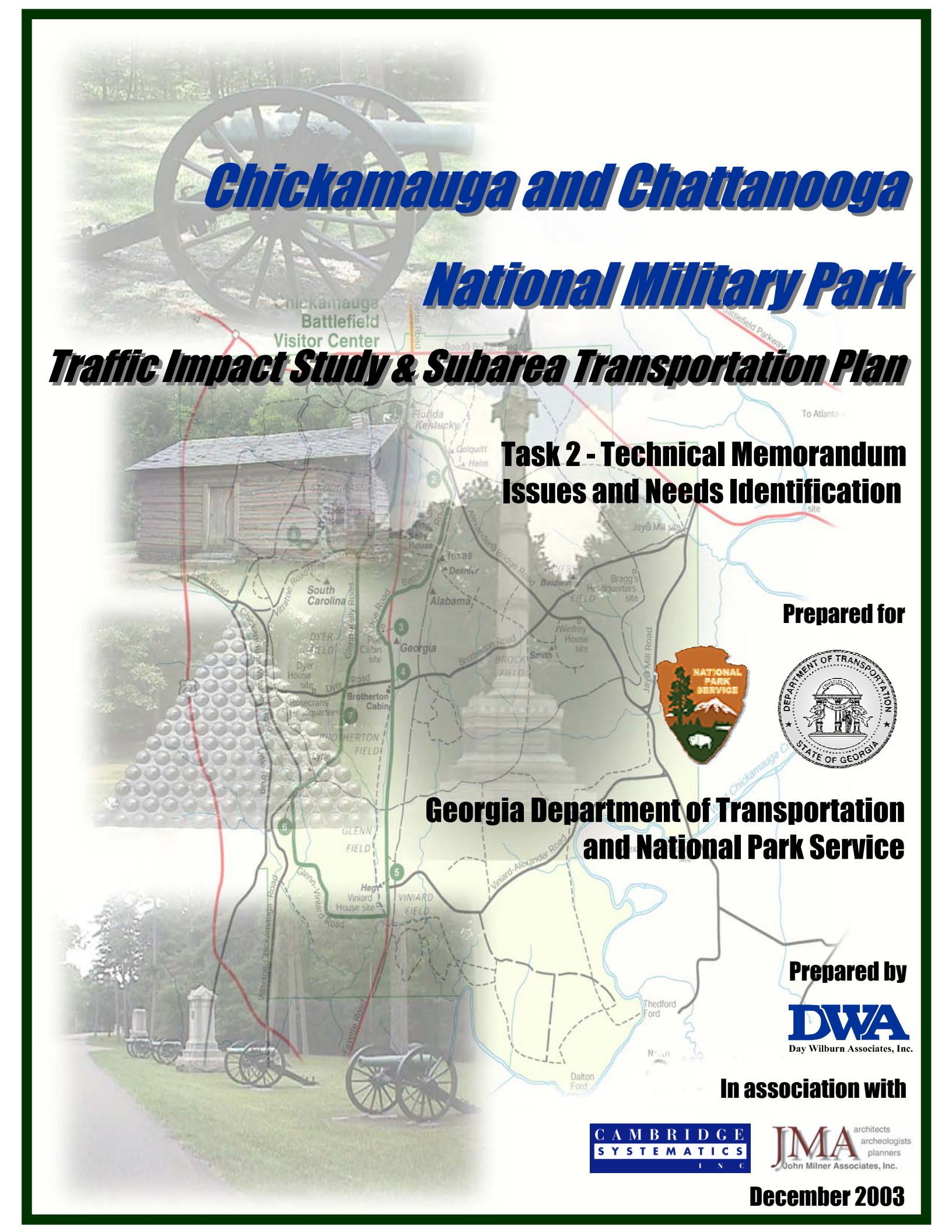


# Chickamauga and Chattanooga National Military Park

## Traffic Impact Study & Subarea Transportation Plan

### Task 2 - Technical Memorandum
### Issues and Needs Identification

**Prepared for**

**Georgia Department of Transportation**
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# 1 Introduction

The Task 2 Technical Memorandum is the second report for the Chickamauga and Chattanooga National Military Park (CCNMP) Traffic Impact Study and Subarea Transportation Plan study. The primary focus of this memorandum is to present the findings from the transportation evaluation for both study areas and establish the framework for Task 5, developing the recommended program of alternatives. The Task 1 memorandum, submitted in September 2003, presented the study processes, goals and objectives, the data collection effort, and a preliminary review of travel patterns and cultural and natural resource existing conditions.

During the Task 2 phase, issues and needs were identified for the Traffic Impact Study and Subarea Transportation Plan study areas. This memorandum summarizes the findings for both study areas, covering both qualitative and quantitative issues and needs as well as cultural and natural resource impacts. The appendices include additional technical documentation regarding the model refinement, public outreach, and cultural and historic evaluation methodology.

# 2 Traffic Impact Study Area

## Introduction

During Task 1, two goals were developed for the Traffic Impact Study:

- Ensure that the transportation system meets the mobility needs of the community and region; and
- Increase the attraction of the US 27 relocation for commuters (motorists not destined to the Park).

The activities conducted in Task 2 have focused on evaluating the transportation system in light of the study's goals to identify both current and future issues, needs and deficiencies in the critical travel corridors within the Traffic Impact Study area. Needs have been identified through a qualitative and quantitative assessment. The primary qualitative tools were public involvement activities, including coordination with the Project Coordinating Committee (PCC), the Stakeholder Participation Panel (SPP), a public information open house, engagement with environmental justice communities and a questionnaire. The primary quantitative tool was the Chattanooga Metropolitan Planning Organization's (MPO) MinUTP travel demand model, which was refined for this study. Additional quantitative tools included geographic information system (GIS) analyses. The evaluation included a cultural assessment of the gateways to the Chickamauga Battlefield Unit of the CCNMP (the Park).

## Public Input

Critical to identifying key issues, deficiencies, and needs within the Traffic Impact Study area was engagement and consultation with interested parties. The key findings identified though meeting with the PCC, SPP, and the general public are summarized here.

Stakeholder Workshop

On September 29, 2003, a workshop was conducted in Fort Oglethorpe with the PCC and SPP to identify major issues in the Traffic Impact and Subarea Transportation Plan study areas. Separate breakout sessions for the Traffic Impact and Subarea Transportation Plan study areas were conducted by the study team. All in attendance participated in both sessions. The purpose of the workshop was to not only identify needs and issues, but also to suggest desired outcomes and possible measurement tools with which to evaluate outcome achievement. Three major issue areas emerged: traffic operations, safety and accessibility, and economic development and growth. Table 2.1 summarizes the problem/issue statements, desired outcomes, and measures by category.

**Table 2.1 Stakeholder Participation Panel Workshop (September 29, 2003)
Traffic Impact Study: Issues, Outcomes and Evaluation Measures**

| **Traffic Operations**<br>**Problem/Issue Statement** | **Desired outcome(s)** | **Measures** |
|---|---|---|
| • Difficult to access Fort Oglethorpe from US 27 relocation | • Increase business in downtown Ft. Oglethorpe<br>• Reduce traffic in Park<br>• Connect Park, Ft. Oglethorpe and downtown | • None identified |
| • Provide eastern bypass/improve existing north-south roads and connections | • Improve north-south movement east of park | • None identified |
| **Safety & Accessibility**<br>**Problem/Issue Statement** | **Desired outcome(s)** | **Measures** |
| • Safe access to US27 bypass between City of Chickamauga and McFarland Gap (Osburn, Wilder) | • Greater use of bypass | • Traffic counts |
| • Access/safety at US27/McFarland Gap intersection | • Fewer accidents<br>• Quicker speeds | • Accident rates<br>• Travel speeds |
| • Access/safety connection to bypass at McFarland Gap | • Signal or second ramp connection between 2 roadways | • Accident data<br>• Signal warrant study<br>• Detailed traffic counts |
| **Economic Development and Growth**<br>**Problem/Issue Statement** | **Desired outcome(s)** | **Measures** |
| • Decreased travel through downtown Fort Oglethorpe due to relocation of US27 (economic development) | • Increase travel through downtown Ft. Oglethorpe (increased economic vitality)<br>• Extend beautification north of SR 2 intersection to provide gateway<br>• Have traffic go through downtown and then divert to US72 via McFarland Gap Road<br>• Business patronage | • Tax revenue<br>• Vacancies<br>• Unemployment |

**Table 2.1 Stakeholder Participation Panel Workshop (September 29, 2003) Traffic Impact Study: Issues, Outcomes and Evaluation Measures, cont.**

| Economic Development and Growth<br>Problem/Issue Statement | Desired outcome(s) | Measures |
|---|---|---|
| • How to increase use of businesses in business district | • Better understanding or greater recognition of historic district | • Improved signage/interpretation |
| • Growth patterns | • Help revitalize historic and business districts<br>• Beautification/gateway | • Utilize other sources (reg. wastewater study) – 5, 10, 20 year projections for Catoosa, Dade, and Walker Counties (Arcadis) |
| • Not getting enough attention on North Georgia road needs | • Greater representation on MPO/Committees | • Number of members<br>• Percent of members<br>• Allocation or revenue |
| • Economic impacts of bypass on Fort Oglethorpe business district. Most are locally owned businesses. | • More pleasant environment through business district<br>• Traffic through Fort Oglethorpe but not through Park | • Trips through Park<br>• 18,000+ trips through business district<br>• Better signage/landscaping<br>• Application for enhancement grant |
| • Business wanted in City of Chickamauga, which was significant in battle | • "Gettysburg" of the South<br>• Visitors attracted to town<br>• RR track connection Chickamauga – Park<br>• Dual mode vehicle non motorized path tie in Chattanooga<br>• Reduced auto traffic<br>• Regional auto tour with audio | • None identified |
| • Potential positive economic impacts of bypass (on US 27 in Chickamauga) | • Positive economic impacts without negative impacts (balance between Ft. Oglethorpe and Chickamauga; local vs. corporate) | • Taxable property value<br>• New jobs |

General Public and Environmental Justice Concerns

The tools for identifying study area issues and concerns included a public open house meeting, a questionnaire, and a project website. The questionnaire was designed to obtain public input regarding current transportation issues and desired future conditions in and around the Chickamauga Battlefield Unit of the CCNMP. The questionnaire was distributed to the general

public at the July 14, 2003 public open house in Fort Oglethorpe and was posted on the Georgia Department of Transportation (GDOT) website. Questionnaires were distributed to Stakeholder Participation Panel and Project Coordinating Committee members on July 14, 2003 and mailed to Environmental Justice community members. Fifty-two completed questionnaires were received through December 3, 2003. Out of 52 questionnaires received, ten (19 percent) were completed by SPP members, ten (19 percent) were received from the Environmental Justice community, and 32 (62 percent) were received from the general public.

The first group of survey questions asked respondents about US 27 relocation. The input received about the relocation was generally favorable. Seventy-nine percent of respondents (41 of 52) said they used the relocation, and 60 percent (31 of 52) said the relocation saved them time and that access to the relocation was convenient. Of the 23 percent who indicated that they do not use the relocated US 27, the primary reason was that it was not convenient due to where they live, work or recreate. One respondent said they travel through the Park on LaFayette Road because it is quicker while another stated that they enjoy the drive through the Park. Problem areas cited on the relocated US 27 were primarily access and safety issues. Respondents indicated that it is difficult to enter and exit US 27 at Wilder Road, Osburn Road, and McFarland Gap Road.

Two sections on the questionnaire consisted of open-ended questions to solicit input on current transportation issues and future desired conditions for the study area. Questions were asked in such manner to identify potential issues for differing transportation modes (motorists, cyclists and pedestrians) separately. Motorist concerns within the Traffic Impact Study area were related to traffic operations and access. Mis-timed traffic signals on Battlefield Parkway (SR 2) at US 27 were cited by three respondents. Access limitations on the relocated US 27 were cited by three respondents. No cyclist or pedestrian concerns were expressed in the Traffic Impact Study area.

Questions regarding future conditions of the transportation system around and into the Park elicited a number of comments about access. One respondent commented that the relocated US 27 should be tied into Chattanooga better. Other comments were related to tying the Park to the gateways outside the Park, such as encouraging the use of historic areas in Fort Oglethorpe and improving aesthetics and appeal to visitors to attract more tourism in Fort Oglethorpe and other areas.

Fifty-four percent (28) of respondents made comments on what changes to the transportation services could benefit the study area outside of the Park. Most comments regarded system design/facilities/maintenance, but comments about wayfinding, access, urban design and amenities were also expressed. Five respondents said improving the transportation network and commuter routes outside the Park would be beneficial. Three expressed a need to improve signage and wayfinding around the Park. Four respondents expressed the need to improve the gateways to the Park through streetscaping and beautification. Two comments reflected the need to tie historic resources inside and outside the Park together as well as providing enhanced visitor amenities outside the Park.

