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Executive Summary

US 21 is an important roadway for the Town of Mooresville (The Town) that serves as a gateway from the Interstate 77 corridor. As motorists travel north from I-77, the land uses transition from retail/office mixed use to low-density residential with pockets of low density retail and office in the vicinity of major intersections. Given the proximity of this corridor to the Lowe’s Home Improvement Corporate Headquarters, the Lake Norman Regional Hospital, the emerging Brawley School Road corridor, and Mooresville’s historic downtown, The Mooresville Planning Board recommended that a small area plan study be conducted to guide future development anticipated along the US 21 corridor.

The process to develop the US 21 Small Area Plan took approximately ten months. The steps involved included the inventory, analysis and synthesis of information pertaining to a variety of planning elements; meeting with Town representatives and others involved in the planning process; the facilitation of a series of public meetings; and, based on this collective information and input, preparing, finalizing, and adopting the US 21 Small Area Plan. Research and public participation were the keys to the success of the planning process. During this process, the Town simultaneously amended the Brawley School Road Small Area Plan to reference the inter-related elements of this plan.

An integrated plan was developed that included the following major policy recommendations:

- Future land use along the corridor should continue the quality and scale of the development in the vicinity of the interchange with I-77 that is primarily mixed use retail and office.

- The existing office uses and retail mixed-use development should be supplemented with an integration of single-family detached housing and multi-family residential land uses located in close proximity to US 21.

- Larger scale office and retail development should be clustered around the node at the intersections of US 21 and Brawley School Road/Wilson.

- Neighborhood-scale development should be clustered around the intersection of US 21 and Waterlynn Road, and generally in the segment of US 21 north of Wilson Avenue.

- Discretion should be given when reviewing development and rezoning requests in order to protect that natural environment and drinking water supply for this region per the applicable watershed restrictions.

- Redevelop existing mini-storage, strip centers, and automotive sales lots. Such uses are more intense and regional in nature and should not be located along the U.S. 21 Corridor.
U.S. 21 Small Area Plan

- New development to be oriented directly to streets and should be multi-story to integrate uses vertically.

- Development should integrate principles of urban design that allow for pedestrian and bicycle access, and multi-modal connections should be contemplated between proposed development and the multi-use trail proposed along the roadway.

- Transportation recommendations should coincide with future development to ensure an efficient, multi-modal transportation system.

The US 21 Small Area Plan is intended for use as a policy document to provide additional guidance to supplement the Mooresville Comprehensive Land Use Plan when the Town receives future requests for development approval within the designated area.

Planning staff recommends the Town of Mooresville Board of Commissioners adopt this plan and related recommendations herein (see Chapter 2: Recommendations and Implementation Strategies).
**U.S. 21 Small Area Plan**

**Organization of this Report**

*Chapter 1:* The Introduction provides a background of this effort along with guiding principles, set early in the planning process with input from the community. The guiding principles were established to serve as a roadmap to follow throughout the planning process.

*Chapter 2:* The Recommendations and Implementation Strategies describes in detail the results of the plan process in the form of specific recommendations and implementation strategies for the U.S. 21 Corridor Study formulated by the Town Planning Department at the conclusion of the plan process. An *Index of Base Zoning Districts* provides further description of the zoning categories found in Chapter 2. Information on timing and individuals responsible for implementation is found in the *Appendices*.

*Chapter 3:* The Existing conditions, opportunities, and constraints describe in detail the existing demographics, transportation and land use patterns along the corridor. From the existing conditions analysis, issues and opportunities for the corridors were identified. The results of the existing conditions analysis were coupled with potential opportunities for the corridor and presented to the public through a series of community work sessions.

*Maps* are provided as a reference and accompany recommendations and implementation strategies in Chapter 2 and in the appendices. This is the supporting documentation prepared during the process. This additional documentation includes materials used to develop the plan and formulate recommendations.

