US 21 Corridor Improvement Concept Plan

Prepared for:



Prepared by:

DWA
Day Wilburn Associates, Inc.

May 2001

Day Wilburn Associates, Inc.
DWA

DWA
Day Wilburn Associates, Inc.

1718 Peachtree Street NW • Suite 461 • Atlanta, Georgia 30309
Phone: (404) 249-7550
Fax: (404) 249-7705
www.daywilburn.com

May 7, 2001

Mr. Anthony J. Criscitiello, AICP
Beaufort County Planning Director
100 Ribaut Road, Room 260
Post Office Drawer 1228
Beaufort, South Carolina 29901

Reference: ***US 21 Corridor Analysis on St. Helena Island***

Dear Mr. Criscitiello: Tony

The US 21 corridor in eastern Beaufort County provides the roadway connection to St. Helena Island, Dataw Island, Harbor Island, Hunting Island, and Fripp Island. This important roadway corridor serves all of the roadway travel between these islands and the mainland, providing a vital link for daily travel and a necessary connection for hurricane evacuation. In addition, this roadway serves local traffic traveling on the island to and from businesses and community centers along the corridor.

At the request of Beaufort County, Day Wilburn Associates, Inc. (DWA) has performed a corridor analysis for US 21 on St. Helena Island to determine existing operations, estimate future travel demand, and recommend improvements to transportation infrastructure to improve safety and operations in the short to mid-term and allow future travel needs to be met. The attached information summarizes the analysis, findings and recommendations for the US 21 corridor analysis on St. Helena Island. In addition, this information (summarized below) provides design guidelines for applying the recommendations to specific areas along the study corridor.

- Attachment A: Summary of findings and recommendations
- Attachment B: Graphics and lists describing analysis, findings, and recommendations
- Attachment C: Design guidelines for application of US 21 Corridor Analysis recommendations

This information was presented to the public in a series of community meetings held in February and March 2001. The recommendations were presented to the County Council on April 23rd. During this meeting, the County Council approved a motion to accept the recommendations set forth in the Corridor Analysis and forward these to the South Carolina Department of Transportation (SCDOT). This motion is a part of the meeting minutes for this County Council meeting, to be approved by May 21st.

We hope that this information is helpful. If you have any questions, please do not hesitate to call me.

Sincerely,

DAY WILBURN ASSOCIATES, INC.

Jim Wilburn

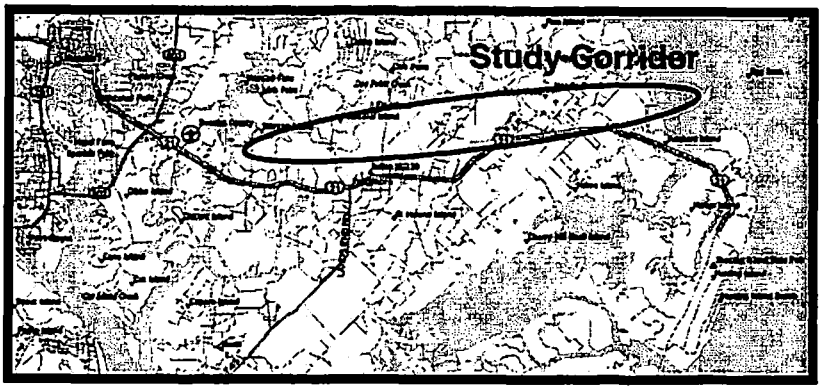
James R. Wilburn, AICP
Principal

cc: Mr. Mike Sullivan, P.E., South Carolina Department of Transportation, w/attachments
Mr. Chris Bickley, Lowcountry Council of Governments, w/attachments

US 21 Corridor Analysis on St. Helena Island
Summary of Findings and Recommendations

STUDY LOCATION:

US 21 on St. Helena Island from Cowen Creek to the Harbor River



STUDY EFFORTS:

Day Wilburn Associates, Inc. (DWA), at the request of the Beaufort County Planning and Development Department, has examined the traffic operations, safety, and roadway capacity of the US 21 Corridor on St. Helena Island. This examination included three primary tasks:

- Examination of traffic flow on and off of St. Helena Island
- Development of a geometric and operational theme for roadway sections
- Analysis of specific operational and safety requests, including signalization, turn lanes, and pedestrian crossings in the Corners Community and throughout the corridor

COMMUNITY INVOLVEMENT:

DWA and the Beaufort County planning staff recently conducted a series of meetings with the communities which are the primary users of US 21 through St. Helena Island to present draft findings and recommendations:

Initial Meetings in Community - Two meetings were held in the Corners Community to discuss project issues, existing traffic data and some preliminary findings. These meetings were held on January 26th and February 28th.

Community Meetings to Present Findings and Recommendations - Following completion of planning and traffic analyses of the US 21 corridor, DWA attended three community meetings, held on March 28th and 29th to present findings:

- St. Helena Island – 60 attendees
- Dataw Island – 93 attendees
- Fripp Island – 106 attendees

Based on these meetings 56 written comments were generated by the community and reviewed by DWA and Beaufort County staff.

US 21 Corridor Analysis on St. Helena Island
Summary of Findings and Recommendations

RECOMMENDATIONS:

Our preliminary recommendation is twofold, addressing travel needs in the short to mid-term and mid to long-term time periods.

Short to Mid-Term:

An improvement concept, essentially within existing US 21 rights of way, that includes the following elements:

- Turn lanes, intersection improvements, and signalization where appropriate to address short to mid-term needs.
- Pedestrianization in the Corners area and facilities to provide for bicycle travel needs throughout the corridor.
- Hurricane evacuation needs addressed through providing two paved lanes for use by traffic exiting St. Helena Island and one improved shoulder lane for emergency vehicles onto the island.

These improvements respond to the safety and operational deficiencies along the corridor and provide some increased capacity for movement through and within the corridor.

Mid to Long-Term:

Further assessment is needed of improvements that would provide additional expansion of transportation capacity for St. Helena and adjacent islands to respond to growth in the mid to long-term.

The most likely approaches for expanding this capacity were examined including:

- Implementation of turn lanes and intersection improvements only
- Construction of a two-lane bypass of the Corners Community area
- Construction of additional bridge onto St. Helena Island north or south of US 21
- Widening of US 21 to four or five lanes

Based on this examination more detailed investigation of the advantages and disadvantages of a bypass of the Corners activity area is recommended. This would allow separation of long trip length travel from the shorter trips using the roadway for access and collector functions within the Corners activity area. The continued investigation of this alternative should provide for additional community input and public information, as well as coordination with the South Carolina Department of Transportation (SCDOT) and LowCounty Council of Governments.

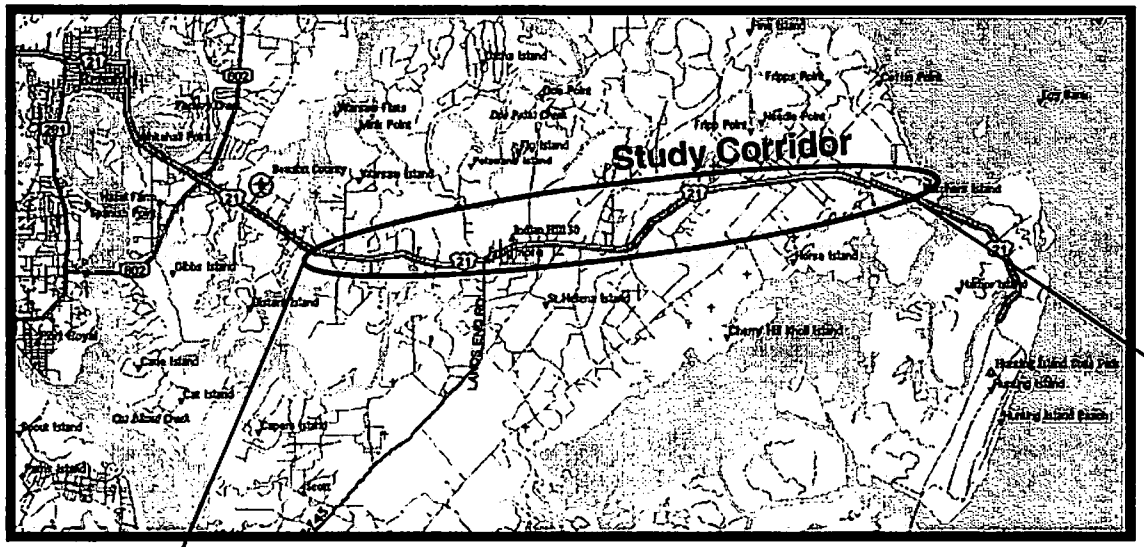
US 21 Corridor Analysis
St. Helena Island

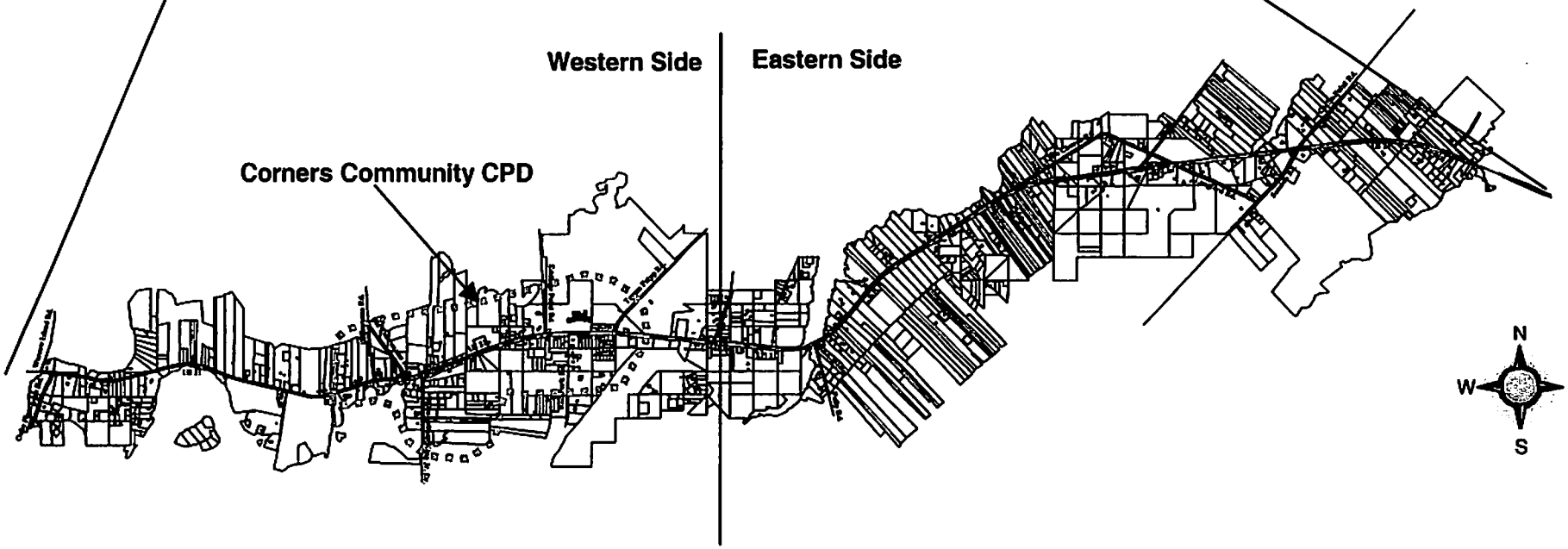
Attachment B
Draft Recommendations
May 7, 2001

DWA
Day Wilburn Associates, Inc.