Forty-four percent (23) of respondents made general comments about transportation needs in and around the Park. Most comments within the Traffic Impact Study area were traffic operations and wayfinding issues, but there were also comments regarding historic resources and visitor amenities. Detailed results from the entire survey and a copy of the questionnaire are included in Appendix A.

The issues and needs identified through the public outreach efforts will be considered in the development the recommended program of alternatives during Task 5.

**Transportation Analyses**

The analyses performed to identify current and future issues and needs in the Traffic Impact Study area included:

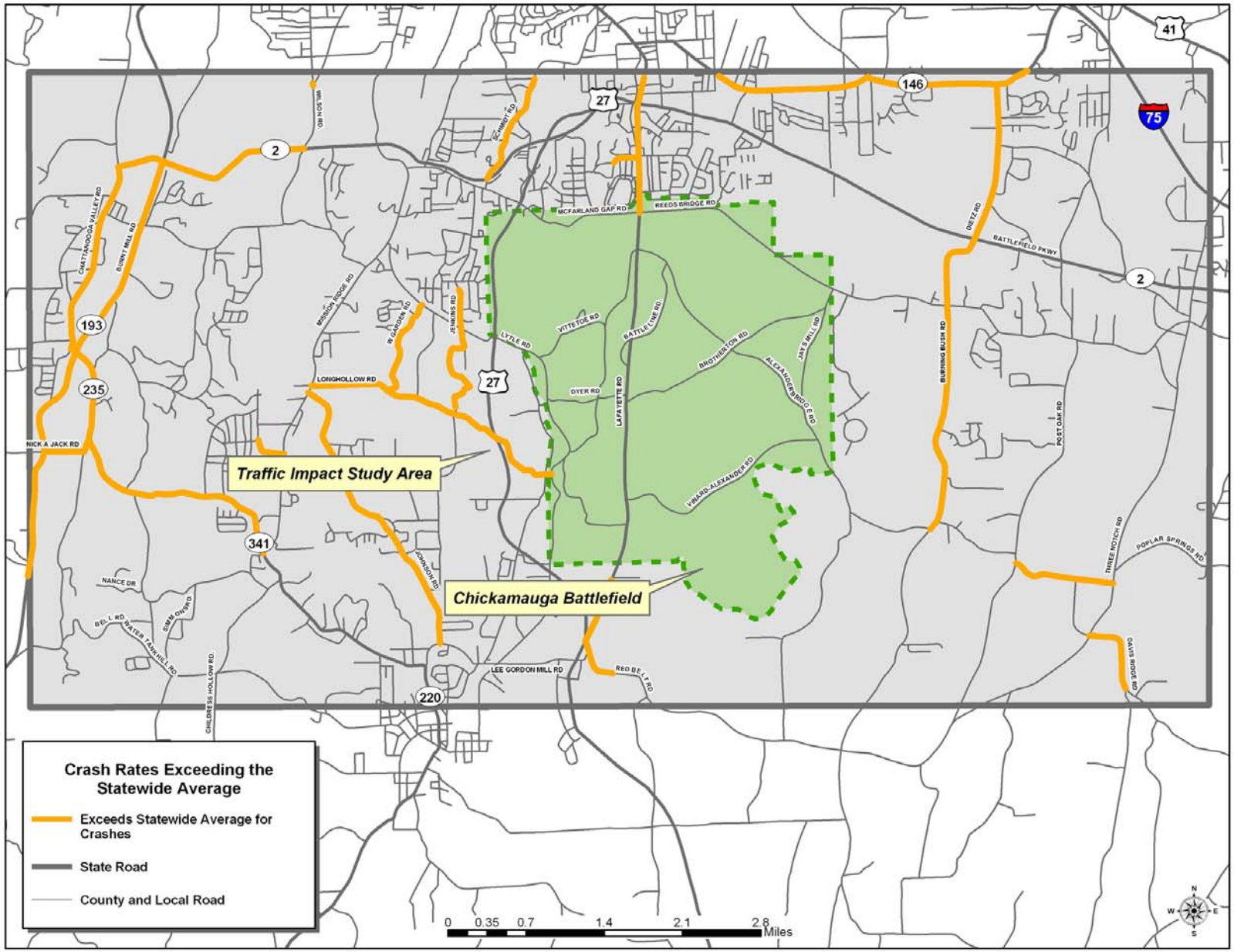
- A safety analysis of crash data
- Evaluation of traffic usage on the existing system to identify current capacity needs
- Travel demand model refinement and forecast of traffic conditions to identify future needs
- A travel time evaluation

Roadway Safety Issues

A safety evaluation of major roadways in the Traffic Impact Study area was conducted. 2001 crash data from GDOT was reviewed to help identify locations that may require closer inspection related to traffic safety (on all major roads except the relocated US 27/SR 1). The relocated US 27 did not open until late 2001, so a special query of 2002 crash data for the US 27 relocation was also reviewed. Twenty-four crashes occurred on the US 27 relocation during 2002.[1] Eight-hundred thirteen crashes and one fatal crash occurred on the major roadways (excluding the US 27 relocation) in the study area during 2001. Crashes were examined using GIS. Crash rates per 100 million vehicle miles traveled were calculated to compare crash rates in the Traffic Impact Study area to statewide crash rates. Major roads that appear to need further investigation are SR 193, Burnt Mill Road, SR 341, SR 235, SR 2, W. Gardon Road, Jenkins Road, N. Longhollow Road, Vittetoe Road, Johnson Road, LaFayette Road, McFarland Gap Road, and McFarland Avenue in Walker County and Dietz Road, Burning Bush Road, LaFayette Road, Poplar Springs Road, SR 146 and SR 2 in Catoosa County. Figure 2.1 identifies crash locations with crash rates greater than the statewide average and figure 2.2 identifies the locations of head-on crashes, crashes with other vehicles, and crashes not involving other vehicles.

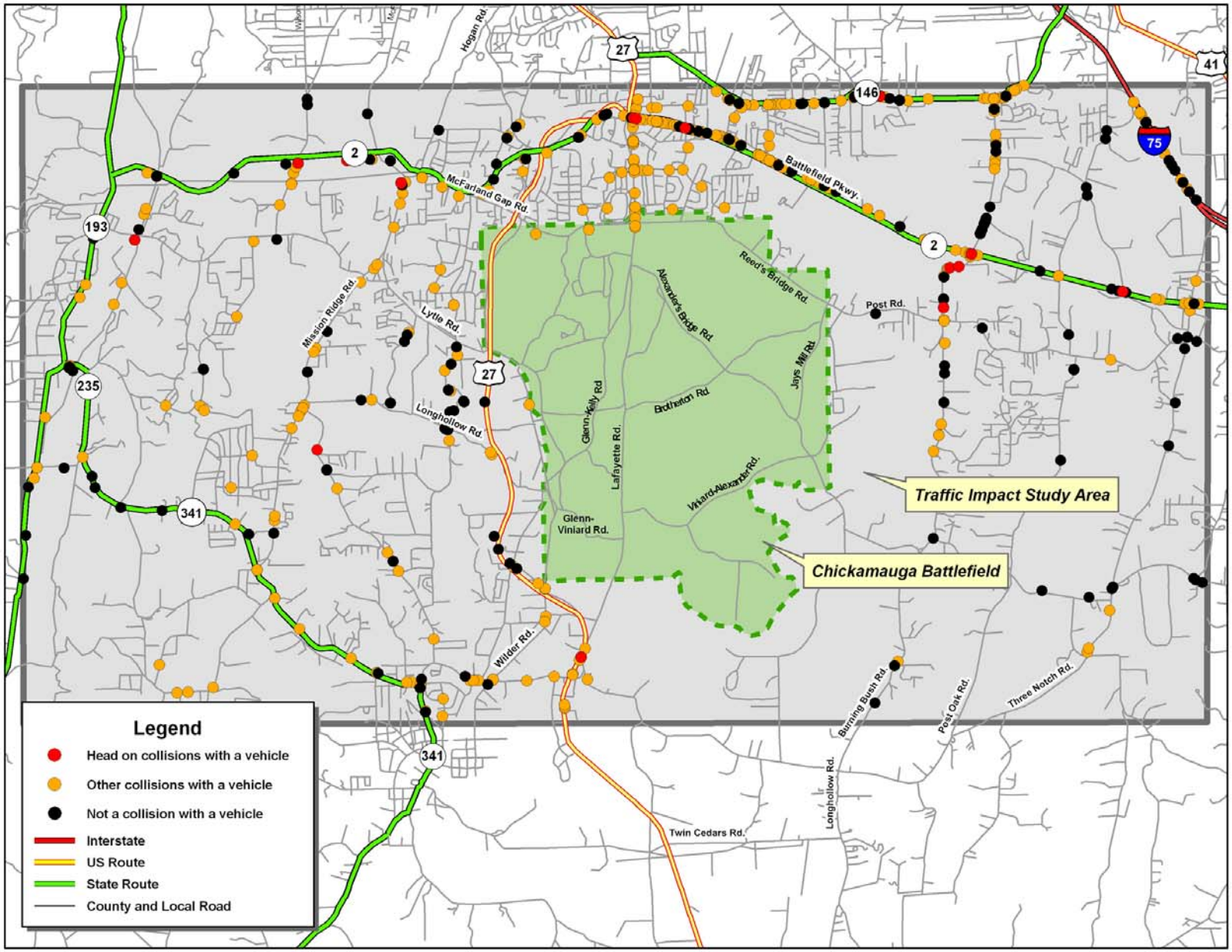
[1] Note: Subject to change; compilation of the 2002 crash data will not be complete until mid-December 2003.

**Figure 2.1 Traffic Impact Study Area Crash Rates**




Source: Georgia Department of Transportation 2001 Crash data

**Figure 2.2 Traffic Impact Study Area Crash Locations**




Source: Georgia Department of Transportation 2001 Crash data

Roadway Demand

*Existing Capacity Needs*

Existing capacity needs in the Traffic Impact Study area were examined by performing a planning level of service (LOS) analysis and reviewing the refined 2003 base year Chattanooga MPO travel demand model. To perform the planning level of service analysis, existing daily traffic counts, existing traffic controls, speed limits and general roadway characteristics were considered. Figure 2.3 shows the transportation system base map. Generally throughout the study area, the terrain is hilly and many of the county roads are narrow, paved, two-lane facilities with limited shoulders. As development increases within the study area, additional traffic on some county roads could require design upgrades. State Route 2/Battlefield Parkway and US 27/SR 1 are divided, four-lane highways that have been flattened and straightened somewhat to mitigate limited site distances and grade changes. Table 2.2 summarizes LOS on major roadways within the Traffic Impact Study area. Only SR 2 west of Dietz Road is showing a LOS below LOS C.