*Appendices* found at the end of the report include the process to prepare the plan, supporting transportation documentation, and maps. Also included is a matrix with information on timing and individuals responsible for implementation.
Chapter 1: Introduction

1.1 Introduction

The U.S. 21 Small Area Plan, Phase I covers 600.5 acres along a 2.6 mile segment of U.S. 21 from Exit 33 interchange with I-77 north to NC Hwy 150. Approximately 60 percent of the study area is within the Town corporate limits with the remaining 40 percent of the study area within the town’s ETJ (Extraterritorial Jurisdiction). This is the first of three proposed Small Area Plans for the U.S. 21 Corridor. Subsequent corridor segments will include Phase 2 from NC Hwy 150 to the U.S. 21 / NC Hwy. 115 intersection and Phase 3 from the U.S. 21 / NC Hwy. 115 intersection to the annexation boundary with Troutman.

The study area is divided into three segments. The first segment, “Section A” extends north from the Exit 33 interchange along the corridor to the intersection of US 21 and Waterlynn Rd. The second segment, “Section B” extends north from Waterlynn Rd. to the intersection of US 21 with Brawley School Rd. / W. Wilson Avenue. The final segment “Section C” extends north from this intersection to the NC Hwy 150 interchange. The study area is illustrated on page 7.

Anticipated impacts associated with the Brawley School Road interchange, along with growth of Lowes Home Improvements Corporate Headquarters, and development associated with the Exit 33 interchange has warranted the need for a small area plan along US 21. Together, the U.S. 21 Corridor Small Area Plan and the Brawley School Road Small Area Plan provides a greater emphasis on the business node located at the intersection of U.S. 21 and Wilson Avenue/Brawley School Road. The continued expansion of the Lowe’s Home Improvements Corporate Campus, anticipated development around the Exit 33 interchange along Alcove Rd., and the interchange at I-77 and Brawley School Road that is currently under construction, will bring significant traffic impacts to this corridor. The Mooresville Comprehensive Land Use Plan and Comprehensive Transportation Plan have anticipated this growth and provide general guidance.

1.2 History

The Town of Mooresville, with a 2009 estimated population of 30,797 is located approximately 15 miles north of Charlotte in south Iredell County, in the southwestern piedmont of North Carolina.

Mooresville is located near the rapidly growing Charlotte Metro area. Much of this growth is due to convenient accessibility to I-77, a diverse and expanding employment base, excellent
**U.S. 21 Small Area Plan**

area schools, proximity to Lake Norman, and the region’s high quality of life. By 2013, overall population is expected to increase to 32,285 or more with an overall estimated future population projection of 130,000 by 2030\(^1\).

U.S. 21 was created as part of the Federal Aid Highway Act of 1925, and was one of the only highways that traversed the Appalachian Mountains between Cleveland, Ohio and Yemassee, South Carolina. After the completion of Interstate 77, U.S. 21 was shortened to its current length of 395 miles from Wytheville, Virginia to Yemassee, South Carolina. For much of its length, U.S. 21 runs parallel with I-77\(^2\).

In the North Mecklenburg/South Iredell Area, NC 115 was a farm-to-market road that connected the outlying rural agricultural areas with the towns within this area and to Charlotte. When U.S. 21 was constructed in this area, the intention was to create a regional road that bypassed many of the downtowns in the area. The U.S. 21 corridor was the original alignment for I-77 through the Mooresville area; however, a different interstate right-of-way alignment was purchased and subsequently I-77 was constructed and completed west of the current U.S. 21 corridor. The U.S. 21 corridor retains a wider right-of-way originally for an interstate highway corridor which can facilitate future widening of the corridor.

Today, the Exit 33 interchange (I-77 and U.S. 21) serves as the gateway to Mooresville’s historic downtown and the Brawley School Rd. peninsula, the route of choice for many drivers traveling to the unincorporated areas of Iredell County between Mooresville and Exit 42 as well as those traveling east on Hwy 150, and a local alternative to I-77. Once the Brawley School Road/I-77 interchange is completed in 2013, U.S. 21 will remain an alternate access to Brawley School Road, and will most likely remain the route of choice for those traveling to the unincorporated areas north of Mooresville and east into Rowan County.