DWA
Day Wilburn Associates, Inc.

Corridor Location





US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Study Area Characteristics

US 21 Corridor
Physical Characteristics

Western Side

- Connects to multi-lane section west of Cowen Creek
- Contains primary activity center along corridor in Corners Community CPD
- Turning lanes are present in Corners Community
- Reduced available cross-section width near activity areas

Eastern Side

- Connects to Hunting Island/Fripp Island
- Two-lane cross-section throughout
- Long tangents allow passing areas
- Building setbacks further than in western side

US 21 Corridor
Traffic Flow Characteristics

- Traffic is oriented towards Beaufort in the AM peak hour and away from Beaufort in the PM peak hour.
- Traffic volumes decrease from west to east from 16,700 at Cowan Creek to 3,200 at the Harbor River.
- Traffic volumes on side streets are lower than on US 21 with primary movement to/from the west.
- Congestion and delay occurs at the US 21 and Martin Luther King Jr. Drive intersection.
- Primary pedestrian traffic areas:
  - Corners Community Activity Area
  - St. Helena Elementary School.

US 21 Corridor Accident Summary
June 1996 Through December 1998

Accident Occurrences

- Total Accidents – 91
- Injury Accidents – 24
- Fatal Accidents – 3

Accident Time of Day

- Day Accidents - 61
- Night Accidents - 30

Accident Types

- Right Angle – 17
- Rear End – 46
- Head On – 0
- Sideswipe – 7
- Out of Control – 12
- Hit Pedestrian – 2
- Hit Animal – 6
- Other - 1

Information provided by
South Carolina Department of Transportation

US 21 Corridor Accident Summary June 1996 Through December 1998

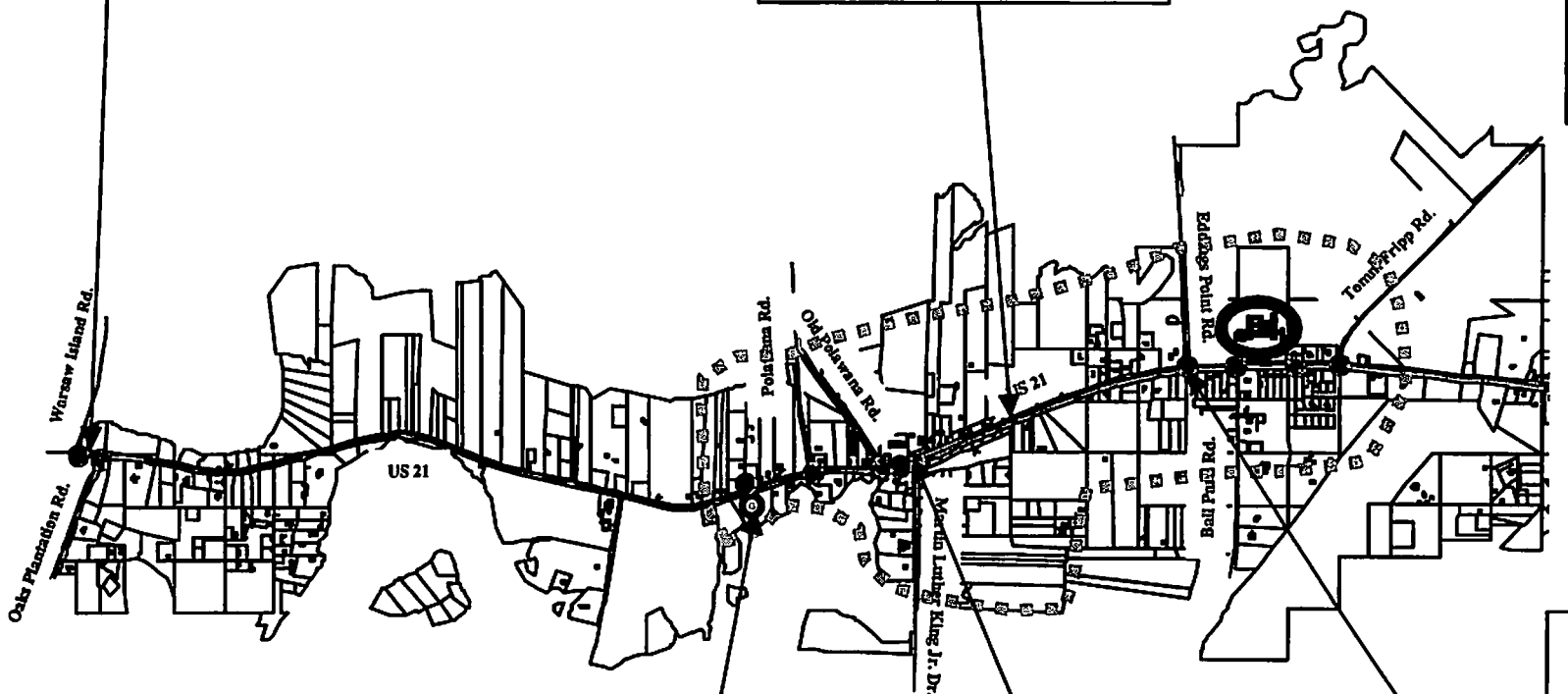
- High proportion of night accidents relative to the amount of traffic using facility at night
- High proportion of rear end collisions reflects high volumes on US 21 with no left turn lanes
- Accident rate overall is lower than state average rate per vehicle mile traveled
- Fatality rate is higher than state average rate per vehicle mile traveled

Summary of Specific Traffic Issues
Western Side of US 21 Study Corridor

Potential need for signalization and realignment of streets

Potential need for lower speed limit and/or pedestrian enforcement within Community Preservation District (CPD)

General Issues
- -Accommodating high traffic volumes
- -Addressing accident experience
- -Providing for turning movements
- -Potential need for street lights, particularly at intersections



Potential need for turn lanes throughout corridor, particularly at ● locations

Legend
- Post Office
- St. Helena Elementary School
- Corners Community CPD

Potential need for signalization and turn lanes

Possible relocation of Post Office

Potential need for signalization and pedestrian crossings

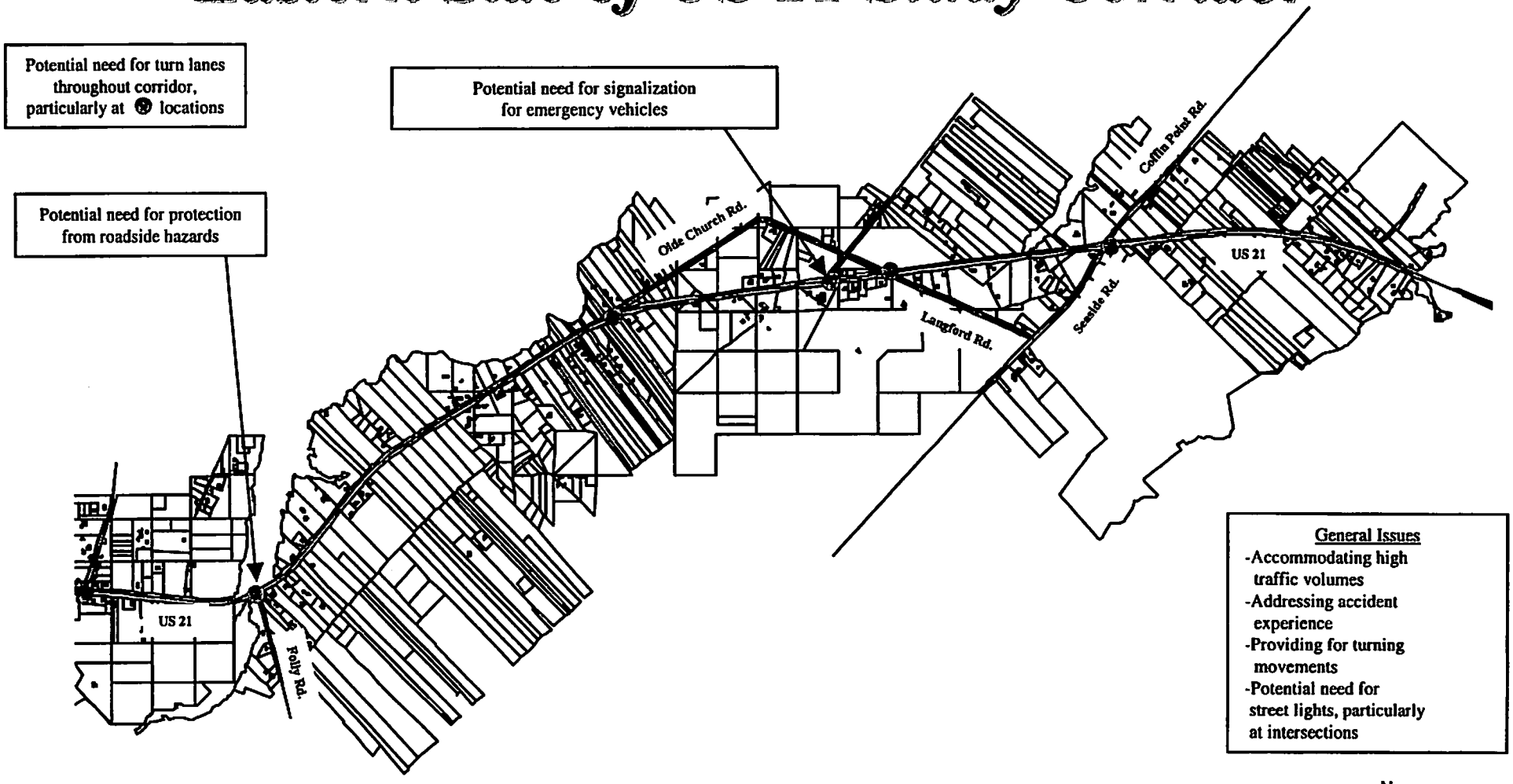
Potential need for signalization and pedestrian crossings due to school traffic