**Table 2.2 Traffic Impact Study Area Daily Level of Service**

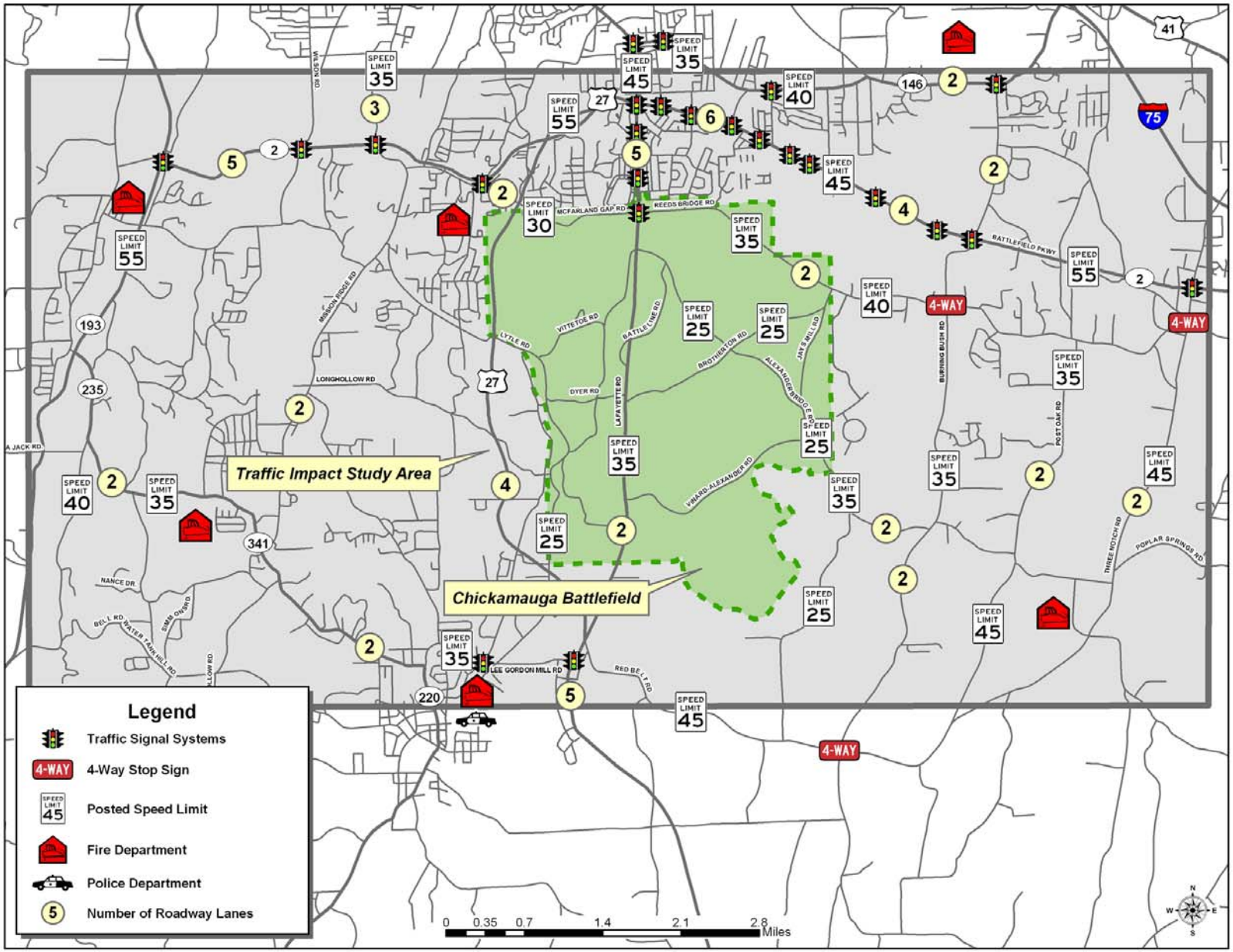
| Major Roadway | 2002 Two-way Traffic Volume | Level of Service* |
|---|---|---|
| US 27 south of LaFayette Rd. merge, south of Park | 14,500 | B |
| US 27 north of Longhollow Road | 17,500** | B |
| US 27 north of SR 146 | 22,780 | B |
| SR 2 east of McFarland Road | 13,500 | B |
| SR 2 west of US 27 interchange | 23,800 | B |
| SR 2 west of Dietz Road | 29,400 | D |
| SR 341 east of Mission Road | 5,080 | A |
| SR 146 west of Fant Drive | 9,800 | B |
| LaFayette Road near Forrest Rd. | 11,200 | C |

Source: GDOT
*Note: Planning Level of Service derived from Table 5, Generalized Annual Average Daily Volumes, GRTA Technical Guidelines.
** May 2003 Traffic Count

The refined Chattanooga MPO base model for the year 2003 was also examined to help identify locations where the traffic volumes exceed roadway capacity. By dividing the daily roadway volume by the roadway capacity, a volume-to-capacity (V/C) ratio is calculated. Any V/C ratio exceeding 1.0 indicates there is more traffic on the roadway than it theoretically can contain, and congested conditions likely exist. The major roadways in the study area that appear to have congested conditions are primarily north-south roads leading into Chattanooga, including LaFayette Road/Chickamauga Avenue, McFarland Avenue from McFarland Gap Road, Page

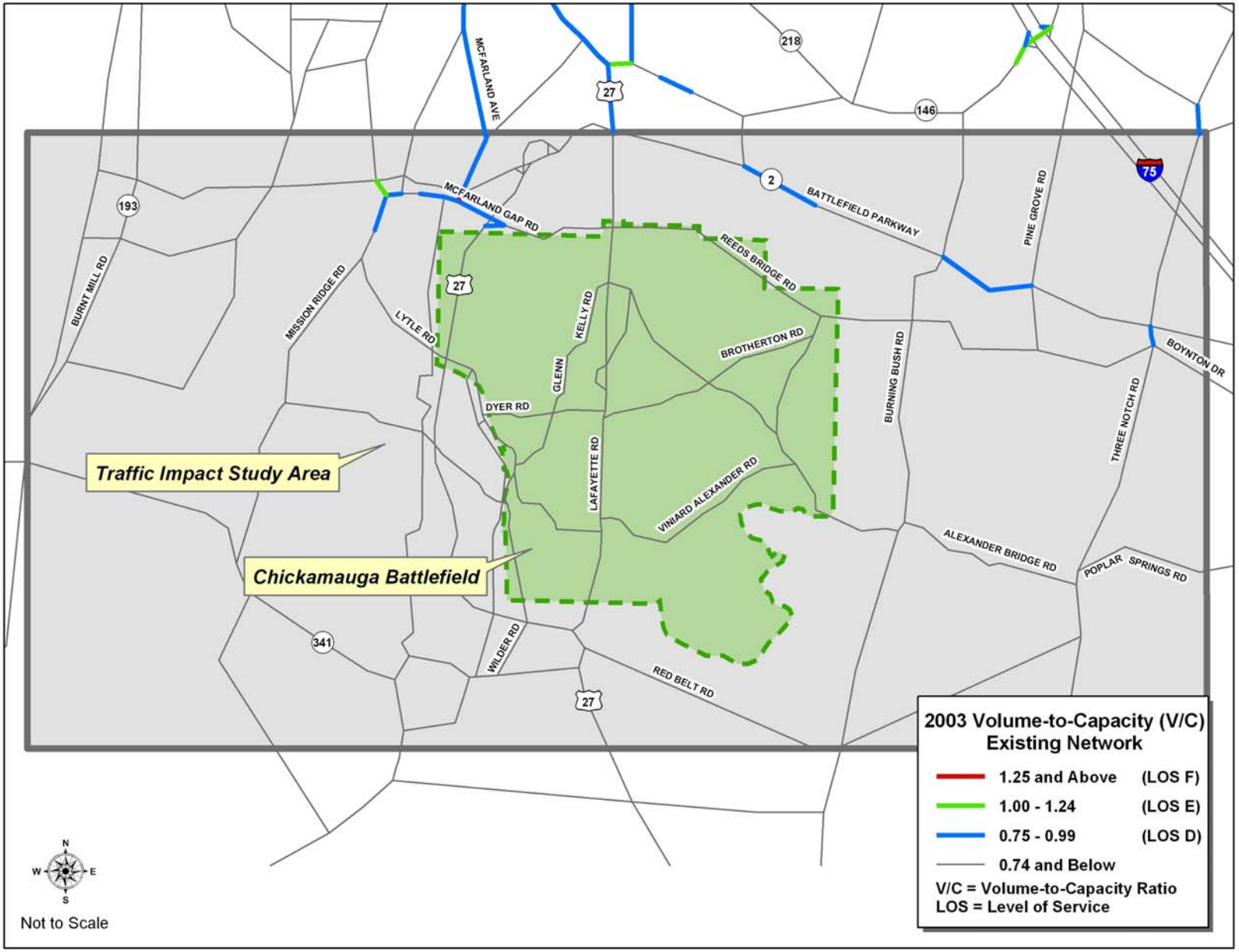
Road from Lakeview Drive to US 41 in Tennessee, and Schmidt Road from McFarland Gap Road to Battlefield Parkway. The primary east-west route where congestion is indicated is Battlefield Parkway from Dietz Road to Pine Grove Road. Figure 2.4 shows the locations of the congested roadways.

**Figure 2.3 Traffic Impact Study Area Transportation System**




Source: Field review

**Figure 2.4 2003 Base Model Network**




Source: Cambridge Systematics, Refined Chattanooga MinUTP Model

*Future Volumes*

The Chattanooga MinUTP travel demand model required adjustments and updating to better reflect the 2003 travel patterns in and around the Chickamauga Battlefield Unit of the CCNMP. A detailed discussion of the model refinement process is included in Appendix B. Two future scenarios were considered, a 2025 network with the short-range Existing plus Committed projects (E+C) and a 2025 network with all the Chattanooga 2025 Long Range Transportation Plan (LRTP) projects. Table 2.3 summarizes the forecasted 2025 volumes on major roads within the study area. Traffic counts from 2003 are included for comparison. A review of these two forecasts indicates moderate differences between the 2025 E+C and 2025 LRTP scenarios.

**Table 2.3 Traffic Impact Study Area Daily Traffic Volume Summary**

| Major Roadway | Two-Way Traffic Volume - Vehicles Per Day (VPD) | | |
|---|---|---|---|
| | 2003 Counts | 2025 Socioeconomic Data with E+C Network | 2025 Long Range Transportation Plan |
| US 27 Relocation | 17,500 | 21,600 | 22,500 |
| McFarland Gap Rd. | 3,400 | 6,900 | 7,300 |
| Reeds Bridge Road | 4,100 | 10,000 | 10,500 |
| LaFayette Road (North of Park) | 7,600 | 9,900 | 9,600 |
| LaFayette Road (South of Park) | 4,400 | 5,000 | 4,400 |

Source: GDOT, Chattanooga MPO MinUTP Model, Cambridge Systematics

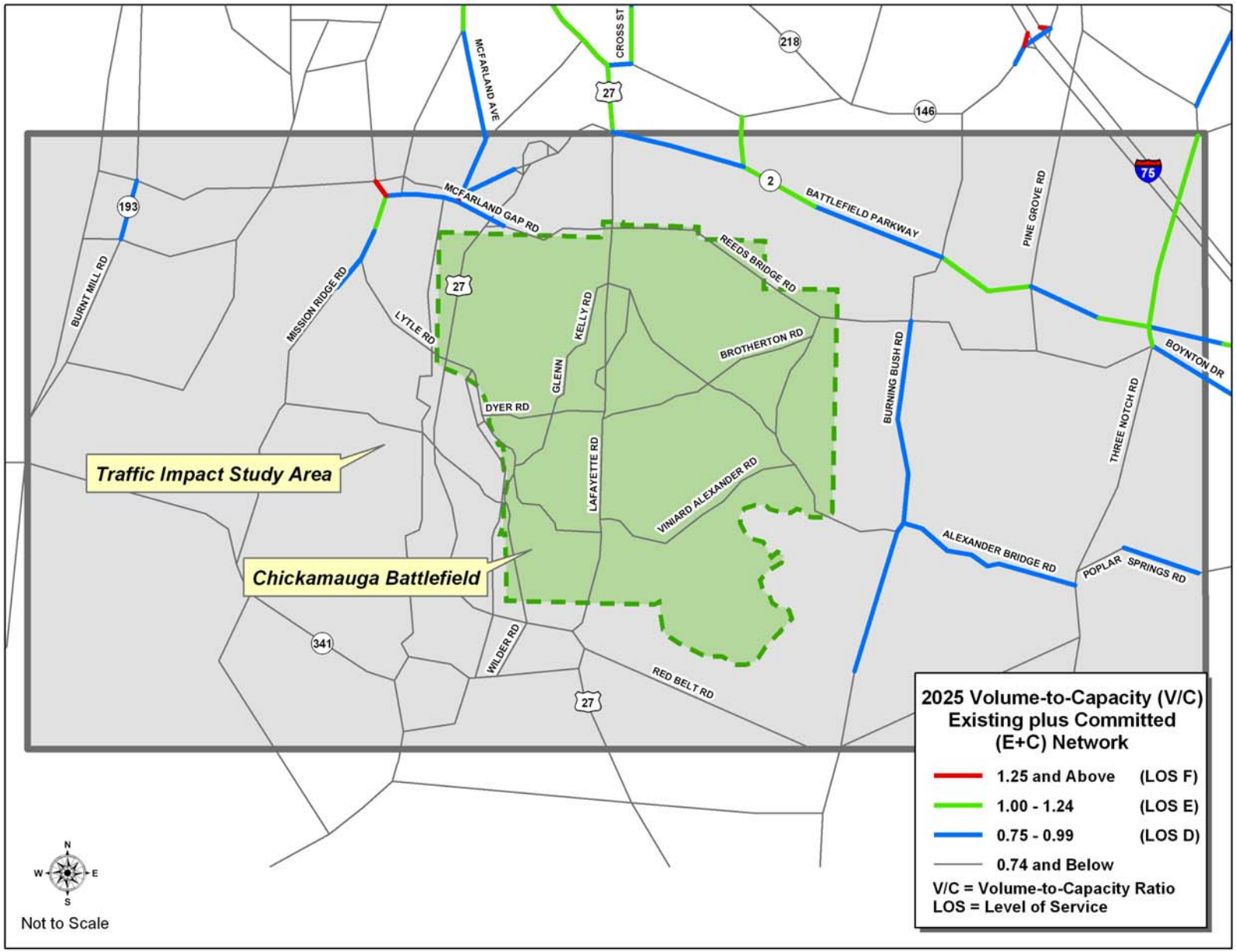
*Future (2025) Travel Demand Deficiencies*

Based on future V/C ratios within the refined 2025 LRTP model, the following roadways demonstrate a potential need for transportation improvements or alternatives in the Traffic Impact Study area:

- LaFayette Road from Battlefield Parkway north to 37th Avenue (changes name to Chickamauga Avenue and then Rossville Boulevard north of McFarland Gap Road)
- Battlefield Parkway from Cedar Lane to east of I-75
- Schmidt Rd./Dewberry Rd./Hogan Rd. from McFarland Gap Rd. to Chickamauga Ave.
- Fant Drive from Battlefield Parkway to Cloud Springs Road
- Three Notch Road from Battlefield Parkway to US 41
- Page/McBrien Road from Lakeview Road to US 41 in Tennessee

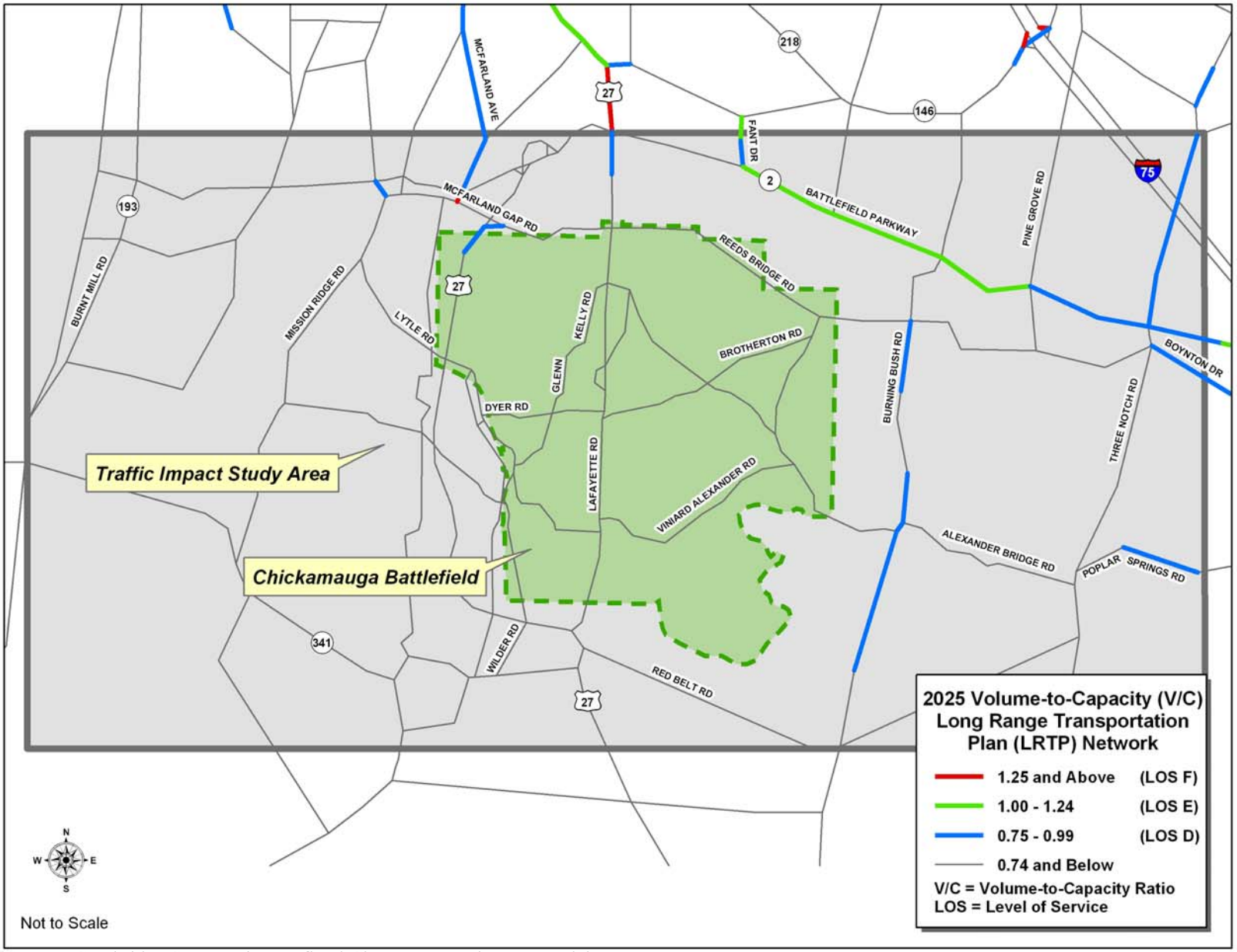
Figures 2.5 and 2.6 show the forecasted V/C ratios from the 2025 E+C and the 2025 LRTP model runs. Model maps showing forecasted network volumes may be found in Appendix B.

**Figure 2.5 E+C Network with 2025 Socioeconomic Data Volume to Capacity Ratios**




Source: Cambridge Systematics, Refined Chattanooga MinUTP Model

**Figure 2.6 2025 Long Range Transportation Plan Network Volume to Capacity Ratios**




Source: Cambridge Systematics, Refined Chattanooga MinUTP Model

Travel Time

Travel times around and through the Chickamauga Battlefield Park from south of the Battlefield to north of the Battlefield were examined through field review and by using the refined Chattanooga model travel demand model.

Three scenarios were tested in the model to compare trips from south of the Chickamauga Battlefield Park at the junction of LaFayette Road and the rerouted US 27 to locations northwest, north, and northeast of the Chickamauga Battlefield. Table 2.4 shows the travel time comparisons between 2003 and 2025 for the three routes, and the model output maps are included in Appendix C. For the trip to the northwest, the US 27 relocation was selected; for the trip to the north, LaFayette Road through the Park was selected; and for the trip to the northeast, LaFayette Road and Brotherton Road were the quickest paths. This indicates that at the decision point south of the Battlefield Park at LaFayette Road and the relocated US 27, depending on one's destination, the quickest route could be through the Park instead of around the Park.

**Table 2.4 Congested Travel Times from US 27/LaFayette Road Junction**

| Direction from US 27/LaFayette Rd. junction to the: | Destination | "Quickest" Route | Est. 2003 Congested Travel Time | Est. 2025 LRTP Congested Travel Time |
|---|---|---|---|---|
| Northwest | McFarland Gap Road/Battlefield Parkway Intersection | US 27 | 7.8 min. | 7.8 min. |
| North | Downtown Ft. Oglethorpe | LaFayette Road | 6.9 min. | 6.91 min. |
| Northeast | Battlefield Parkway/I-75 Interchange | LaFayette Rd./ Brotherton Rd. | 15.12 min. | 15.71 min. |

Source: Cambridge Systematics, Chattanooga MPO MinUTP Model

A comparison of travel times between LaFayette Road and US 27 relocation from south of the Park (junction of US 27 relocation and LaFayette Road) to north of the Park (junction of US 27 relocation, SR 2 and LaFayette Road) was conducted in the field and also evaluated in the model. For current conditions at either the AM or PM peak hour, traveling around the Chickamauga Battlefield on the US 27 relocation took an average of 6.6 minutes at an average travel speed of 52 miles per hour (mph). Traveling through the Chickamauga Battlefield on LaFayette Road took an average of 8.2 minutes at an average travel speed of 34 mph. Though the perception is that one could travel through the Park more quickly, in reality using the US 27 relocation saves time.

When tested in the model, the modeled travel speed was 41 mph on the US 27 relocation and 31 mph on LaFayette Road. The travel time difference between the routes is minimal in both the existing 2003 base model and the future 2025 LRTP model. In the 2003 base model, the travel

time from south of the Park to north of the Park using US 27 was 6.56 minutes versus 6.59 minutes on LaFayette Road. In the 2025 model, it is projected to take 6.65 minutes to travel on US 27 and 6.59 minutes on LaFayette Road for the same trip.

**Cultural and Natural Resource Evaluation**

Within the Traffic Impact Study area, it is important to evaluate the gateway linkages leading into the Battlefield Park from a cultural perspective. This reflects the need to find ways to interpret the cultural connections between the Battlefield Unit of the CCNMP and its neighboring communities. In this section, the gateway corridors are described within the historic, cultural, and natural resource context.

Primary Gateway Corridors

*LaFayette Road*

While the traffic volume along the LaFayette Road corridor has been reduced since the rerouting of US 27, the road continues to serve as the primary northern and southern gateways into the Park. The northern gateway, between Battlefield Parkway and the Park boundary, is characterized by both remnants of Fort Oglethorpe, such as the old Post Gymnasium, Stable, and Commissary, and several churches which date to the early part of the 20th century. Mid-20th century commercial structures, such as the Sears Shoe Store, John's Pawn Shop, and North Georgia Printing Company, reflect the commercialization of this corridor after the post closed in 1947 following the end of World War II.[2] Today, this five-lane corridor is characterized by this commercial development, as well as late 20th century suburban shopping buildings, parking lots, traffic signals, and fast food restaurants near the Battlefield Parkway intersection. Local residents and small business owners along this gateway corridor have noted the loss of economic activity since the rerouting of US 27.

There are several historic resources along and adjacent to the northern gateway. In 1890, the proposed Chickamauga Battlefield Park boundary included much of present day Fort Oglethorpe. Although the Park Commission did not acquire this land, it was able to acquire the Old LaFayette Road corridor north of the present Park boundary and erected markers, monuments, and tablets along its right of way. These offer opportunities for interpretation and enhancement of the visitor experience.

In 1979, Fort Oglethorpe was designated a National Register Historic District. Since that time, Catoosa County and the City of Fort Oglethorpe have adopted a historic preservation ordinance to protect the character of the historic post area. In 1991, Fort Oglethorpe's historic preservation program received Certified Local Government Status. Despite these accomplishments, the district still risks loss of integrity and encroachment of inappropriate development. According to the Catoosa County Joint Comprehensive Plan, Fort Oglethorpe's preservation program lacks

[2] Georgia Department of Natural Resources, Historic Preservation Division, "Georgia Historic Resources, Catoosa County Survey." Conducted by Tracy Dean (Atlanta: Georgia Department of Natural Resources, Historic Preservation Division 2002).

district-specific design guidelines and a preservation master plan for the district and related resources, and the community acceptance of the city's preservation ordinance and design review process is currently at undesirable levels.[3] The potential economic benefits of heritage tourism for Fort Oglethorpe have been recognized for decades. Opportunities exist to take advantage of the substantial tourist traffic that passes through the Park.

The southern LaFayette Road gateway corridor extends from the Park boundary to the intersection of Lee Gordon Mill Road. South of the intersection with the US 27 relocation, this five-lane corridor is characterized by a mix of older residential and commercial strip development. The old section of US 27 leading to the Park boundary is a two-lane road with wide shoulders, characterized by a mix of roadside commercial, residential, and agricultural land uses.

Historic resources located adjacent to this corridor include the site of Lee and Gordon's Mill, which served as the headquarters of the Confederate Army of Tennessee during the battle. Although the wartime mill burned in 1867, a new mill was erected on the same site shortly after. It is this structure which stands today and is listed on the National Register of Historic Places. Several monuments, markers, and tablets erected during the Commemorative Period also stand along Lee Gordon Mill Road on the elevated ground east of the mill. These resources, as well as the rural character surrounding the mill, provide additional opportunities for tourism, interpretation, and enhancement of the visitor experience. The National Park Service (NPS) has expressed desires for this area to retain is rural appearance.[4]

LaFayette Road north and south of the Park boundary has been designated as a recommended bike route in addition to the bike route inside the Park's boundaries.[5] These bicycle transportation facility recommendations provide opportunities for increased recreation and tourism within the larger region.

*McFarland Gap Road*

McFarland Gap Road is considered a primary gateway corridor into the Park from the west. While the corridor segment within the Park is generally forested, the corridor outside the boundary is lined with a mix of residential and institutional land uses, and small-scale commercial development. It also provides views and vehicular access via the south Gate to Fort Oglethorpe National Historic District. Further to the west, McFarland Gap played a significant role in the battle as a major route of retreat for Union troops following the battle. The construction of SR 2 has resulted in dramatic alterations to the terrain in this area. The NPS has

[3] The Catoosa County Joint Plan Steering Committee with assistance from the Coosa Valley Regional Development Center, *Joint Comprehensive Plan 2020, Catoosa County, Georgia, Including the Cities of Fort Oglethorpe and Ringgold* (Catoosa County, Georgia: Revised April 2002), HR-9.

[4] Chattanooga-Hamilton County Regional Planning Agency & Partners. *Chattanooga Area Civil War Sites Assessment* (1997), 39-40.

[5] Hawkins Partners, Inc., "Chattanooga Urban Area Bicycles Facilities Master Plan." Prepared for the Chattanooga Urban Area Metropolitan Planning Organization and the Chattanooga-Hamilton County Regional Planning Agency in cooperation with the U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration and the Tennessee and Georgia Department of Transportation. (April 2002), Figure 3.5.

expressed interest in placing interpretive signage along McFarland Gap Road either immediately north or south of SR 2.