### 1.3 Guiding Principals

Below are guiding principles, set early in the planning process with input from the community, which describe in more detail the purpose of the U.S. 21 Small Area Plan.

**General Guiding Principles**

- Provide plan to guide future policy, growth, and development along the corridor.
- Provide specific guidance in a manner that is consistent with adopted plans and ensure coordination with concurrent planning activities.
- Involve affected stakeholders.
- Provide specific guidance and continue to build upon guiding principles and recommendations of the Comprehensive Transportation Plan (CTP) and Comprehensive Land Use Plan.
- Incorporate transit-supportive design and development form.

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\(^1\) Brawley School Road Small Area Plan, Adopted by the Town of Mooresville Board of Commissioners, 4 May 2009

Ensure that nonresidential uses within the study area should be office and employment uses along with associated support services or retail uses to surrounding communities and neighborhoods.

Ensure development form is urban in both form and scale and supportive of future multimodal transit and transportation services. Development within the nodes should also be pedestrian oriented.

Specific Guiding Principles

- Identify a mix of land uses along the corridor that are consistent with an identified community vision.
- Emphasize design and urban form of future development.
- Consider strategies for potential redevelopment opportunities.
- Promote an interconnected transportation system, which builds upon the Brawley School Road widening project and the planned interchange with I-77 (R-3833), and promote improved safety at identified areas of concern.
- Create land development strategies that promote the use of alternate travel modes including pedestrian, bicycles and public transportation via development design standards and public infrastructure, especially safe routes to schools and at major intersections.
- Identify a system of shared open spaces and recreation opportunities including connections to the Carolina Thread Trail and other regional greenway / trail initiatives including the Lake Norman Regional Bike Trail.
- Buildings should be oriented directly to streets and should be multi-story to integrate uses vertically. Although such building relationships are critical to the built development form of the corridor, buildings within designated neighborhood centers as identified in the Comprehensive Land Use Plan such as at the US 21 intersection with Brawley School Road, should be close to the street edge while buildings along the corridor should have a more relaxed setback condition. Such setback treatments will create strong visual cues for these neighborhood centers as focal point destinations.
- Surface parking shall be to the side or rear of buildings or structures.
Chapter 2: Recommendations and Implementation Strategies

Overview

2.1 General

Recommendation – 1. The Town of Mooresville shall adopt and incorporate by reference the US 21 Corridor Small Area Plan into the currently adopted Comprehensive Land Use Plan as referenced in Chapter 1, Sect. 1.2 of the Comprehensive Land Use Plan.

Recommendation – 2. “Big Box” highway-oriented retail uses generally associated with the NC 150 corridor Activity Center as identified in the Town of Mooresville Comprehensive Land Use Plan should be prohibited within the study area.

Strategy 1: Community/neighborhood-oriented service uses should be allowed such as pharmacy, grocery, restaurant, day care, hardware, banking services, medical office, dry-cleaners, etc.

Strategy 2: Uses that should be prohibited - large or medium sized, destination-oriented retail uses; free standing fast food restaurants with drive-through uses, automotive sales and services. This does not exclude such uses as pharmacies or grocery stores that deliver services to the surrounding communities and neighborhoods.

2.2 Land Use and Urban Design - General

Recommendation – 1. The table on the next page should be used to support rezoning requests for parcels within the study area to base zoning districts shown. In order to understand how to best achieve each land use type depicted in the Small Area Plan, a detailed assessment of the land use designations on the adopted Comprehensive Land Use Map and base zoning districts was conducted. Consideration should be given to the location, scale, and mix of uses associated with the Study Area, particularly with regard to recommended land use categories. The results are shown in the table on page 9. Refer to Mooresville Zoning Ordinance Chapter 3.2 (Base Zoning Districts).
Table 2.2.1 Land Use Designations