N
W E
S

US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Summary of Specific Traffic Issues
Eastern Side of US 21 Study Corridor



US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

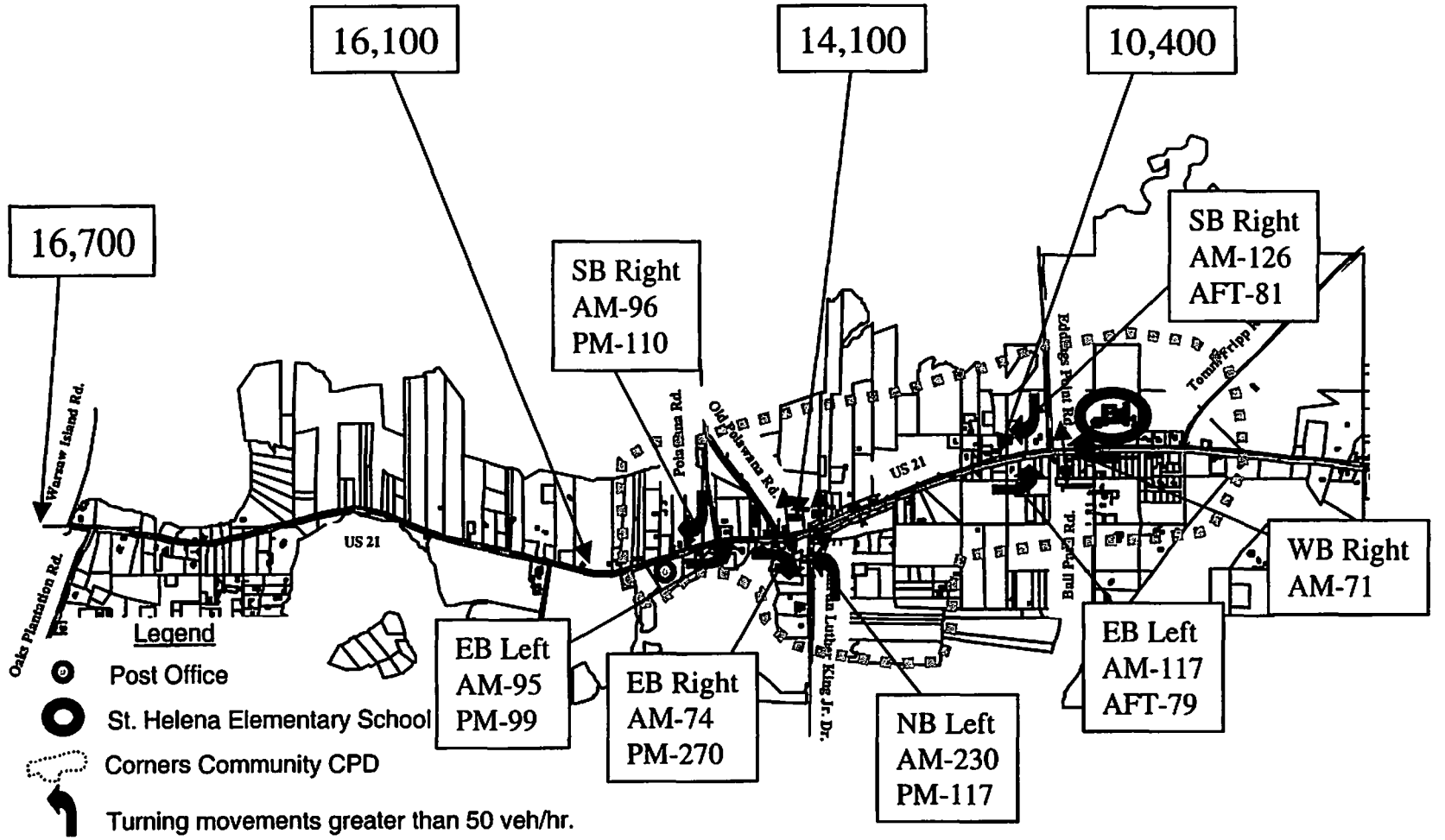
Growth in St. Helena Township

St. Helena Township
Potential Future Growth

- Estimated growth under current comprehensive plan includes population increase between 2000 and 2020 from 9,000 to 16,000.
- Current planned developments include:
  - Planned grocery store in Corners Community
  - Potential relocation of US Post Office
  - Anticipated growth for Dataw Island PUD – 470 units
  - Fripp Island development buildout
  - Hunting Island visitation increases
  - Lands End development buildout
- Comprehensive plan growth could be accommodated through buildout of 40% of the vacant land zoned rural and rural residential.
- Development limitations and growth management could include water and sewer availability, purchase of development rights, and mixed use strategies.

Corridor Traffic Operations Conditions

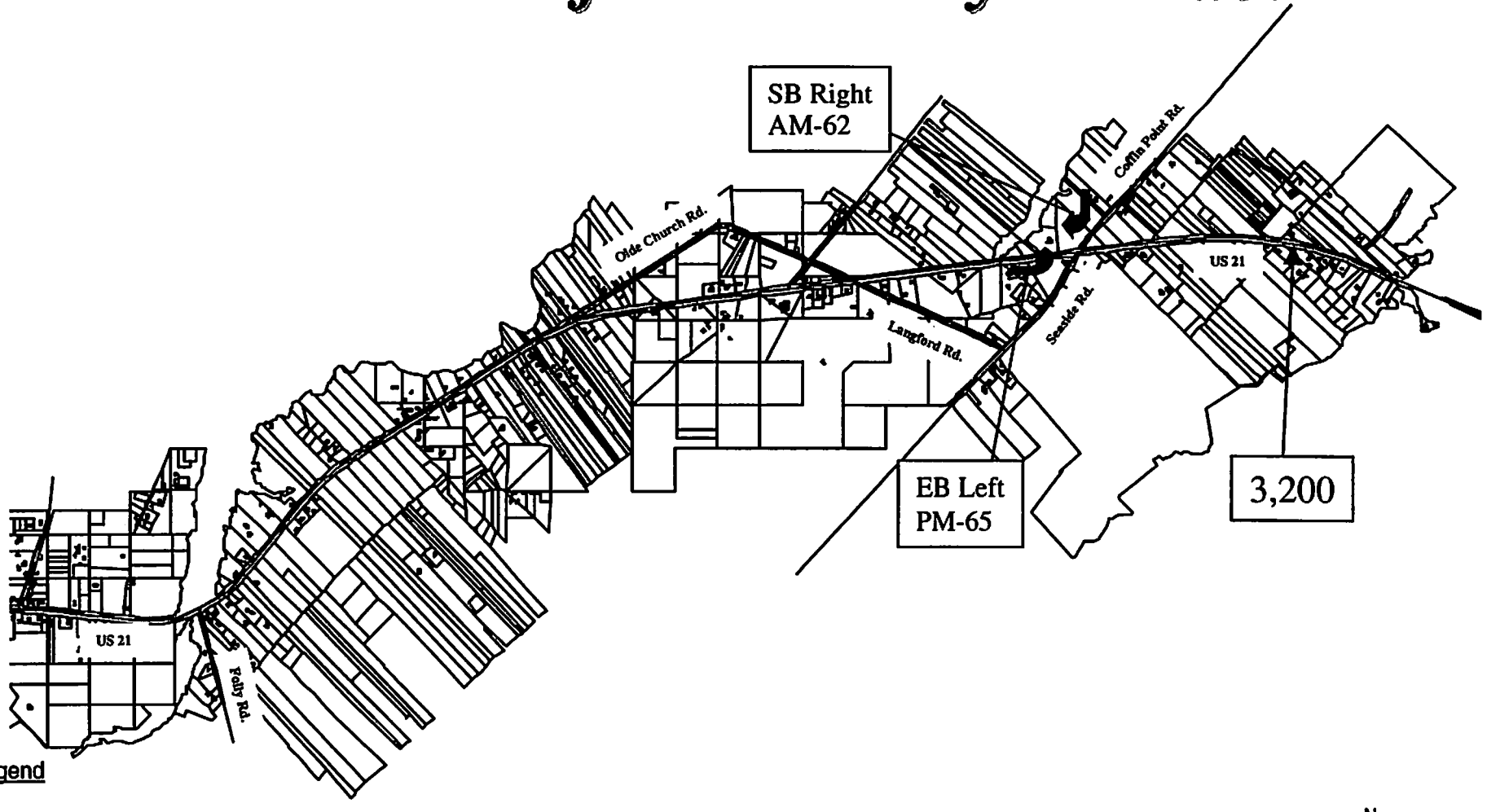
Traffic Volumes/High Volume Movements
Western Side of US 21 Study Corridor



US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Traffic Volumes/High Volume Movements
Eastern Side of US 21 Study Corridor



Legend

Turning movements greater than 50 veh/hr.