*Reed's Bridge Road*

A small segment of this road passes outside the Park boundary and contains some roadside residential development. This road is considered a primary gateway corridor into the Park from the east. Beyond the Park boundary, the road continues east to Reed's Bridge over West Chickamauga Creek. Although the wartime wooden bridge has been replaced by a modern structure, the bridge site is significant to the battle as a strategic crossing point. The NPS has expressed interest in acquiring this bridge site (either through fee or acquisition of easements) for interpretive purposes. This site is also proposed to be included within the greenway corridor along West Chickamauga Creek, which would expand its interpretive opportunities.

Outside the Park boundary, this road is characterized by residential development along both sides, as well as by a golf course and commercial development at the Burning Bush Road intersection. Here the road is two lanes wide with narrow turf shoulders.

Secondary Gateway Corridors

*Alexander Bridge Road*

Alexander Bridge Road is considered a secondary gateway into the Park from the southeast. As a narrow, paved, unlined road, it is predominantly rural in character. However, increasing residential development along the corridor has changed this character slightly.

*US 27*

Although US 27 also serves as a gateway into the Park, it has a wide, interstate-like character. This area to the west of the Park is zoned residential and will likely see increased development pressure. A land-use overlay district plan is currently under development for this corridor by the Walker County government.

*Lytle Road*

Lytle Road is located on the west side of the Park and follows the historic Chattanooga, Rome & Columbus Railroad corridor (formerly the wartime Dry Valley Road). Most of Lytle Road lies just outside the Park boundary with only a short section inside the boundary. This road was constructed between 1870 and 1892.[6] Currently, it is a two-lane, striped, asphalt road with narrow turf shoulders that is characterized by the railroad, nearby woodlands, and rural residential and small scale agricultural land uses along its corridor.

[6] National Park Service, "Chickamauga and Chattanooga National Military Park, List of Classified Structures," Lytle Road (LCS ID no. 091656).

This road passes through Lytle Gap, which is recognized as a critical retreat route to Chattanooga for the Union Army on September 20, 1863.[7] This corridor also contains the Davis House (ca. 1896) and the Bagwell-Wall House and Store (ca. 1889). All three of these structures have been nominated to the National Register of Historic Places. They were built as part of the larger Lytle community, which was founded after the Civil War and received its name from Union Brigadier General W. H. Lytle, who was killed in battle at that location. The town originally included a train depot, homes, and stores. The depot transported troops to and from training camps associated with what is now the CCNMP, serving the troops and civilians in the surrounding area. It flourished mainly between 1898 and 1904 during the Spanish American War period.[8] Opportunities exist to promote the history of this community and interpret its role in the evolution of the park and Walker County.

Lytle Road serves as a secondary gateway corridor into the Park, providing three points of access along its western boundary. This corridor is at risk of further residential development that would impact the view shed west of the Park. The NPS has expressed interest in working with local governments and organizations to preserve the rural character of the area through scenic easements or other land use policies. The City of Chickamauga has also expressed interest in utilizing the rail corridor for transporting tourists from the Walker County Historical Museum to the Wilder Monument.

*Burning Bush Road*

Burning Bush Road serves as a secondary gateway corridor for the Park, connecting Battlefield Parkway with Reed's Bridge Road and Alexander Bridge Road. This corridor is a two-lane, paved, asphalt road with little or no shoulder. It traverses over several hills and is characterized by rural residential and agricultural land uses. It also affords views to the large tracts of farmland located to the west, between the road and the Park boundary. Several historic structures dating to the late 1800s are located along this corridor and provide opportunities for interpretation regarding the historical evolution of Catoosa County.

Because Catoosa County is expected to double its 2000 population in the next 20 years, this rural road corridor is projected to be under increasing pressure for future residential development. This development will not only have an impact on the travel patterns and traffic volume along this road, but new development will also jeopardize the integrity of the rural landscape bordering the eastern boundary of the Park. Currently, this farmland provides the only indication of the historic agricultural uses that dominated the surrounding region at the time of the battle.

[7] Chattanooga-Hamilton County Regional Planning Agency & Partners. *Chattanooga Area Civil War Sites Assessment* (1997), 46.

[8] Herschel Bryant, "Georgia Project F-17-3(16), Walker County; The Davis House and the Bagwell-Wall House and Store." Report to Joe Tanner, Commissioner, Georgia Department of Natural Resources, on eligibility of structures to the National Register. (February 6, 1979).

Surrounding Area Gateways

*West Chickamauga Creek*

While West Chickamauga Creek does not follow a major road corridor, a greenway trail has been proposed to follow this natural feature. In the *Catoosa County Joint Comprehensive Plan,* the *Final Greenway Master Plan for Catoosa County* shows a portion of West Chickamauga Creek (north of Reed's Bridge Road and west of LaFayette Road) to be designated as the, "Proposed South and West Chickamauga Creeks Trail System." However, no designation is given to the creek segment along the Park boundary, south of Reed's Bridge Road and east of LaFayette Road. According to Catoosa County government officials, this was because of private property owner opposition along the land abutting the creek south of Reed's Bridge Road.[9] This greenway master plan was developed in the late 1990s and has not been updated since.[10] Contrary to the *Greenways Master Plan*, the *2002 Chattanooga Urban Area Bicycles Facilities Master Plan* designates the entire creek corridor between Battlefield Parkway and the City of Chickamauga as a "Planned Greenway."[11]

If the South and West Chickamauga Creek Greenway is eventually developed as a recreation corridor with pedestrian paths and trails, it will be considered a secondary gateway into the Park, particularly at Alexander's Bridge. The West Chickamauga Creek corridor contains the sites of several significant historic fords, including Dalton and Thedford Fords along the Park's southeastern boundary and Byram's and Fowler's Fords, which are located outside the Park boundary between Reed's and Alexander's Bridges. The NPS has expressed interest in having these sites incorporated into the greenway with interpretive markers placed near them to explain their historical significance.[12]

*City of Chickamauga*

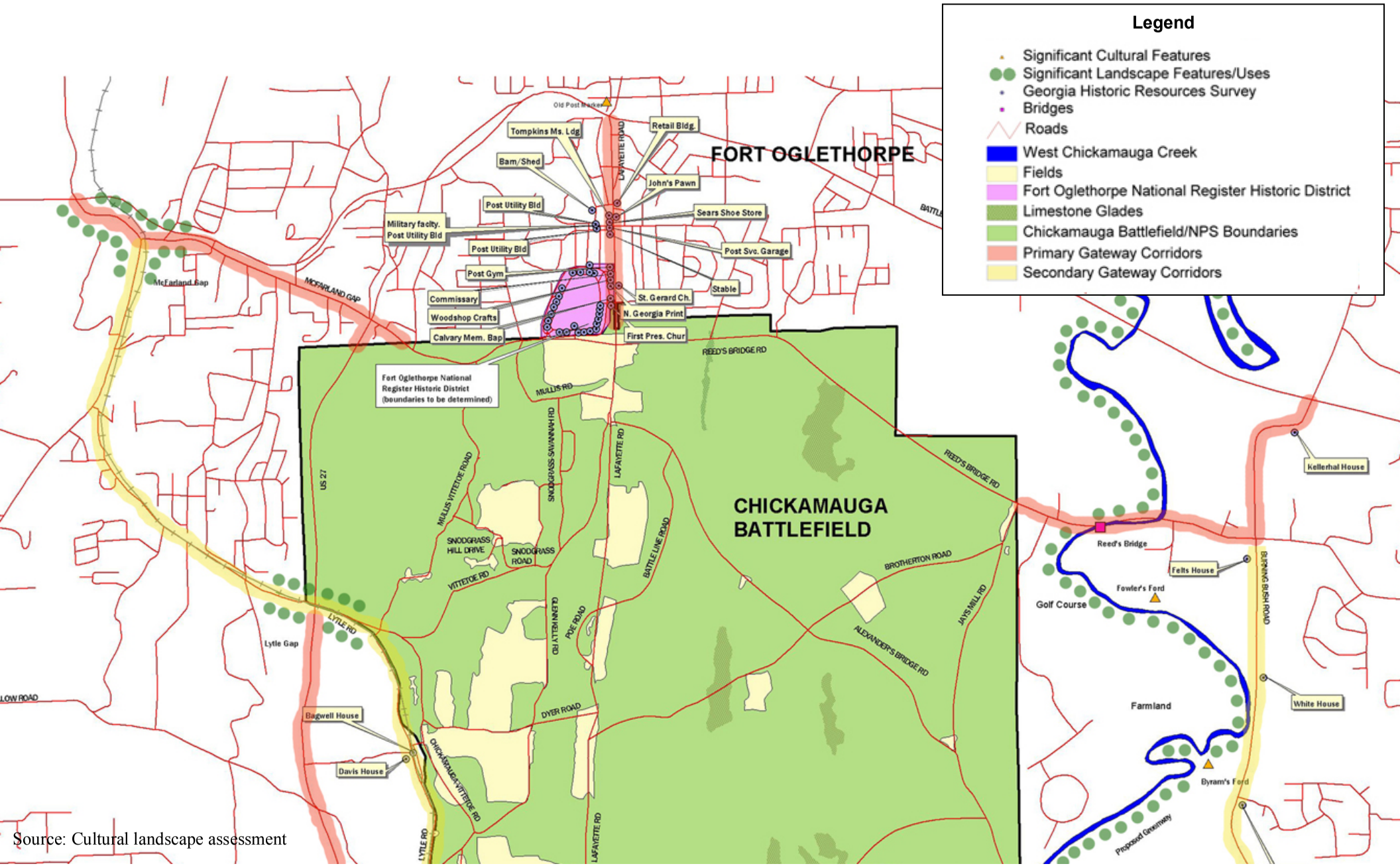
During the July and September 2003 Stakeholder Participation Panel Meetings, the City of Chickamauga expressed interest in becoming a southern gateway community for the Chickamauga Battlefield. Its stated goal is to become the "Gettysburg of the South." Recently, a marketing concept and plan were developed by the Coosa Valley Regional Development Center (RDC) and the City of Chickamauga with input from Walker County and Dade County. This marketing plan is based upon the creation of two tourism routes that would follow the historic paths of the Union and Confederate Armies on their way to the Battle of Chickamauga. Both the northern and southern routes are envisioned to converge in downtown Chickamauga.

[9] Telephone conversation with Olney Meddles, Catoosa County Courthouse, October 15, 2003.
[10] The Catoosa County Joint Plan Steering Committee with assistance from the Coosa Valley Regional Development Center, *Joint Comprehensive Plan 2020, Catoosa County, Georgia, Including the Cities of Fort Oglethorpe and Ringgold* (Catoosa County, Georgia: Revised April 2002), Appendix. D, South and West Chickamauga Creek Greenway Master Plan, 22.
[11] Hawkins Partners, Inc., (April 2002), Figure 3.5.
[12] Chattanooga-Hamilton County Regional Planning Agency & Partners. *Chattanooga Area Civil War Sites Assessment* (1997), 84.

The City of Chickamauga wishes to promote the many historic resources found there, including the Gordon Lee Mansion, listed on the National Register of Historic Places, which served as the headquarters of Union Army General William Rosecrans. Several cannons and tablets are also located here. Crawfish Springs, for which the City of Chickamauga was formerly named, is also located nearby. During the battle period, it provided the best source of fresh water for many miles. The area also served as a Union staging area and hospital depot and the site of veteran reunion activities in 1889. The Georgia Civil War Heritage Trail is planned to be expanded and include this historic community. The Walker County Historical Museum is also located in the downtown, at the site of the restored railroad depot. Many opportunities exist to promote tourism between the Park and the City of Chickamauga.