<table>
<thead>
<tr>
<th>Small Area Plan Land Use Categories</th>
<th>Land Use Plan General Planning Areas</th>
<th>Base Zoning Districts*</th>
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</thead>
<tbody>
<tr>
<td>SF Residential - Detached</td>
<td>NR</td>
<td>R-2, R-3, R-5, RMX</td>
</tr>
<tr>
<td>SF Residential - Attached</td>
<td>NR</td>
<td>R-5, RMX, NMX</td>
</tr>
<tr>
<td>SF Residential - Transitional</td>
<td>CMU</td>
<td>NMX, CMX</td>
</tr>
<tr>
<td>Multifamily Residential</td>
<td>NR</td>
<td>R-5, RMX, CMX</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>CMU</td>
<td>CMX, NMX</td>
</tr>
<tr>
<td>Retail/Service/Hospitality</td>
<td>CMU, VC</td>
<td>CMX</td>
</tr>
<tr>
<td>Retail &amp; Office</td>
<td>CMU</td>
<td>CMX</td>
</tr>
<tr>
<td>Office Campus</td>
<td>EC-O</td>
<td>PC-C</td>
</tr>
<tr>
<td>Office Flex</td>
<td>EC-F</td>
<td>GI, PC-C</td>
</tr>
<tr>
<td>Light Industrial/Flex</td>
<td>EC-F</td>
<td>GI, PC-C</td>
</tr>
<tr>
<td>Civic/Institutional</td>
<td>Any</td>
<td>Any</td>
</tr>
<tr>
<td>Open Space &amp; Parks</td>
<td>Any</td>
<td>Any</td>
</tr>
</tbody>
</table>

Notes: *The study area is in the Lake Norman/Catawba WSIV Watershed Protection Overlay.

** Refer to index found at the end of this section. This terminology is further defined in the Comprehensive Land Use Plan and Mooresville Zoning Ordinance.

** Recommendation - 2 Utilize the U.S. 21 Corridor Small Area Plan to encourage a higher density pattern of development than currently exists. This is particularly appropriate for any undeveloped or underutilized parcels anywhere in the study area where infrastructure and services exist, or can easily be provided. This includes sites that have a high potential for redevelopment or adaptive reuse. This does not include those areas designated on the plan for single-family detached residential.

** Strategy 1: Encourage small lot residential development and attached (ex: townhome) residential in appropriate locations such as areas designated on the plan for single-family attached residential.

** Strategy 2: Support rezoning requests for higher density development consistent with the plan.

** Strategy 3: A minimum non-residential building height of 2 stories.

** Strategy 4: Increase densities of land uses in activity centers:
   o “Vertically mixing” retail below office or other uses is permissible.

** Strategy 5: Review the zoning ordinance and consider adopting enhanced standards to support transit use. Encourage more robust street cross sections as indicated in the small area plan. Allow on-street parking on local streets.

** Strategy 6: Promote additional Employment along the corridor.
**U.S. 21 Small Area Plan**

**Recommendation - 3** Strengthen designated activity centers as denoted on the Comprehensive Land Use Plan, including the Business Center at U.S. 21 and W. Medical Park Blvd, and the planned Neighborhood Center at U.S. 21 and W. Wilson Ave.

**Strategy:** Direct commercial and employment uses toward activity centers by supporting zoning requests that place these uses within designated activity centers.

**Recommendation – 4** Development form should be urban in both form and scale and supportive of future multimodal transit and transportation services, and pedestrian oriented within the designated nodes.

**Strategy 1:** The dominant non-residential uses within the study area should be office and employment uses with associated supporting services.

**Strategy 2:** Non-residential retail uses should provide services to surrounding Communities and neighborhoods or support professional office or employment uses.

**Strategy 3:** Buildings should be oriented directly to streets and should be multi-story to integrate uses vertically.

**Strategy 4:** Surface parking should be to the side or rear of buildings or structured
2.2.1 Land Use and Urban Design – Section A

Recommendation -1 Ensure an adequate buffer exists along the existing I-77 corridor to mitigate impacts to future development.