16,400 2001 Daily two-way traffic volume

N
W E
S

US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Summary of Roadway Capacity and Deficiencies
Two Lanes With Left Turn Lanes

Year 2001

- Capacity deficiency of 2,000 vehicles per day exists in Corners Community area between Polawana Road and Martin Luther King Jr. Drive

Year 2010

- Capacity deficiency of 3,000 to 6,000 vehicles per day between Post Office and Martin Luther King Jr. Drive
- Capacity deficiency of 1,000 to 5,000 vehicles per day on adjacent sections from Cowen Creek Bridge to Post Office

Year 2020

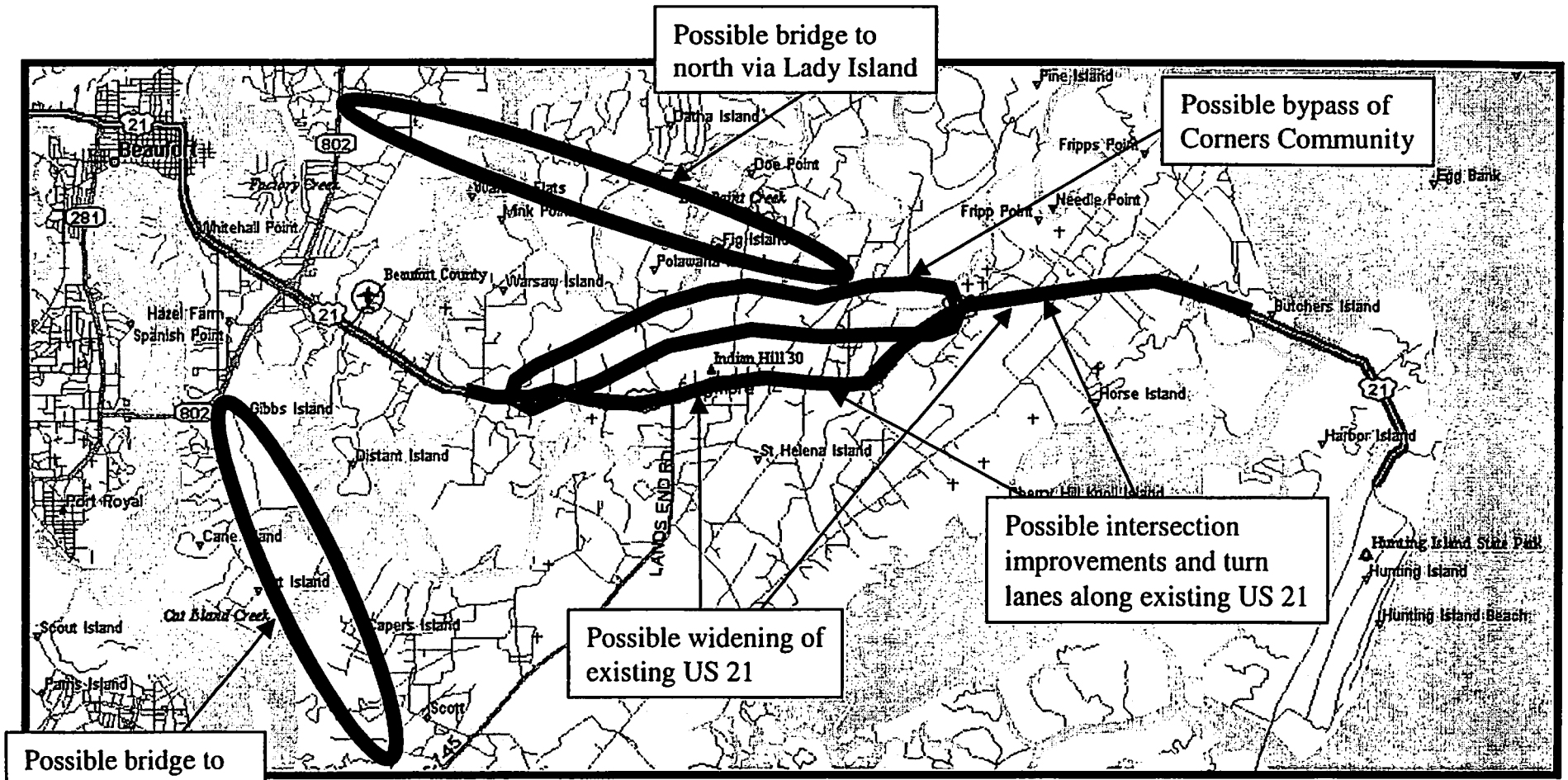
- Capacity deficiency of 4,000 to 14,000 vehicles per day between Post Office and Martin Luther King Jr. Drive
- Capacity deficiency of 2,000 to 12,000 vehicles per day on adjacent sections from Cowen Creek Bridge to Eddings Point Road

Travel On/Off St. Helena Island

Summary of Improvement Options To Increase Capacity

- **Turn Lanes and Intersection Improvements**
- **Widening of US 21**
- **Bypass of Corners Community**
- **New Bridge to St. Helena Island North or South of US 21**

St. Helena Island
Improvement Options to Increase Capacity



DWA
Day Wilburn Associates, Inc.

Options to Increase Capacity
Turn Lanes and Intersection Improvements

Characteristics

- Intersection improvements for vehicle and pedestrian operations (signalization, pedestrian refuge areas, crosswalks)
- Turning lanes at select intersections
- Landscaping/aesthetic treatments

Advantages

- Maintains two-lanes through Corners Community
- Improves safety at intersections
- Lower cost than other options
- Lower environmental impacts than other options

Disadvantages

- Increased traffic congestion along corridor
- Provides for existing traffic demands only
- Long-term volume increases reduce effectiveness of safety improvements
- Hurricane evacuation issues remain

Options to Increase Capacity
Widening of US 21

Characteristics

- Provide multi-lane section (four-lane divided or five-lane) through Corners Community
- Intersection improvements for vehicle and pedestrian operations (signalization, pedestrian refuge areas, crosswalks)
- Landscaping/aesthetic treatments

Advantages

- Improves safety along corridor
- Reduces traffic congestion along corridor
- Provides for future traffic demands
- Lower cost than options along new right-of-way
- Lower environmental impacts than options along new right-of-way
- Multi-lane section assists in hurricane evacuation

Disadvantages

- Multi-lane section through Corners Community is inconsistent with community character
- Access and through traffic needs are combined in Corners Community

Options to Increase Capacity
Bypass of Corners Community

Characteristics

- Provide two-lane bypass of Corners Community
- Control development along new alignment by purchase of development rights
- Intersection improvements for vehicle and pedestrian operations (signalization, pedestrian refuge areas, crosswalks)
- Landscaping/aesthetic treatments

Advantages

- Two-lane, lower volume section through Corners Community is consistent with community character
- Improves safety along corridor
- Reduces traffic congestion along corridor
- Provides for future traffic demands
- Multi-lane section assists in hurricane evacuation
- Access and through traffic needs are handled by separate facilities

Disadvantages

- Requires alignment along new right-of-way
- Environmental impacts are likely, but not as many as with new bridge options
- Possible stimulus for undesired commercial development along the corridor
- Potential reduction of business for established Corners Community businesses

Options to Increase Capacity
New Bridge to North or South

Characteristics

- Provide additional access to St. Helena Island (two-lane)
- Intersection improvements for vehicle and pedestrian operations (signalization, pedestrian refuge areas, crosswalks)
- Landscaping/aesthetic treatments

Advantages

- Two-lane, lower volume section through Corners Community is consistent with community character
- Improves safety along corridor
- Reduces traffic congestion along corridor
- Provides for future traffic demands
- Second bridge assists in hurricane evacuation

Disadvantages

- Requires alignment along new right-of-way
- Significant environmental impacts are likely
- Requires coordination with transportation planning on other islands
- Higher cost than other options
- Ties to US 21 must be done well to facilitate use

Summary of Draft Recommendations (Mid to Long-Term)

Construct bypass of corners community

- Provide three-lane section from Cowen Creek to beginning of bypass
- Provide two-lane bypass of Corners Community
- Control development along new alignment by purchase of development rights
- Provide gateways at intersections of Old US 21 and bypass with signage recognizing the historic and cultural significance of the Corners Community

Foster mixed-use development in appropriate areas

Provide bicycle facilities throughout corridor

US 21
Corridor Theme

US 21 Corridor Theme
Western Side of Corridor

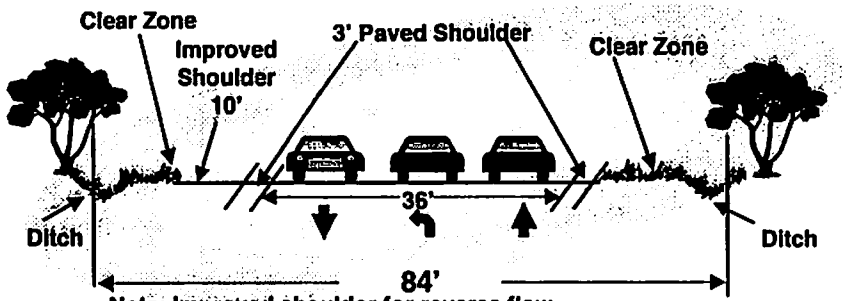
- Turn lanes to accommodate heavy movements and get turning vehicles out of traffic stream
- Capacity to accommodate existing and future traffic demand
- Traffic signals and pedestrian crossings to enhance access to and crossing of US 21
- Improvements amenable to the character of the Corners Community
- Landscape and aesthetic improvements
- Gateways to denote lower speed pedestrian area in Corners Community
- Pedestrian connections to and between community activity areas
- Bicycle connections through corridor

US 21 Corridor Theme
Eastern Side of Corridor

- Turn lanes and/or passing lanes to accommodate heavy movements and get turning vehicles out of traffic stream
- Capacity to accommodate existing and future traffic demand
- Landscape and aesthetic improvements
- Pedestrian connections to and between community activity areas
- Bicycle connections through corridor