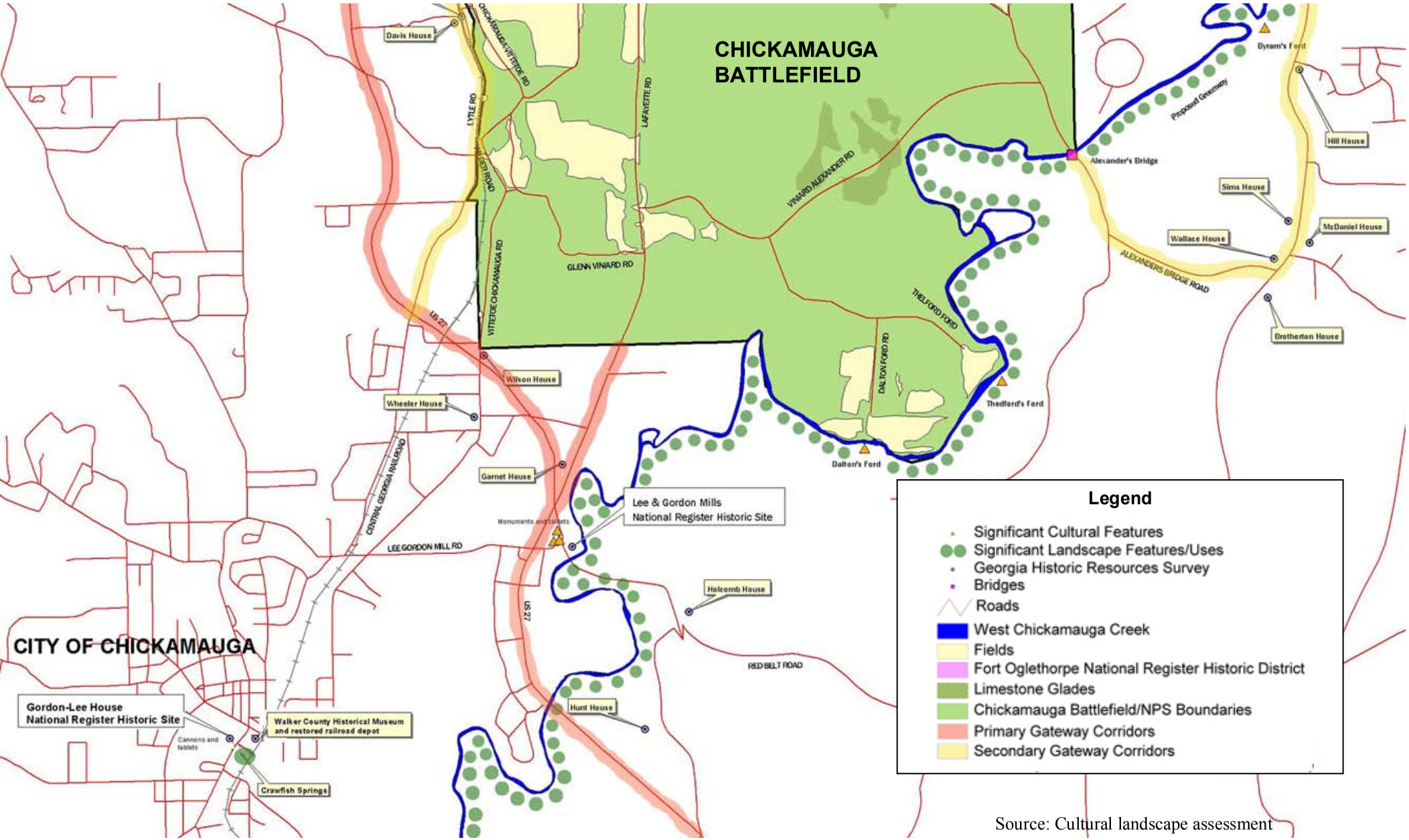
Figure 2.7 shows the gateways and important cultural features that lie within them.

**Figure 2.7a Traffic Impact Study Area Gateway Features**




Source: Cultural landscape assessment

**Figure 2.7b Traffic Impact Study Area Gateway Features**




Source: Cultural landscape assessment

# 3 Subarea Transportation Plan

## Introduction

Analyses for the Subarea Transportation Plan paralleled the efforts for the Traffic Impact Study, but particular emphasis was placed on establishing a means to evaluate the cultural and historic context of the Park's roads. Goals developed during Task 1 for the Subarea Transportation Plan study area were:

- Minimize adverse impacts of traffic and transportation usage on the Chickamauga Battlefield Unit of the Chickamauga and Chattanooga National Military Park and its resources.

- Develop feasible transportation strategies that will respond to anticipated future growth in the area and in the Park.

Current and future issues and needs in the Battlefield Unit of the CCNMP were identified both qualitatively through the public involvement process and quantitatively through the model and other transportation analyses. A thorough assessment of the cultural/historical/natural resources as they relate to the Battlefield's transportation network was also conducted.

## Public Input

Critical to identifying key issues, deficiencies, and needs within the Subarea Transportation Plan area was engagement and consultation with interested parties. As is discussed earlier for the Traffic Impact Study area, input from the PCC, SPP, and the general public is summarized here. Results from the stakeholder workshop are presented, as are the results from the public questionnaire.

### Stakeholder Workshop

All of the issues identified through the SPP workshop relate to Park versus non-Park usage of the Park's transportation network. Table 3.1 summarizes the problem/issue statements, desired outcomes, and measures that were developed for the Subarea Transportation Plan study area.

**Table 3.1 Stakeholder Participation Panel Workshop (September 29, 2003) Subarea Transportation Plan: Issues, Outcomes and Evaluation Measures**

| Problem/Issue Statement | Desired outcome(s) | Measures |
|---|---|---|
| • Want visitors to have positive experience and time to enjoy Park<br>• Too much traffic and noise | • Positive experience for visitor – safer, slower, quieter<br>• Recreation in addition to commemorative and historical<br>• Expand opportunities including outside park<br>• Preservation of space | • Slow speed<br>• Traffic mix – larger percentage of Park visitors<br>• Lower total volume<br>• Accident rate<br>• Complaints |
| • Fundamental conflict between Park visitors and through traffic | • Reduce traffic to those either visiting or driving through to enjoy park | • None identified |
| • People are still using Lafayette Road for through trips | • Minimize through traffic | • Directness of traffic volume route scenic<br>• Travel times same |

Questionnaire Findings

As indicated in the Traffic Impact Study findings, 52 questionnaires were received. The questionnaire inquired about conditions both inside and outside the Park. One section of the questionnaire was devoted to finding out usage of LaFayette Road through the Park. Forty-six percent (24) of respondents stated that they use LaFayette Road every week while 44 percent (23) said they use it rarely. Fifty-seven percent (33) of respondents stated the primary reason they use LaFayette Road was to travel through the Park to other destinations, and 36 percent (21) said they use it to visit the Park.

Two sections on the questionnaire consisted of open-ended questions to solicit input on current transportation issues and future desired conditions for the study area. Questions were asked in such manner to identify potential issues for differing transportation modes (motorists, cyclists and pedestrians) separately. Motorist concerns within the Battlefield Subarea were related to traffic operations and system design and maintenance. Speed was the number one operational issue, with six respondents stating that traffic was moving too fast and two respondents stating that the speed limit was too low, primarily on LaFayette Road. Two comments were made about the poor condition of the roads. For cyclists, cars moving too fast on Dyer Road, Alexander Bridge Road and LaFayette Road and too much traffic on LaFayette Road were some concerns. Cyclists also expressed a need for more bike lanes and/or larger shoulders to facilitate safe movement. Pedestrian concerns paralleled the cyclists' concerns with four respondents citing too much traffic going too fast on LaFayette Road and two respondents stating that there were

not wide enough shoulders for pedestrians on the main roads, LaFayette Road, McFarland Gap Road and Reed's Bridge Road.

Sixty-seven percent (35) of respondents provided comments about what they would change about the transportation system within the Chickamauga Battlefield. Most of the comments were related to traffic operations and system design/facilities/maintenance. Six respondents wanted to see the speed limit within the Park increased and five wanted the speed limit decreased. Six respondents wanted more transportation facilities such as bike lanes, improved walking paths and equestrian facilities, and four respondents wanted more general facilities such as restrooms, camping, and picnicking facilities throughout the Park.

Regarding Park visitor access and circulation, 56 percent (29) of respondents provided comments. Most pertained to traffic operations and system design/facilities/maintenance. Three respondents thought more one-way roads would benefit Park visitors, and five respondents expressed the need to improve the existing roads through repaving, providing bike lanes or shoulders, or road widening. For non-Park user access and circulation, 60 percent (31) of respondents provided comments. Most comments were related to access and traffic operations. Seven respondents cited variations of controlling access to the Park by non-Park users by either prohibiting through-traffic, closing LaFayette Road at the south end of the Park, encouraging non-Park motorists to find alternatives or improving commuter routes outside of the Park. Again, the speed limit was addressed with four respondents expressing the desire to lower the speed limit and two respondents wishing to raise the speed limit in the Park.

52 percent (27) of respondents provided comments on how the resources at the Chickamauga Battlefield Park could be improved by changes in the transportation systems, facilities, or services. Three respondents cited were lowering the speed limit, four respondents thought limiting access to Park users and keeping pass-through traffic to a minimum would be beneficial. Four respondents thought improving access through providing more opportunities for alternative access to the Park such as more and improved bike trails, multi-use trails, or guided tours would benefit the Park. Detailed results from the entire survey and a copy of the questionnaire are included in Appendix A.

These issues and desired outcomes will be considered in the development of the recommended program of alternatives in Task 5.

**Transportation Analyses**

The methods employed to identify current and future needs included a safety analysis of Park crash data, evaluation of traffic usage on the existing system to identify capacity needs, and a forecast of traffic conditions using Chattanooga's MPO travel demand model to identify future needs.

Roadway Safety Issues

Safety issues in the Battlefield Park were reviewed through discussions with Park staff and an evaluation of crash data from 1996, 1997, 2002, and 2003 (January through May). Historically before US 27 was rerouted around the Park, the Park averaged 60 to 70 crashes per year. A large number of the crashes, especially those on LaFayette Road, occurred when vehicles struck deer. There have been no documented conflicts between pedestrians or bicyclists with vehicles on the Park roads.

Out of the crash logs submitted for evaluation, there were 99 crashes in 1996, 63 crashes in 1997, 19 crashes in 2002, and 9 crashes in 2003 (through May). Examining the aggregate data, some patterns revealed include the following:

- The majority of crashes (38 percent) occurred from October through December.
- Crashes appear to be clustered around the morning and afternoon commute travel periods, from 7 a.m. to 10 a.m. and from 3 p.m. to 6 p.m., with the greatest percent of crashes occurring around 5 p.m.
- Forty-six percent of all crashes involved striking a deer.
- Seventy percent of all crashes occurred on LaFayette Road/former US 27.

Since US 27 has been relocated, there has been a precipitous drop in crashes, especially along LaFayette Road. US 27/Lafayette Road experienced 80 crashes in 1996 and 47 crashes in 1997. In 2002, LaFayette Road had only five crashes. However, there have been more crashes on McFarland Gap Road in 2002 (three crashes) and 2003 (five crashes) than in previous years (two crashes in 1996 and no crashes in 1997).

Using traffic volumes collected by the NPS on LaFayette Road, McFarland Gap Road, and Reeds Bridge Road and approximate distance of the roads within the Park boundaries, normalized crash rates were calculated, which are shown in Table 3.2. The crash rate has declined on LaFayette Road since the relocation of US 27, but there seems to be a marginal increase in crashes on McFarland Gap Road.

**Table 3.2 Crash Rates per 100 Million Vehicle Miles Traveled**

| Year | LaFayette Road | McFarland Gap Road | Reeds Bridge Road |
|---|---|---|---|
| 1996 | 26.21 | 0.03 | 0.15 |
| 1997 | 13.26 | 0.00 | 0.17 |
| 2002 | 0.34 | 0.04 | 0.19 |
| 2003 (Jan.-May) | 0.05 | 0.06 | 0.02 |

Source: NPS Chickamauga Battlefield Crash Logs, 1996, 1997, 2002, 2003; NPS traffic counts

Transportation Network Demand

*Existing Roadway Capacity Needs*

The relocation of US 27 has had a measurable impact on traffic volumes on the Chickamauga Battlefield Park roads. On LaFayette Road, daily traffic volumes have decreased over 70 percent from 13,200 in 2000 to 3,700 in 2002 since the relocated US 27 opened. A planning level of service (LOS) evaluation was conducted to examine the existing capacity needs on the Park roads. With the present traffic, none of the roads within the Park operate at an unacceptable LOS (below LOS C). Table 3.3 summarizes existing Park Volumes

**Table 3.3 Park Road Existing Volumes**

| | Daily Two-Way Traffic Volumes (2003) | | |
|---|---|---|---|
| **Road** | **Daily** | **AM Peak Hour** | **PM Peak Hour** |
| LaFayette Rd. south of Glenn Viniard Rd. (at southern Park boundary) | 4,400 | 280 | 350 |
| LaFayette Road north of the McFarland Gap Road/Reed's Bridge Road intersection | 7,600 | 440 | 660 |
| Reed's Bridge Rd. at eastern Park boundary | 4,100 | 400 | 450 |
| McFarland Gap Road west of LaFayette Road | 3,400 | 210 | 360 |
| Viniard-Alexander Rd. north of Thelford Rd. | 200 | 20 | 20 |
| Alexander Bridge Rd. at eastern Park boundary | 380 | 30 | 50 |
| Lytle Rd west of Mullis Rd. | 300 | 20 | 30 |

*Future Roadway Capacity Needs*

Volume-to-capacity (V/C) ratios from the refined 2025 LRTP model were evaluated to identify future deficiencies in the study area. During the 2003 base year model validation, a designation was added to the model to represent roadways within the Park boundary. As a result, roadways within the Park could be assigned a lower capacity. Capacities used within the Park were based on the rural area type capacities with a ten percent reduction to represent roadway curvature, posted speed, and design standards. This resulted in a capacity of 630 vehicles per hour per lane for Park collectors and 720 vehicles per hour per lane for Park minor arterials. These values can be translated to approximately 12,600 and 14,400 vehicles per day on two-lane roadways for

Park collectors and minor arterials, respectively. The only minor arterial roadway within the Park is LaFayette Road. The remaining roadways within the Park are collectors. To be consistent with the validated 2003 base year model, the refined 2025 LRTP model capacities are the same for all three models (2003, E+C, and 2025 LRTP) by area type, facility type, and number of lanes. The possibility of reducing capacities further within the Park as part of alternative model testing will be considered.