Strategy: Enforce landscape standards that provide an adequate buffer along the existing I-77 corridor (Mooresville Zoning Ordinance Chapter 7 Landscaping and Open Space). Review and updating the landscape standards to encourage the 50-foot perimeter buffer as measured from the edge of right-of-way remains undisturbed (i.e., limit clearing) or preserved to an adequate standard.

Recommendation – 2 Continue the building form found in both Gateway and Mount Mourne Springs with mixed retail / office uses north along U.S. 21 to just past Waterlynn Road at nodes.

Strategy: Support rezoning request for commercial mixed use or multi-family developments.

Recommendation – 3 Identify the intersection of U.S. 21 and Waterlynn Road as a Neighborhood Center.

Strategy: This area is ideal for a Neighborhood Center coinciding with the new development of Waterlynn subdivision, Waterlynn Ridge Apartments, Cypress Landing, and the proposed Ashlynn Ridge development. Continue to advance and ensure the recommendation is consistent with the adopted Mount Mourne Plan for creating a Neighborhood Center at this location.

Recommendation – 4 Enable new medium to high density multi-family or corporate campus along Waterlynn Road at strategic locations in proximity to supporting services.

Strategy: Support rezoning of the property for multi-family or a corporate campus. This property has both frontage conditions along Waterlynn Road and Lake Norman. Because of its proximity to I-77, this property is less likely to be considered for a single family detached residential development; however, may be conducive to support corporate headquarters, office, and multi-family development or a mix of such uses.
Recommendation – 5 Big box or scattered site retail along this section of the corridor should not be allowed.

**Strategy:** Retail uses should only be located in activity centers and should be compatible with mixed use development and pedestrian in scale.

### 2.2.2 Land Use and Urban Design – Section B

**Recommendation – 1** Limit the number of high density residential developments approved for this section of the corridor.

**Strategy:** With the exception of undeveloped parcels located near Wilson Avenue there are no more large tracts of land that could support multi-family residential development. It is recommended that the Town not support additional rezoning request for medium to high density residential along this section of U.S. 21.

**Recommendation -2** Transition existing single family detached residential into office and service uses.

**Strategy:** Support change of use request and rezoning request for non-residential uses that will utilize existing single family homes for office and services uses especially those properties that have frontage along the corridor. When these properties redevelop, it is recommended that they utilize the storefront building form and vertically mixing uses.

**Recommendation -3** Build on to the Neighborhood Center Node located at U.S. 21 and Wilson Ave. as indicated in the Comprehensive Land Use Plan (CLUP).

**Strategy:** Most of this intersection is built out at present with the exception of the southeast quadrant. It is recommended that any realignment of the golf course comply with the Golf Course Master Plan. The Town should develop a conceptual plan for this quadrant of the intersection that compliments the development directly across U.S. 21. The same should be considered for the 26 acre property located in the northwest quadrant.
2.2.3 Land Use and Urban Design – Section C

**Recommendation – 1** Redevelop mini-storage and automotive sales lots. This section of the corridor is conducive to neighborhood services. Large mini-storage facilities and automotive sales lots are more regional in nature and character.

**Strategy 1:** The Town may consider adopting an overlay for this section of the study area that eliminates certain uses currently allowed in the HB zoning district and assign specific building forms and parking locations to this section.

**Strategy 2:** Utilize the current design standards and parking regulations in the Mooresville zoning ordinance and review periodically for possible needed amendments

**Strategy 3:** Redevelopment with in this section of the corridor should use the shopfront, workplace, and commercial / retail building forms and should not exceed 45,000 sq. ft.

**Recommendation -2** Redevelop Dry Dock Loop. This area of Section C currently supports a mix of residential uses with a mobile home park on the southern section.

**Strategy 1:** This property should be zoned to support office and service oriented to the corridor with the interior supporting high density residential.