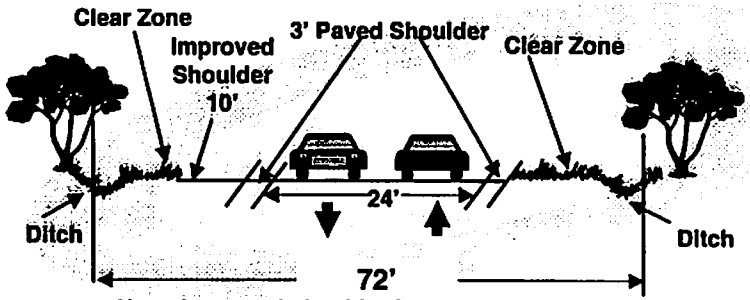
Potential Roadway Cross-Section

Section A1
Potential Roadway Rural Section
Intersection Approach with Left Turn Lane



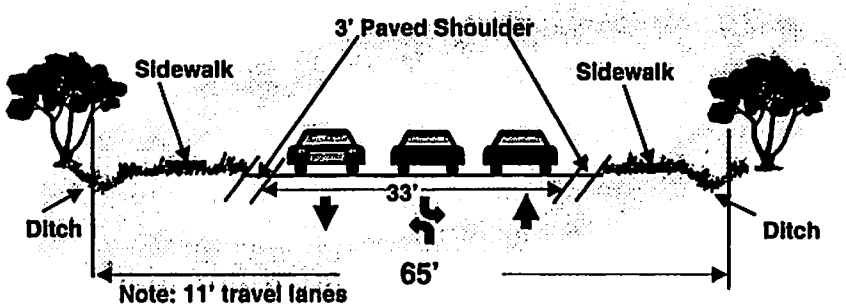
Note: Improved shoulder for reverse flow during hurricane evacuation

Section A2
Potential Roadway Rural Section



Note: Improved shoulder for reverse flow during hurricane evacuation

Section B
Potential Roadway Rural Section
3-Lane Section with Two-Way Left Turn Lane

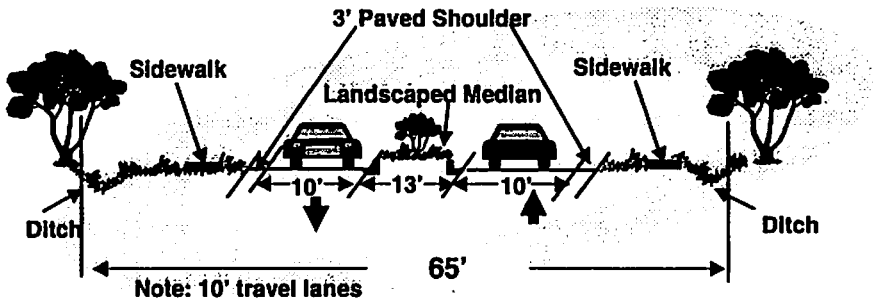


Note: 11' travel lanes

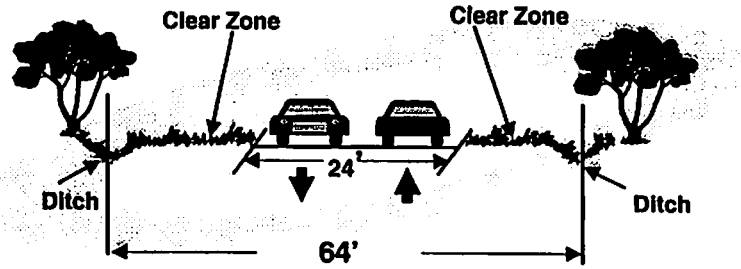
DWA
Day Wilburn Associates, Inc.

Potential Roadway Cross-Section

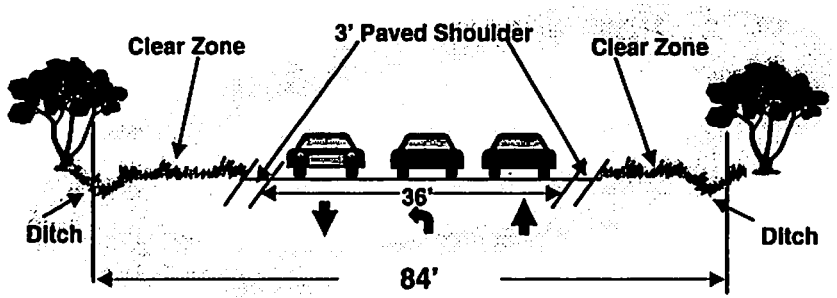
Section C
Potential Roadway Rural Section
Gateway with Sidewalks and Aesthetic Median Treatment



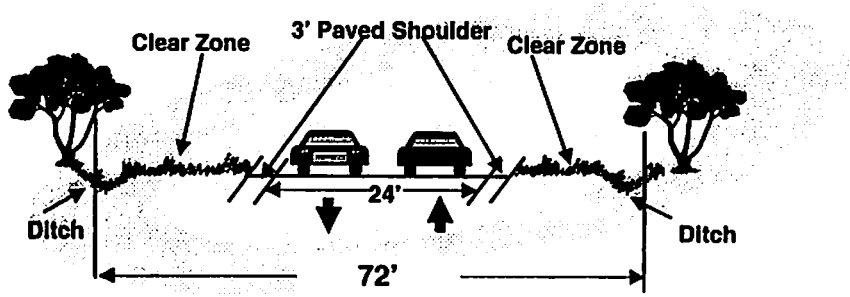
Section D
Potential Roadway Rural Section



Section E1
Potential Roadway Rural Section
Intersection Approach with Left Turn Lane

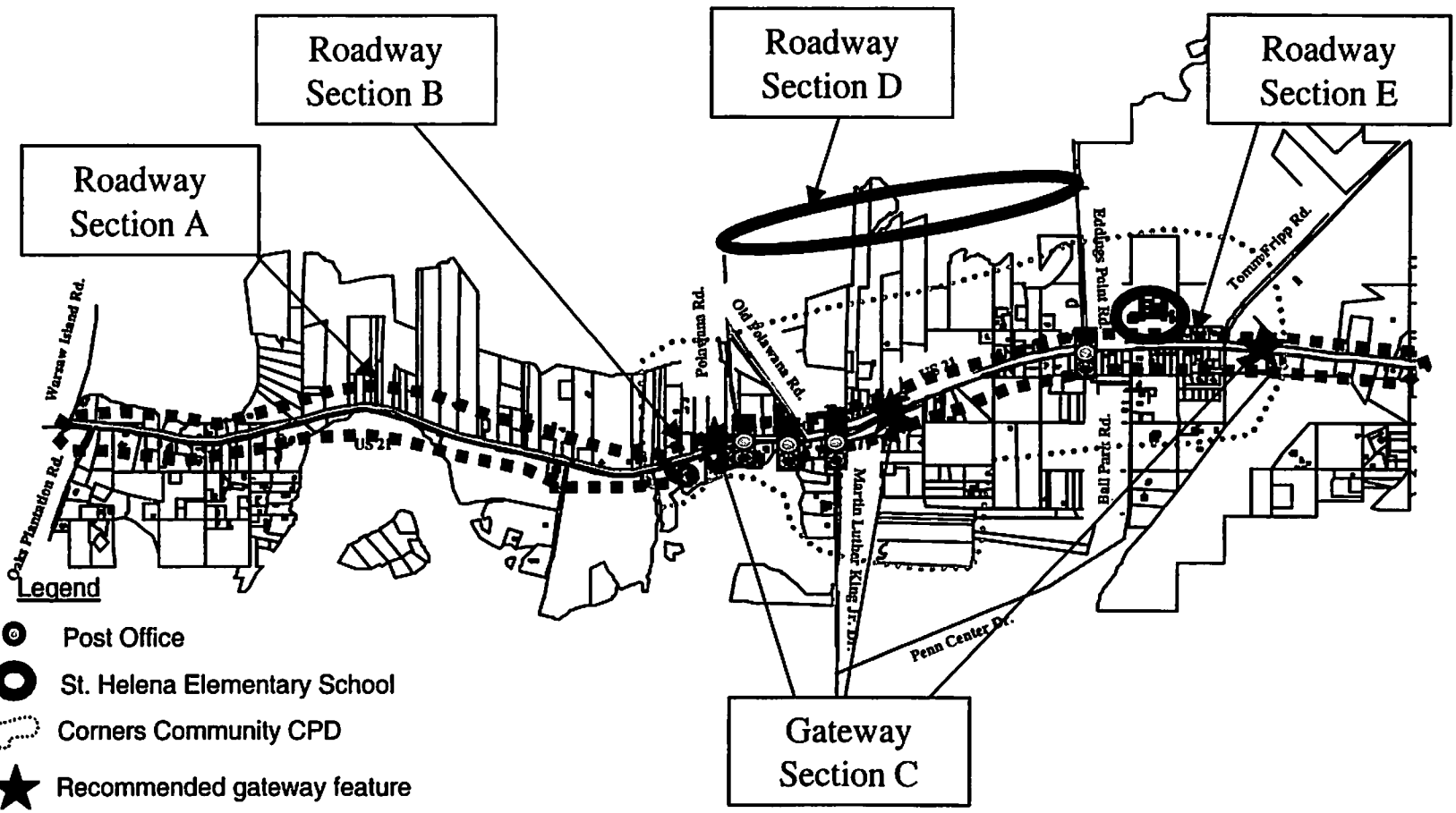


Section E2
Potential Roadway Rural Section



DWA
Day Wilburn Associates, Inc.