Table 3.4 shows the forecasted Park road volumes as compared to the existing 2003 counts. V/C ratios were calculated and examined (see figures 2.5 and 2.6 in section 2). Based on future V/C ratios within the refined 2025 LRTP model, no excessive V/C ratios were found on roadways within the Park subarea. However, higher future volumes in relation to the Park road's context are indicated on Reed's Bridge Road, McFarland Gap Road and LaFayette Road.

**Table 3.4 Park Road Forecasted Traffic Volumes**

| Major Roadway | Daily Two-Way Traffic Volumes Comparison | | |
|---|---|---|---|
| | 2003 Counts | 2025 Socioeconomic Data with E+C Network | 2025 Long Range Transportation Plan |
| LaFayette Road south of Glenn Viniard Rd.(at southern Park boundary) | 4,400 | 5,000 | 4,400 |
| LaFayette Road north of the McFarland Gap Road/Reed's Bridge Road intersection | 7,600 | 9,900 | 9,600 |
| LaFayette Road south of Brotherton Road | 3,700 | 4,800 | 4,400 |
| Reed's Bridge Road at eastern Park boundary | 4,100 | 10,000 | 10,100 |
| McFarland Gap Road west of LaFayette Road | 3,400 | 6,900 | 7,300 |
| Viniard-Alexander Rd. north of Thelford Rd. | 200 | 200 | 100 |
| Alexander Bridge Rd. at eastern Park boundary | 380 | 460 | 1,000 |
| Lytle Rd west of Mullis Rd. | 300 | 50 | 50 |

Source: GDOT, NPS, Chattanooga MPO MinUTP Model, Cambridge Systematics

*Parking Facilities*

Through discussions with Park staff and from data collected during the cultural landscape assessment, an understanding of the parking utilization and needs within the Battlefield Park were evaluated. The Park has not conducted any parking utilization studies to date. Historically, the greatest demand for parking has been during the spring and fall on weekend afternoons, especially Sunday. The greatest demand for parking is at the more significant historic sites. On

occasion, recreational activity uses such as bicycle tour groups have scheduled rides and have met on the Park grounds, which has led to a limitation of spaces available for other Park users. Not having sufficient supply of parking to meet demand has only occurred sporadically.

In order to accommodate visitor circulation needs, the Park maintains 71 pull-off and parking areas. Parking is provided at the major historical visitor attractions, along the auto tour routes, and at the recreational facilities. Table 3.5 summarizes the parking supply.

**Table 3.5 CCNMP Battlefield Parking Facility Summary**

| Parking Lot Description | Surface Type | Approximate Parking Capacity |
|---|---|---|
| Visitor Center | asphalt | 90 spaces, 30 in upper lot, 60 in lower lot |
| Recreational field | gravel | 50 spaces |
| **Interpretive stations** | | |
| Minor tour route stops | paved with curb and gutter, wood post with black chain-link fencing | 4 spaces, each |
| Major tour stops (Kelly House, Snodgrass House, Snodgrass Hill) | | 6 to 8 spaces, each |
| Wilder Brigade Monument | paved | 40 spaces, 20 in eastern lot, 20 in western lot. |
| 4 Picnic areas | | 8 spaces, each |
| Poe and Battleline Road | asphalt without curb and gutter | 1 to 2 spaces, each |

Many new pull-off areas were added in 1994, but the cultural landscape assessment could not identify which were added. Characteristics of the pull-offs differ throughout the Park. Some have hard edges with curbs and gutters while others are composed of crushed stone or gravel or are paved asphalt without curb and gutter.

### Cultural and Natural Resource Evaluation

Within the subarea, identifying the program alternatives during Task 5 will require evaluation of the historic/cultural and natural resources. The following provides an overview of the historic features as they relate to transportation and Park circulation, a discussion of each roadway's significance, and a sensitivity analysis for the Park roads.

Historic Circulation Features

The Chickamauga Battlefield Unit of the CCNMP includes a variety of circulation systems associated with various phases of the site's history and land use. Circulation features associated with the site include paved and unpaved roads, trails, road traces, walks, parking areas, and roadside pull-offs. There are more than 22 miles of paved roads, more than five miles of gravel/earthen roads, and more than 30 miles of trails in the Park. There are also a number of limestone bridges and more than 100 limestone culverts associated with roads in the Park.

In 1863, the circulation within the Park was comprised of primary and secondary roads. LaFayette Road served as the main north-south corridor in the area and functioned as the Union Army's supply line and link to Chattanooga. Other primary roads included Reed's Bridge Road, Jay's Mill Road, Brotherton Road, Alexander Bridge Road, Viniard-Alexander Road, McFarland Gap Road, Mullis-Spring Road, Glenn-Kelly Road, Snodgrass-Savannah (formerly known as the North Fork of Glenn-Kelly Road), Dyer Road, Glenn-Viniard Road, Dry Valley Road, and Snodgrass Road. Many other secondary roads crossed the Battlefield and linked the primary roads with the local farmsteads.

After the Civil War, the circulation system underwent change as local families adapted to the socio-economic changes of the post-war period. This included both the addition of several new primary and secondary roads, as well as the straightening and realignment of existing roads.

Because of the efforts of the Park Commission and later the NPS, many of these changes were reversed. Besides Dry Valley Road (which was essentially transformed into the Chattanooga, Rome & Columbus Railroad in the late 1880s) and missing portions of Snodgrass, Mullis-Spring, and Glenn-Viniard Roads, all primary roads that provided transportation for troops and acted as strategic locations in the battle remain today and are considered contributing features to the battle period. Most of the secondary roads no longer exist. Exceptions to this are Dalton Ford and Thedford Ford Roads in the southeast quadrant of the Park, and where existing trails follow their historic alignment, such as Sawmill Fork, Halls Ford, and Kelly Road trails.

Several roads were added or altered during the commemorative period to provide visitor access to important areas of the Battlefield. These include Poe Road, Battleline Road, Vittetoe Road, Mullis-Vittetoe Road, Vittetoe-Chickamauga Road, and Snodgrass Hill Road, as well as other gravel administration and service roads located in the northwest quadrant of the Park. A portion of Mullis Spring Road was also realigned further to the west.

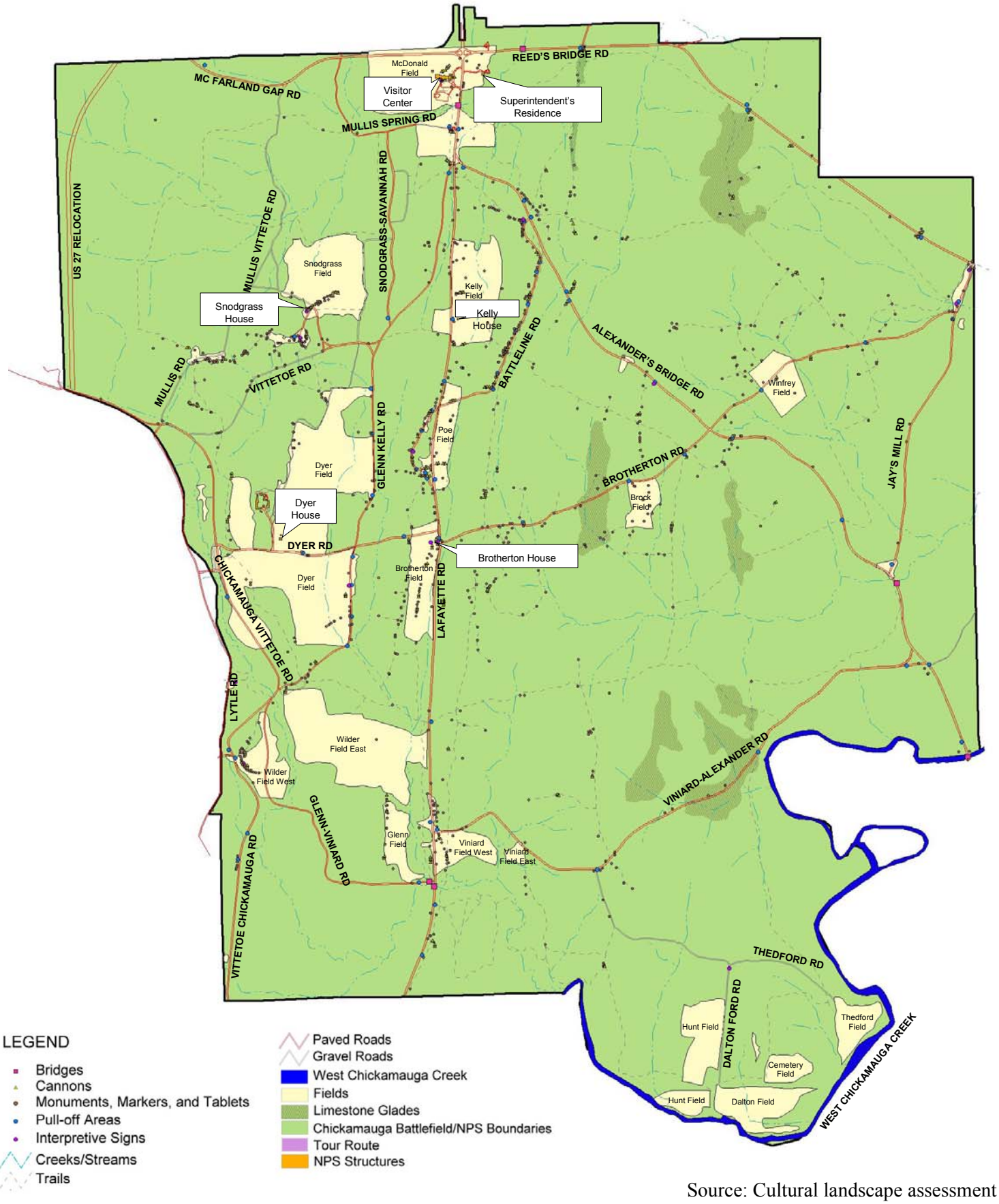
During the commemorative period, the most significant change to the character of the battle-era roadways consisted of road surfacing improvements, such as paving and regrading. However, these roads all remain two-lane roads and are little wider than they were in 1863. LaFayette Road and Alexander's Bridge Road have seen the greatest change in width and shoulder improvements. Other significant changes include the addition of stone lined ditches and stone culverts. Although improved and somewhat altered to accommodate visitor access, the surviving

network of mostly battle-era roads is of great assistance in helping the visitor to understand the troop movements and the combat that took place on the battlefield of Chickamauga.

The system of trails within the Park is quite extensive. These trails provide not only the opportunity for visitors to gain access to Park monuments located within the forest, but also provide visitors with a better understanding and appreciation of the topography and vegetation that the troops would have experienced at the time of the battle. A few of these trails follow historic road beds that date to the battle period. These include Sawmill Fork Trail, Hall's Ford Trail, Kelly Road Trail, and several other unnamed secondary road traces that accessed historic features and farmsteads, such as the Smith, Park, Brock, Winfrey, Jay's Mill, and Horseshoe Ridge trails. Some trails, such as the Forrest Road Trail, follow historic road traces that date from the commemorative period, while others appear to have been created to access monuments and markers. The dates of origin of most of the other trails are currently undetermined, but are assumed to post date the battle period. A more detailed description of each road and related historical structures is provided in Appendix D. Figure 3.1 shows the Park road features.

Sixteen interpretive signs are also placed throughout the Park to help educate visitors about significant battle events and landscape features.

## Figure 3.1 CCNMP Battlefield Road Features




Source: Cultural landscape assessment

Park Road Sensitivity Evaluation

Within the Subarea Transportation Plan study area, understanding the cultural and historic significance of the CCNMP Battlefield Park's roadways is essential to progressing to Task 5, developing a recommended plan of alternatives. Though many of the roadways that traverse through the Park continue outside the Park, while in the Park, the roads are Park roads. They serve to access the historic and cultural features within the Park, and the visitor experience within the Park is impacted by non-Park use of the roads.

