August 29, 2019	COMPANY	Planing Namua Manuta Taite	MEEDIN FORGY WAYS TRANSIT	FWN STOP- / PF	City of Pigeon Forge Chy of h n	Est TN Development Dist	lit of Picentarye	CHOT Greenbuck	CDM Smith	CDM Smith		
21	NAME	Michelle Christian	Lynn Will Hok	Gosuph CHMMN	VEric Brackins Kal Nreh	The Barrett	David Taylor	TIM BAGGOIN	Melody Butler	Jeft Mize	Star Hurser	Shur Reagan

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AGENDA

AUGUST 29, 2019

- Introductions
- Project Purpose
- Meeting Purpose
- Schedule
- Public Survey Responses
- Analysis Results
- Voting Exercise
 - Short-Term Improvements
 - Long-Term Improvements

PROJECT PURPOSE

- This study will provide a comprehensive multimodal transportation plan for the portion of the Parkway through the Pigeon Forge city limits.
- The goal is to develop the corridor in a way that encourages a higher standard of development while also

improving the mobility of all transportation modes.

MEETING PURPOSE

STAKEHOLDER:

A stakeholder is either an individual, group or organization who is impacted by the outcome of a project. They have an interest in the success of the project.

SCHEDULE

	2019							
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
sk 1 – Engagement of the City and Stakeholders								
*Stakeholder Meeting 1 (Project Initiation)								
*Publish Website and Online Survey								
							٨	
*Stakeholder Meeting 2							$\overline{\mathbf{x}}$	
*Pigeon Forge City Commission Meeting (Present Recommendations)								
sk 2 – Data Collection								
*Collect Crash Data								
*Inventory Transportation Facilities								
*Collect Traffic Data								
sk 3 – Assessment, Analysis, and Alternatives								
*Quantify Mobility Challenges								
*Analyze Multimodal Operations								
*Prepare Improvement Alternatives (Short Term and Long Term)								
sk 4 – Recommendations and Report								
*Prioritize Recommendations								
*Prenare Report								

WHAT IS YOUR PRIORITY FOR PROVIDING TRANSIT ENHANCEMENTS ALONG THE PARKWAY?

EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE (MAY 31, 2019)

AM PEAK – BETWEEN 7-9

PM PEAK – BETWEEN 4-6

									_	_	_	_	_	_	_
existing pedestrian		sic Road/ cy Lane	sic Road/ Ioak View Dr	nderson apel Rd	ıster Lane	ristmas Tree 1e	mmunity nter Dr	ears Valley	e Island ve	d Roof Mall	e Thomas d	ie Mountain ad	i Mill Ave	llywood Je	nner ights Road
FACILITIES	Pedestrian Amenity	Σa	μ	ਜੋ ਦੇ	μË	친구	ပိ ပီ	≳ 5	Ęğ	R e	통	Pir Bo	ŏ	۳Ъ	ి గ ి
	Parkway Crosswalk														
_	All Legs														
	One Leg						•					٠			
Goal:	Standard Striping														
Get pedestrians	Ladder Striping														
across the	Signal Head														
Parkway in one	Push Button														
phase.	Crossing Time (Best Case)														
	One Phase (N→S)														
_	One Phase (S→N)														
	Multiple Phases ($N \rightarrow S$)								•	•	•	•	•	•	•
	Multiple Phases (S \rightarrow N)										•		•		
	No Crossing Phase														

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Total Crashes	Bicycle Crashes	Crashes	Crashes
995	П	8	2%
	Cause of Cr	ash	Crashes
Biking W	/rong Way on	i Sidewalk	9
Failed to	Yield Right-c	of-Way	3
Pedestria	an Not in Cro	osswalk	3
Right Tu	n Hook		2
Other			2
TOTAL			19

Year	North	South	Total	South Partnay Wer Branch Works Very Buildings Bunds
2013	111,729	62,322	174,051	Brains Pigeon Forge
2014	152,509	66,045	218,554	A A A A A A A A A A A A A A A A A A A
2015	155,036	66,304	221,340	Contraction Contraction of the C
2016	157,574	64,120	221,694	Pigeon Porgo
2017	138,506	59,448	197,954	
2018	143,822	64,597	208,419	and the Property of Demonstry
	Parties and the second			Contraction of the second seco
























MID-TERM IMPROVEMENTS: ACCESS MANAGEMENT ON SOUTH END





















NEXT STEPS

- Commission Workshop early September
- Report due September 30

SURVEY RESPONSES

Survey Responses









CDM Smith



Question 3: What is your main mode of transportation along the Parkway?







Question 5: What words would you use to describe the current state of the Parkway?



Question 6: What is your priority for providing non-motorized safety improvements for crossing the Parkway?











Question 9: What is your priority for reducing access points along the Parkway?









Question 12: What words would you use to describe what you want the Parkway to look like in the future?