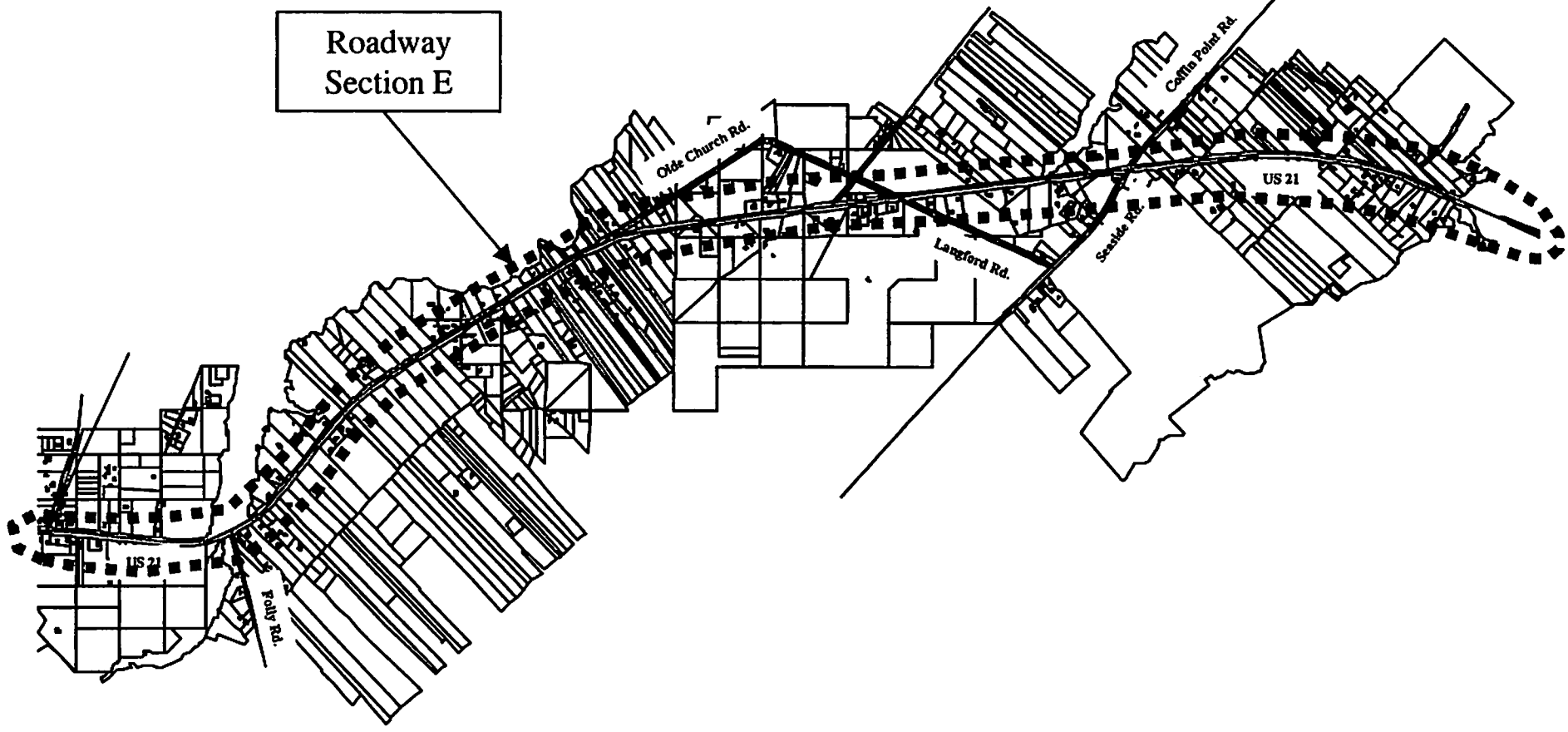
Draft Cross-Section Recommendations
Western Side of US 21 Study Corridor (Short-Term)



US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Draft Cross-Section Recommendations
Eastern Side of US 21 Study Corridor (Short-Term)

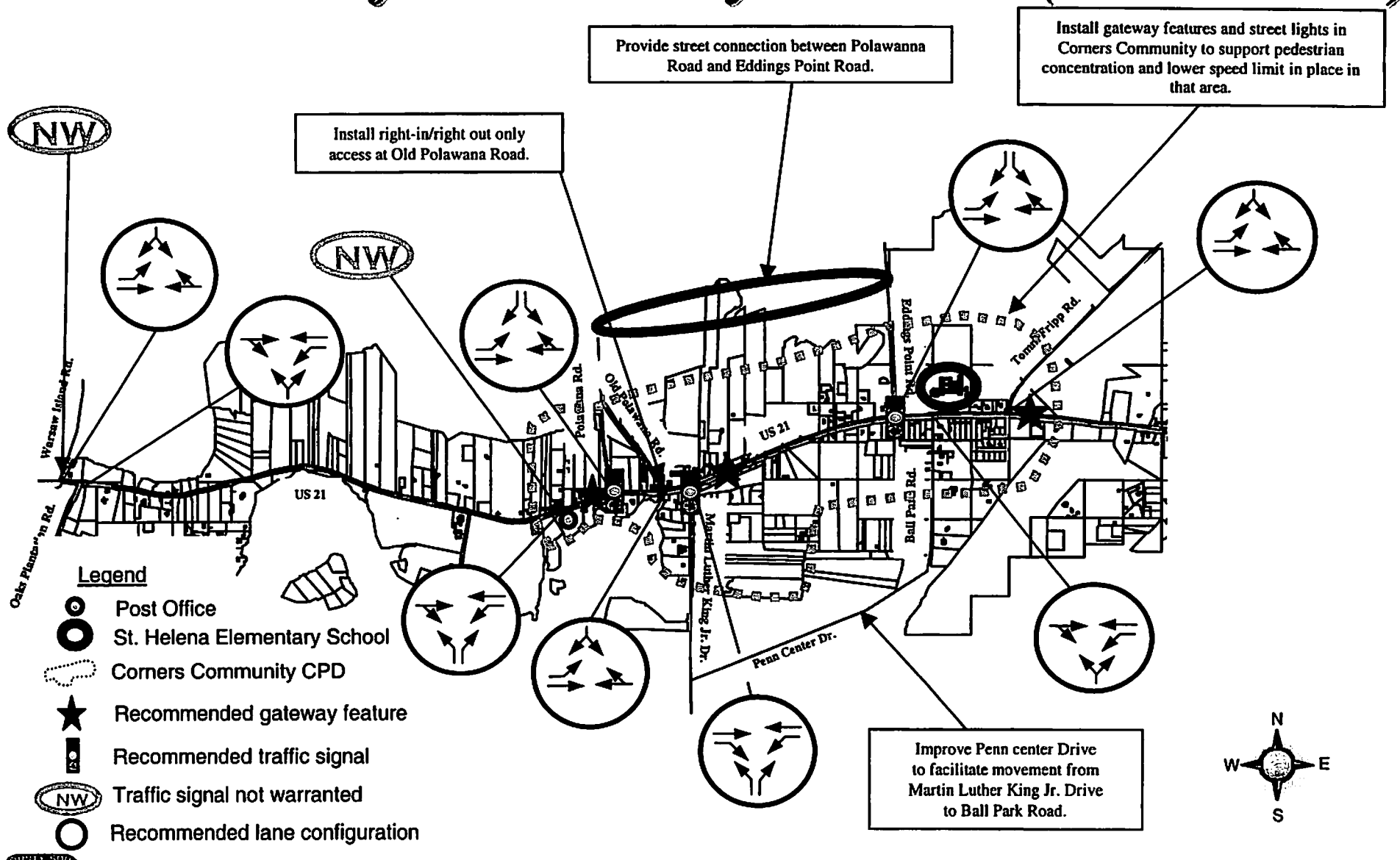




DWA
Day Wilburn Associates, Inc.

Corners Community Improvements

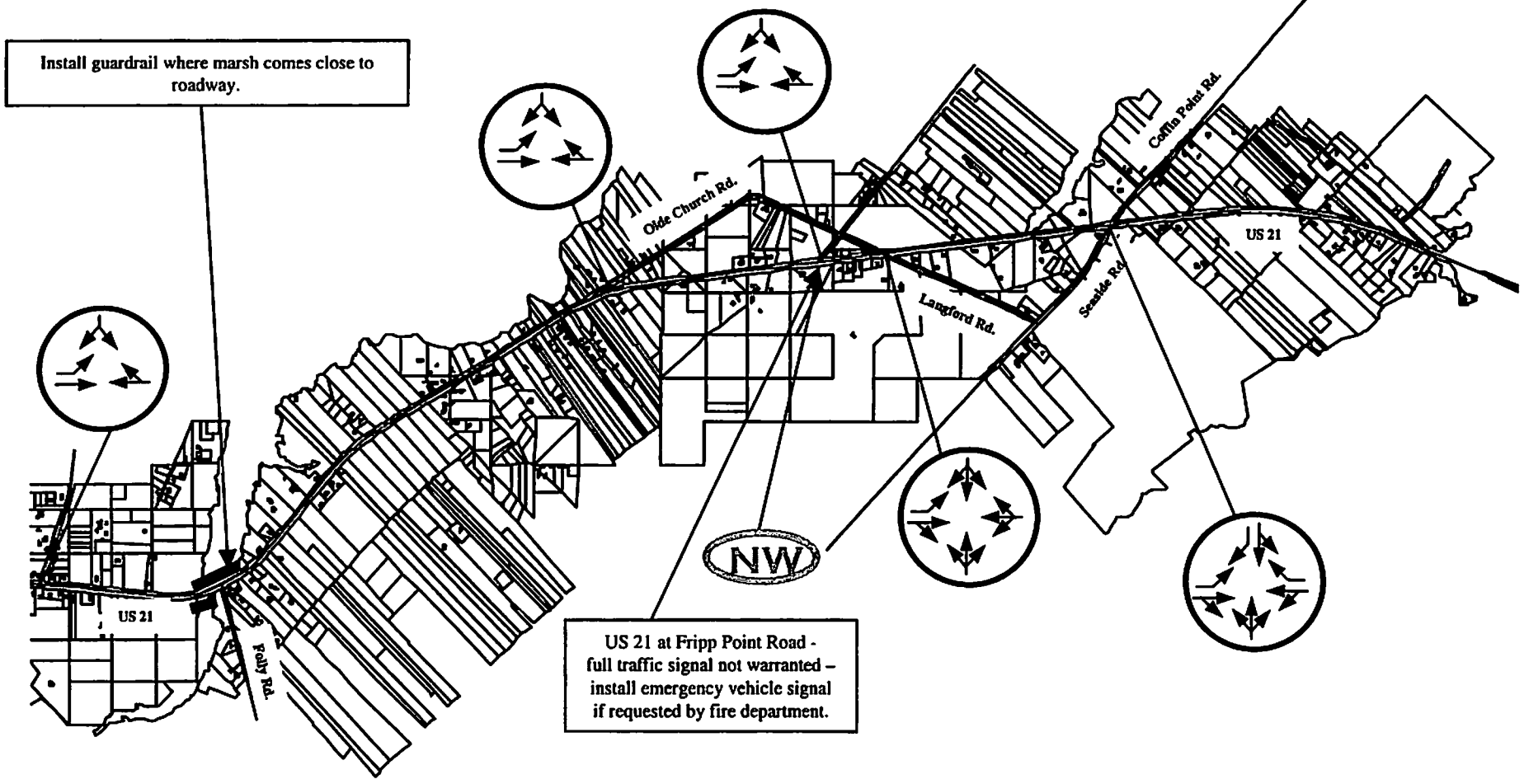
Draft Traffic Flow/Safety Recommendations
Western Side of US 21 Study Corridor (Short-Term)