In order to better understand the historic and cultural importance of the Park roads, a ranking system was employed to determine which roads have relatively greater historic, cultural, and interpretative nature than others. The rankings are based upon five criteria:

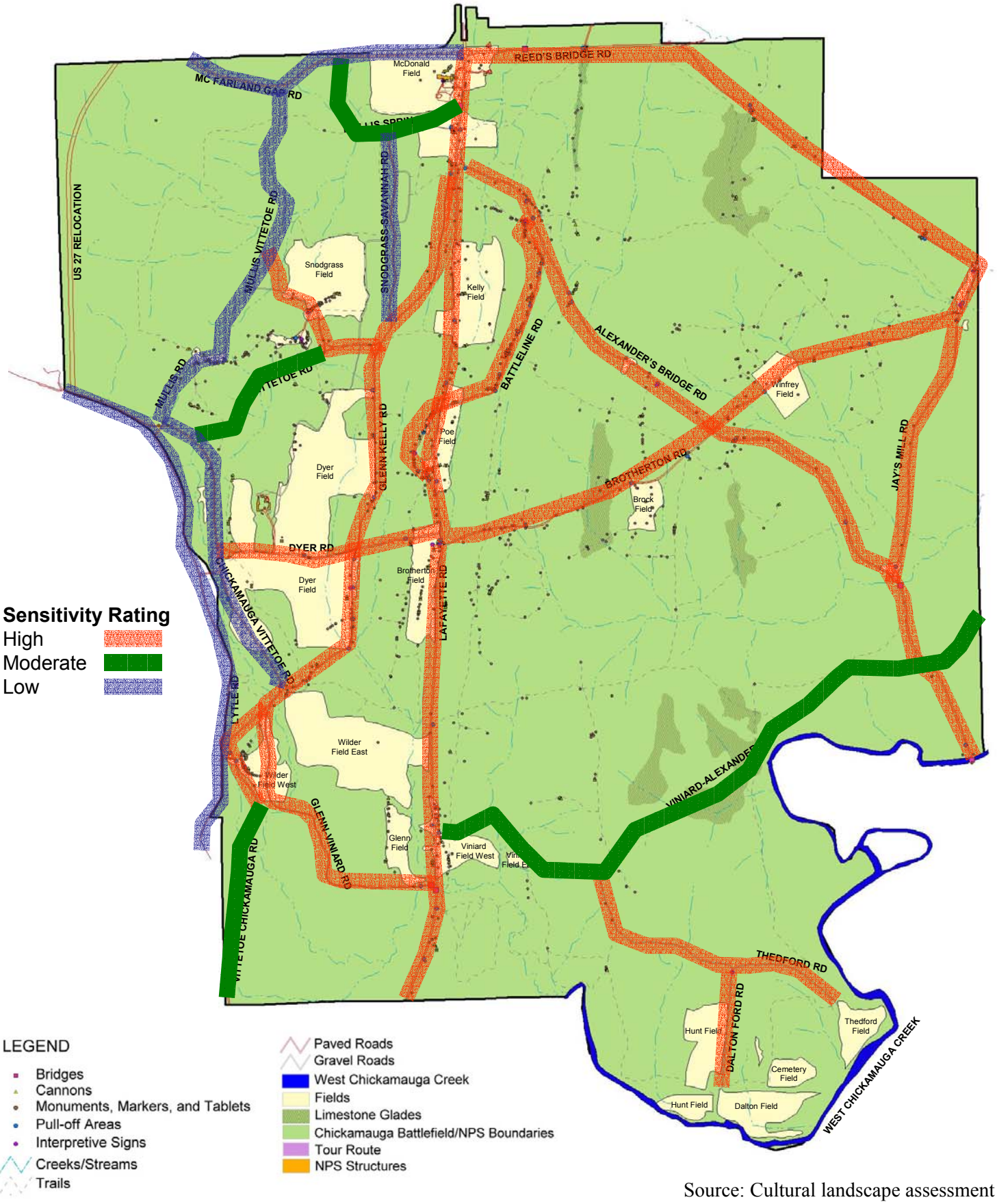
- The road's association with a historic period
- The interpretive value of the road
- The road's historic integrity
- Whether or not the road is part of the auto tour route
- The road's contribution to a positive visitor experience

The assignment of the rankings for each road is both objective and subjective, based upon the knowledge of the consultant team members and consultation with NPS staff. Each criterion was ranked on a three-point scale: the higher the ranking, the more sensitive the road for that criterion. Once each of the roadways was evaluated, a composite score was calculated. The roads were then grouped into three categories representing the relative cultural and historic sensitivity. The roads with the highest cumulative score are considered the most sensitive to changes that may increase traffic volume or speed, or which may result in physical modifications required to increase traffic volume or speed. Roads with a cumulative score of 13 to 15 received a high sensitivity rating, a score of 10 to 12 received a moderate sensitivity rating, and a score of 9 or less received a low sensitivity ranking. The detailed methodology used for the sensitivity evaluation is included in Appendix E. Table 3.6 lists each Park road with its criteria and composite score, and Figure 3.2 shows the Park roads by sensitivity classification: high, moderate or low.

## Table 3.6 CCNMP Battlefield Road Sensitivity Rating

| Road Name | Association with Historic Period | Interpretive value | Historic Integrity | Auto Tour Route | Visitor Experience | Cumulative Score |
|---|---|---|---|---|---|---|
| Brotherton Road | 3 | 3 | 3 | 3 | 3 | 15 |
| Glenn-Kelly Road | 3 | 3 | 3 | 3 | 3 | 15 |
| Snodgrass Road (paved) | 3 | 3 | 3 | 3 | 3 | 15 |
| Alexander Bridge Road | 3 | 3 | 2 | 3 | 3 | 14 |
| Battleline Road | 2 | 3 | 3 | 3 | 3 | 14 |
| Dyer Road | 3 | 3 | 3 | 2 | 3 | 14 |
| Glenn-Viniard Road | 3 | 3 | 2 | 3 | 3 | 14 |
| Jay's Mill Road | 3 | 3 | 2 | 3 | 3 | 14 |
| Poe Road | 2 | 3 | 3 | 3 | 3 | 14 |
| Snodgrass Hill Road | 2 | 3 | 3 | 3 | 3 | 14 |
| Wilder Road | 3 | 3 | 3 | 2 | 3 | 14 |
| Dalton Ford Road | 3 | 3 | 3 | 1 | 3 | 13 |
| LaFayette Road | 3 | 3 | 2 | 3 | 2 | 13 |
| Reeds Bridge Road | 3 | 3 | 2 | 3 | 2 | 13 |
| Thedford Ford Road | 3 | 3 | 3 | 1 | 3 | 13 |
| Mullis Road | 3 | 2 | 2 | 1 | 2 | 10 |
| Viniard-Alexander Road | 3 | 2 | 2 | 1 | 2 | 10 |
| Vittetoe Road | 2 | 2 | 3 | 1 | 2 | 10 |
| Vittetoe-Chickamauga Road | 2 | 2 | 2 | 1 | 3 | 10 |
| Chickamauga-Vittetoe Road | 2 | 2 | 2 | 1 | 2 | 9 |
| McFarland Gap Road | 3 | 2 | 2 | 1 | 1 | 9 |
| Mullis-Vittetoe Road | 2 | 1 | 3 | 1 | 2 | 9 |
| Snodgrass-Savannah Road | 3 | 2 | 1 | 1 | 2 | 9 |
| Lytle Road | 2 | 1 | 3 | 1 | 1 | 8 |

## Figure 3.2 CCNMP Battlefield Road Sensitivity




Source: Cultural landscape assessment

# 4 Next Steps

Through the efforts of Task 1, Data Collection and Task 2, Identification of Issues and Needs, the study will now proceed to Task 5, Development of a Recommended Plan of Alternatives for both the Traffic Impact Study and Subarea Transportation Plan study areas. Efforts in Task 5 will concentrate on verifying issues and needs through field review and testing possible solutions through the refined travel demand model. The types of solutions that will be examined will focus on traffic operations, capacity, and connectivity improvements in the Traffic Impact Study area and will consider the same within a context-sensitive framework in the Battlefield Subarea Transportation Plan area. The goals and objectives developed during Task 1 will guide the consideration of all potential alternatives.

Identified needs and issues in the Traffic Impact Study Area can generally be grouped into one of three categories: north-south mobility, east-west mobility, or gateway linkages. Within the Battlefield Subarea, the issues and needs generally relate to visitor experience. Table 4.1 summaries identified needs and issues for both study areas.

**Table 4.1 Identified Traffic Impact Study Area and Battlefield Subarea Needs and Issues**

| Traffic Impact Area<br>North-South Mobility and Connectivity to Chattanooga | |
|---|---|
| **Identified Need or Issue** | **Manner of Need Identification** |
| • Eastern bypass or improvements to existing north-south roads and connections | Stakeholder Participation Panel |
| • Mis-timed traffic signals on Battlefield Parkway (SR 2) at US 27 | Public Input |
| • Transportation network and commuter route improvements outside the Park | Public Input |
| • Safe access to and from US 27 relocation | Stakeholder Participation Panel |
| • Growth patterns | Stakeholder Participation Panel |
| • Not getting enough attention on North Georgia roads | Stakeholder Participation Panel |
| • Potential positive economic impacts of US 27 relocation | Stakeholder Participation Panel |
| • High crash rate indicated on Burning Bush Road | Safety Evaluation |
| • Congestion indicated on LaFayette Road from Battlefield Parkway north to 37th Avenue, Schmidt Rd./Dewberry Rd./Hogan Rd. from McFarland Gap Rd. to Chickamauga Ave., Fant Drive from Battlefield Parkway to Cloud Springs Road, and Three Notch Road from Battlefield Parkway to US 41 | 2025 LRTP Network Model |

**Table 4.1 Identified Traffic Impact Study Area and Battlefield Subarea Needs and Issues, Continued**

| Traffic Impact Area<br>East-West Mobility and Mobility within Ft. Oglethorpe | |
|---|---|
| **Identified Need or Issue** | **Manner of Need Identification** |
| • Accessibility to Fort Oglethorpe from US 27 relocation | Stakeholder Participation Panel |
| • Transportation network and commuter routes improvements outside the Park | Public Input |
| • Decreased travel through downtown Fort Oglethorpe due to US 27 relocation | Stakeholder Participation Panel |
| • Growth patterns | Stakeholder Participation Panel |
| • Not getting enough attention on North Georgia roads | Stakeholder Participation Panel |
| • High crash rate on SR 146/Cloud Springs Road | Safety Evaluation |
| • Congestion indicated on Battlefield Parkway from Cedar Lane to east of I-75 | 2025 LRTP Network Model |
| **Gateway Linkages between Battlefield and Surrounding Area** | |
| **Identified Need or Issue** | **Manner of Need Identification** |
| • Signage and wayfinding improvements around the Park | Public Input |
| • Ft. Oglethorpe business district development, impacts from US 27 relocation | Stakeholder Participation Panel |
| • City of Chickamauga historic linkages | Stakeholder Participation Panel |
| • Connections between Battlefield Park and historic areas outside the Park, and enhanced visitor amenities outside the Park | Public Input |
| • Historic and cultural artifacts in the primary and secondary gateway corridors relate to the Battle of Chickamauga and the commemorative period | Cultural Assessment |

**Table 4.1 Identified Traffic Impact Study Area and Battlefield Subarea Needs and Issues, Continued**

| Battlefield Subarea Identified Needs and Issues | |
|---|---|
| **Identified Need or Issue** | **Manner of Need Identification** |
| • Positive experience and Park enjoyment desired for visitors | Stakeholder Participation Panel |
| • Fundamental conflict between Park visitors and through traffic | Stakeholder Participation Panel |
| • Excessive traffic and noise | Stakeholder Participation Panel |
| • Alternative access needed in the Park such as more and improved bike trails, multi-use trails, or guided tours | Public Input |
| • Additional access control needed within the Park, and alternative or improved commuter routes outside of the Park desired | Public Input |
| • Higher or lower speed limit on LaFayette Road | Public Input |
| • More bike lanes and/or larger shoulders desired for safety | Public Input |
| • Lack of pedestrian facilities on the main roads including LaFayette Road, McFarland Gap Road and Reed's Bridge Road | Public Input |
| • Additional one-way roads in the Park are desired | Public Input |
| • Poor condition of Park roads | Public Input |
| • Sensitivity of two-thirds of Battlefield Park based on their cultural, historic, and interpretive nature and include Brotherton Road, Glenn-Kelly Road, Snodgrass Road (paved), Alexander Bridge Road, Battleline Road, Dyer Road, Glenn-Viniard Road, Jay's Mill Road, Poe Road, Snodgrass Hill Road, Wilder Road, Dalton Ford Road, LaFayette Road, Reeds Bridge Road, and Thedford Road. | Cultural Assessment |

The types of strategies that will be examined during Task 5 will focus on the identified needs and issues within the framework of established study goals and objectives. Potential strategies in the Traffic Impact Study area include capacity additions, operational improvements, demand management, wayfinding, and multimodal facility improvements. Within the Battlefield Subarea, potential strategies include operational changes, multimodal facility improvements, wayfinding and interpretive facility improvements or modifications.