US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Draft Traffic Flow/Safety Recommendations
Eastern Side of US 21 Study Corridor (Short-Term)



Legend

NW Traffic signal not warranted

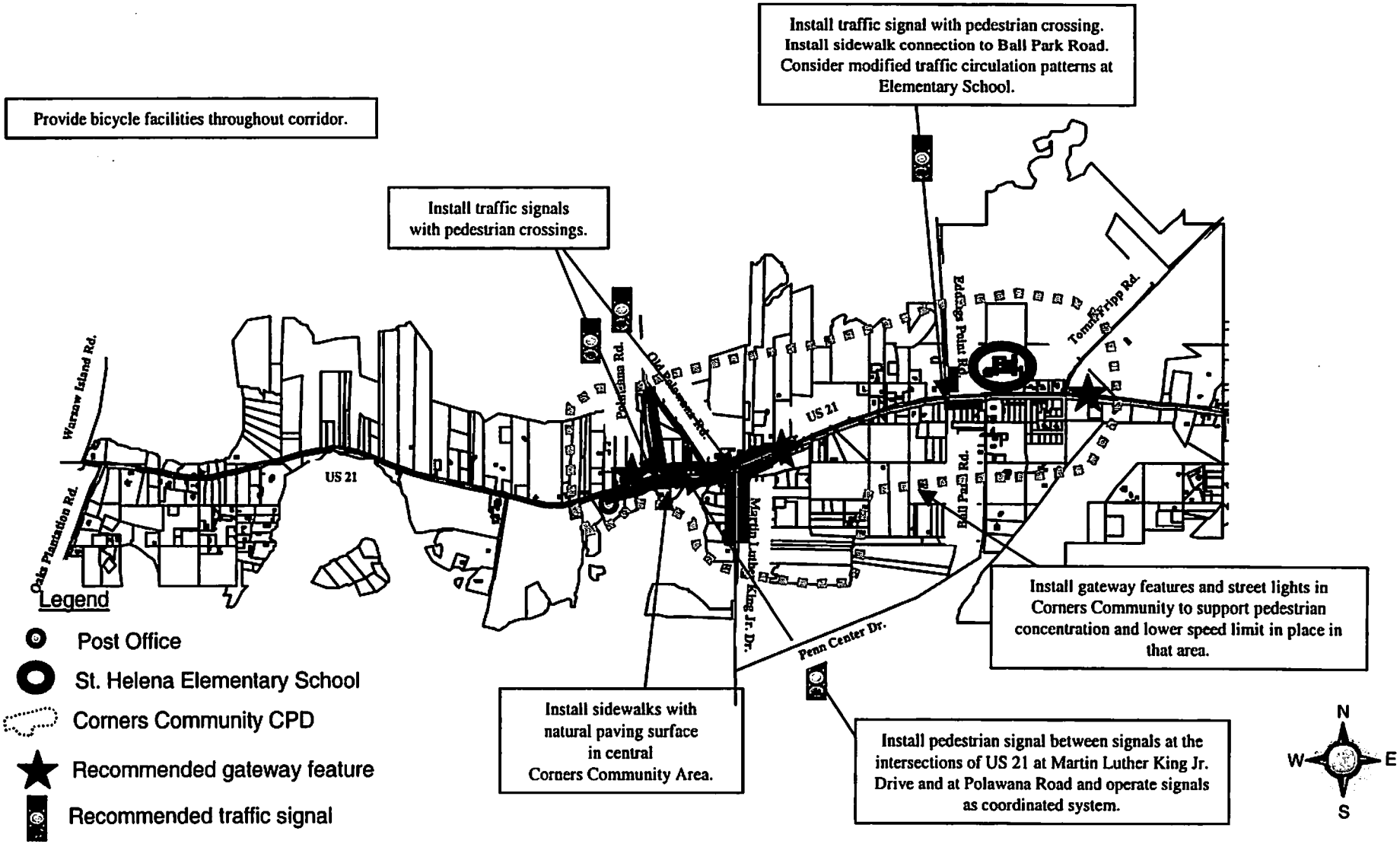
Recommended lane configuration

N
W E
S

US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Draft Pedestrian Recommendations
Western Side of US 21 Study Corridor (Short-Term)

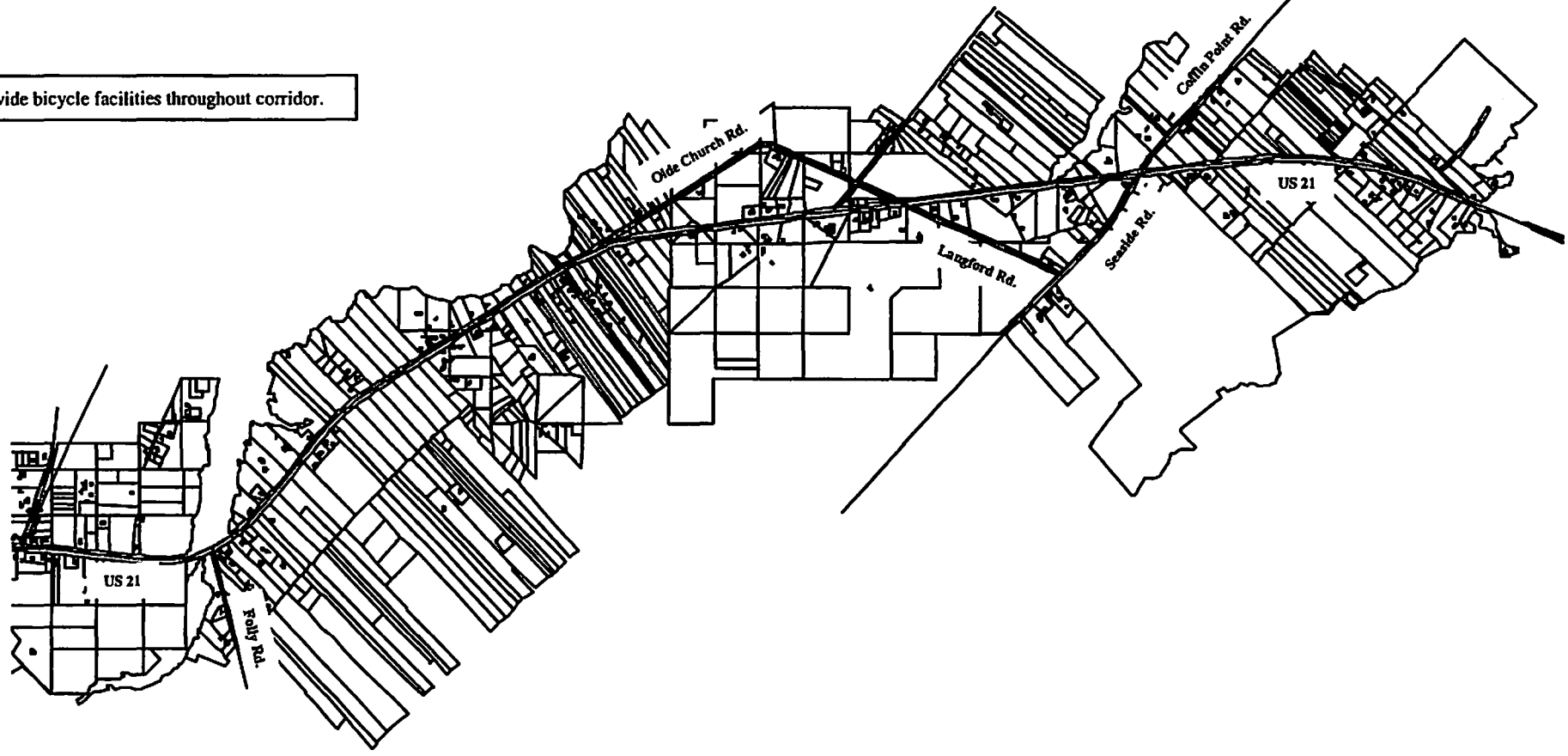


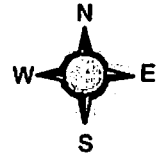
US 21 Corridor Analysis – St. Helena Island

DWA
Day Wilburn Associates, Inc.

Draft Pedestrian Recommendations
Eastern Side of US 21 Study Corridor (Short-Term)

Provide bicycle facilities throughout corridor.





US 21 Corridor Analysis – St. Helena Island

Day Wilburn Associates, Inc.

Summary of Draft Recommendations (Short to Mid-Term)

Provide turn lanes for movements to/from US 21 at various locations

Central Activity Area of Corners Community (Polawana Road to Martin Luther King Junior Drive)

- Install traffic signals with pedestrian crossing phases
  - US 21 at Polawana Road
  - Mid-block pedestrian crossing between Polawana Road and Old Polawana Road
  - Martin Luther King Junior Drive
- Provide three-lane section (two through lanes with a two-way left turn lane)
- Provide reduced lane width through Central Activity Area of Corners Community (11')
- Provide wide shoulder to facilitate bicycle use
- Allow right-in and right-out access only to Old Polawana Road from US 21
- Provide gateway features at each end of this activity area to indicate slower speeds and pedestrian orientation
- Provide sidewalks along US 21 in activity area and along Martin Luther King Jr. Drive and Polawana Road
- Provide street lights at signalized intersections and along pedestrian walkways

Summary of Draft Recommendations (Short to Mid-Term)

St. Helena Elementary School

- Install traffic signal with pedestrian crossing at Eddings Point Road
- Install sidewalk from Eddings Point Road to Ball Park Road
- Formalize school circulation pattern to include student drop offs via Eddings Point Road

Provide new/upgraded street connectivity parallel to US 21 for local trips

- North of US 21 between Polawana Road and Eddings Point Road
- South of US 21 along Penn Center Road from Martin Luther King Jr. Drive to Ball Park Road

Provide bicycle facilities throughout corridor

Traffic signalization needs were examined and signals were found not warranted at the following locations:

- US 21 at Warsaw Island Road
- US 21 at US Post Office
- US 21 at Fripp Point Road (install signal for emergency vehicles if desired by fire department)

US 21 Corridor Analysis on St. Helena Island
Design Guidelines

In conjunction with the recommended improvement concept approved by the Beaufort County Council for the US 21 corridor, design guidelines were developed to clarify specific design attributes intended for application along the corridor. The following paragraphs summarize these design guidelines for use in general roadway cross-sections, as well as specific applications along the corridor.

GENERAL CORRIDOR CROSS-SECTION:

The general corridor cross-sections recommended along US 21 include the following elements:

- Rural cross-section (no curb and gutter)
- Two 12' through travel lanes (one in each direction)
- Turn lanes (12') at intersections, where indicated
- A three foot paved shoulder on each side of the road
    - This shoulder would be provided on the outside of white edge line.
    - The additional width could be used to facilitate bike use in a share-the-road concept.
    - The extra pavement width could be applied to clear zone requirements.
- Clear zones based on AASHTO Roadside Design Guide (shown below for planning purposes only):
    - Clear zones based on Table 3.1
    - Assumed ADT > 6000
    - Assumed cross slope 6:1 or flatter
    - Speed = 55 mph (Clear zone = 24') - Sections A, E
    - Speed = 45 mph (Clear zone = 20') – Section D
    - Speed = 40 mph (Clear zone = 16') – Sections B, C

These general corridor cross-sections would apply to areas outside the Corners Community Preservation District (CPD).

IMPROVED SHOULDER FOR HURRICANE EVACUATION:

An improved shoulder is recommended for implementation on the south side of US 21 from Cowen Creek to Polawana Road to assist in hurricane evacuation. The improved shoulder would not necessarily need to be paved. However, it should be constructed to support loads anticipated for emergency vehicles operating during saturated soil conditions typical to hurricane evacuation.

US 21 Corridor Analysis on St. Helena Island
Design Guidelines

The improved shoulder would allow for the following operations during a hurricane evacuation:

- On two-lane section with improved shoulder
  - Two paved lanes westbound for evacuation
  - One shoulder lane eastbound for emergency vehicles to enter area
- On three-lane section from Martin Luther King Junior Drive to Polawana Road
  - Two paved lanes westbound for evacuation
  - One paved lane eastbound for emergency vehicles
- Emergency personnel would be needed at the intersections of US 21 at Polawana Road and at Martin Luther King Junior Drive.

To be effective, the improved shoulder would extend from the Cowen Creek Bridge to the three-lane cross-section west of Polawana Road.

CORNERS COMMUNITY ACTIVITY AREA:

The Corners Community Preservation District (CPD) extends along US 21 from west of Polawana Road to east of St. Helena Elementary School. This area serves a variety of businesses and the elementary school and contains intersections with major cross streets feeding US 21 including:

- Polawana Road
- Martin Luther King Junior Drive
- Eddings Point Road

The concentration of activity in this area, along with efforts by the CPD to strengthen this area as a destination and community, create the need for special treatment of this area to emphasize pedestrian activity and control vehicle speeds. These objectives are achieved through the pedestrian/bicycle facilities design, geometric design, and speed reduction measures identified below.

Pedestrian Facilities Design

Pedestrian movement is important to operation of the Corners Community activity area to allow nearby residents to access the area on foot and let residents and visitors walk between different establishments within the Corners Community. The pedestrian facilities recommended along the side of US 21 are vital to providing this circulation. The residents of the Corners Community have indicated that they prefer natural paving surfaces over concrete sidewalks and would prefer a rural section to curb and gutter. The natural paving surfaces could include textured concrete or an improved gravel or earth

US 21 Corridor Analysis on St. Helena Island
Design Guidelines

surface. The surface used should be compatible with Americans with Disabilities Act (ADA) requirements. Whatever surface is used, implementation of sidewalks is necessary to promote and service pedestrian movement in the activity area.

In addition to sidewalks along US 21, pedestrian crossings of US 21 are important to provide a connected activity area, while serving the heavy US 21 traffic demands. Therefore, the following pedestrian crossings are recommended:

- *Polawana Road signalized pedestrian crossing* – A pedestrian crossing is recommended in conjunction with signalization of this intersection. The crossing should be placed on the east side of the intersection to minimize conflicts with the heavy southbound right turn.
- *Martin Luther King Junior Drive signalized pedestrian crossing* - A pedestrian crossing is recommended in conjunction with signalization of this intersection. The crossing should be placed on the west side of the intersection to facilitate crossing of the primary pedestrian movements. To minimize conflicts with the heavy northbound left turn, an exclusive pedestrian signal phase is recommended.
- *Mid-block signalized pedestrian crossing* – A signalized mid-block crossing is recommended between Polawana Road and Martin Luther King Junior Drive near the intersection of US 21 at Old Polawana Road, which would be converted to right-turn-in and right-turn-out operation. This mid-block crossing will provide ample opportunities for pedestrian crossing and provide continuing indication to drivers of the pedestrian emphasis in this area. This pedestrian crossing traffic signal should be coordinated with the Polawana Road and Martin Luther King Junior Drive traffic signals.
- *Eddings Point Road signalized pedestrian crossing* - A pedestrian crossing is recommended in conjunction with signalization of this intersection. The crossing should be placed on the west side of the intersection to minimize conflicts with the heavy southbound right turn. A crossing guard should be stationed at the crosswalk during school start and end times. The signalized crossing should be accompanied by sidewalk along the south side of US 21, from Eddings Point Road to Ball Park Road, to provide access to residential areas to the south.

Bicycle Facilities Design

Three types of bicycle riders are present on St. Helena Island, the longer distance Type A cyclists and the shorter distance Type B and C cyclists. The recommendations below address these different cyclist types.

- *Type A cyclists* - The Type A cyclists are experienced riders who typically use the corridor for longer trips. A cycling group currently makes trips from Beaufort to Hunting Island along US 21. These cyclists are served by the recommended 3' paved shoulder on each side of US 21. This extra pavement width allows cyclists

US 21 Corridor Analysis on St. Helena Island
Design Guidelines

to share the road effectively with automobiles. In the central portion of the Corners Community, from Polawana Road to Martin Luther King Junior Drive, it may be necessary for Type A cyclists to share the road with automobiles where historic structures constrain available pavement width, precluding use of a paved shoulder.

- *Type B and C cyclists* – Type B and C cyclists are less experienced riders and those making short trips within the activity area. These cyclists are often local residents who use a bike to make trips within the community. They prefer off-road facilities for travel along or across high volume roads such as US 21. It is desirable to accommodate these cyclists along one side of US 21 in the Corners Community through a wider sidewalk section designated as a multi-use path.

Traffic Calming in the Corners Community

Supporting the efforts to pedestrianize the Corners Community, enhance access and provide safety requires slower travel speeds through the Corners Community. Changes to the speed limit in the area alone are not likely to cause large reductions in speed. Therefore, physical features are recommended in conjunction with a reduced speed limit (35 mph) to indicate the Corners Community as a lower speed zone. Due to the traffic volumes on US 21, these slower speeds must be achieved through treatments that do not cause a significant reduction in overall roadway capacity.

- *Gateways* – These features indicate to the driver that a change in roadway or roadside features is occurring, and thus, indicate the presence of the Corners Community. The physical design of the gateways minimize pavement width and provide 10' striped lanes with landscaped median and roadside treatments to produce a physical constriction intended to slow speeds. The particular design of the gateways should be coordinated with overall Corners Community preservation efforts. Three gateways are recommended along US 21 in the Corners Community CPD to introduce the area and reinforce the slow speed pedestrian oriented environment:
  - *West of Polawana Road*
  - *East of Martin Luther King Junior Drive*
  - *East of St. Helena Elementary School*
- *Reduced lane width* – Lanes throughout the Corners Community are recommended for reduced width (11') to encourage slower speeds.
- *Reduced speed limit* – A speed limit reduction to 35mph is recommended through the Corners Community CPD.
- *Pedestrian crossings* – Pedestrian crossings at three signalized intersections and one signalized mid-block crossing will reinforce the pedestrian oriented nature of the area. Coordination of the traffic signals and location of crosswalks only at signalized crossings allows the US 21 corridor to service heavy vehicular traffic flows.

US 21 Corridor Analysis on St. Helena Island
Design Guidelines

Geometric Design

In concert with the efforts to slow traffic in the Corners Community while maintaining traffic flow, various geometric design features may be needed to organize the use of the limited pavement width in this area.

- *Clear zones* - The presence of historic structures in the central Corners Community area places a limitation on available roadway width. Where necessary, reduced clear zones in proximity to these historic structures may be appropriate, provided the provisions for slowing traffic in the Corners Community are implemented.
- *Parallel parking* - Paved areas are present adjacent to some buildings in this central area. However, right-of-way width is constrained in some areas and the community is interested in minimizing the amount of pavement surface. Therefore, limiting on-street parking to parallel parking at select locations is recommended. Larger off-street parking lots should be striped and have access points defined so that angle parked vehicles do not back onto US 21.
- *Limited use of curb and gutter* – Implementation of large sections of curb and gutter is not favored by the community and would create significant cost in dealing with runoff water. However, limited use of curb and gutter sections may be appropriate where right-of-way limitations and historic structures require further definition of pedestrian areas.

Coordination With Ongoing Planning Efforts

Improvement of roadway facilities in the Corners Community should be performed in conjunction with ongoing efforts to provide aesthetic treatments along US 21 in the CPD. Coordination with the St. Helena Island Citizen's Advisory Committee and Beaufort County Planning efforts in the Corners Community Preservation District is needed as they plan area improvements with the Beaufort County Community Preservation Planner and consultants. Improvements in the Corners Community area should reflect the ultimate use of this area as a destination with the existing US 21 roadway as a collector/distributor.