**Strategy 2:** Evaluate a possible connection of McLeod Road to Dry Dock Loop once redevelopment has occurred in the area. At this time, staff shall coordinate with NCDOT and local stakeholders to ensure that there is merit to this roadway connection

**2.3 Transportation**

**Recommendation – 1.** The U.S. 21 corridor is identified as a proposed boulevard in the Mooresville CTP. It is recommended that this corridor is widened to a 4-lane divided roadway, with a landscaped median, and a multi-use trail along one side of the roadway.
**U.S. 21 Small Area Plan**

**Recommendation – 2.** Continue to preserve the un-used right-of-way along the U.S. 21 corridor to account for an expanded roadway cross-section in the future.

**Strategy:** Establish a transitional right-of-way along the U.S. 21 corridor as a condition of its adoption by the Town and/or NCDOT. Dedication of right-of-way shall be coordinated with NCDOT. The proposed cross sections below illustrate the proposed roadway alignments based upon available right-of-way and projected 2030 traffic volumes.

![U.S. 21 Proposed Cross Section "A" I-77 to Medical Park Drive](image1)

![U.S. 21 Proposed Cross Section "A" Medical Park Drive to Waterlynn Road](image2)
Figure 2.6

Figure 2.7
Recommendation – 3. Construct Brawley School Road as a 4-lane divided roadway, with a landscaped median, bicycle lanes, and sidewalks along each side of the roadway.

Strategy: Recommend the appropriation of construction funds for the Brawley School Road widening project – Phase C, from Talbert Road to US 21 through the NCDOT Transportation Improvement Project (TIP) process administered by the Lake Norman Regional Planning Organization (RPO). Currently, Section C of the Brawley School Road project is an unfunded construction project.

Recommendation – 4. Coordinate the location of future median crossovers with consolidated driveway access points as a result of the redevelopment of future anticipated land uses through the driveway permit process with NCDOT. The NCDOT driveway permit process will determine the most appropriate locations for new access points, median crossovers, and the need for turn lanes. The Town and NCDOT shall collaborate regularly on the driveway permitting process to ensure that the most appropriate access management standards are considered for the corridor.

Recommendation – 5. Continue to reserve right-of-way in the vicinity of the intersection of U.S. 21 and Brawley School Road/Wilson Avenue for intersection improvements such as dedicated turning lanes in each approach of the intersection. Consideration should be given to pedestrians and bicyclists in the design of this intersection in future, with refuge islands and dedicated signals for multi-use trail crossings. A plan-view example of the potential intersection design is depicted below.

Recommendation – 6. Construct a network of through, collector streets as redevelopment occurs to serve as an alternative to the corridor and provide adequate access to parcels that are adjacent to the corridor.
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Recommendation - 7. Construct a new minor thoroughfare roadway between U.S. 21 and NC 115. An alignment feasibility study should be completed to determine the feasibility of constructing an extension of the existing Timber Road or Four Square Lane. The extension of Timber Road is recognized as a proposed connection in the Mooresville Comprehensive Transportation Plan (CTP).

2.4 Cultural and Historic Resources

Recommendation -1. Preserve institutional and religious uses given their cultural importance and contribution to character of the community

2.5 Natural Resources, Open Space, and Parks & Recreation

Recommendation -1. Revise existing storm water regulations / zoning overlay districts to increase pollutant removal through buffers.

Strategy: Increase existing riparian buffer requirements for both high and low density development options within the study areas. All parcels within the study area would be subject to the buffer requirements.

- Consider strengthening minimum vegetation requirement for buffers in the zoning ordinance. If the existing buffer area does not meet the requirements, the developer would have to plant the buffer to meet the standards.

Recommendation -2. Revise existing storm water regulations to promote development and redevelopment in the study areas.

Strategy: Consider implementing Phase II NPDES requirements.

Recommendation -3. In order to continue unified development that sets aside contiguous areas of open space, the Town will work with the State to allow contiguous parcels in the small area plan to submit as a single project site for satisfying WS-IV Watershed impervious area requirements. Unified development is important because the clustering of buildings allows a strong relationship between the built environments and provides an interconnected open space system between multiple development sites in an area and allows for the potential for a regional / shared BMP approach. This relationship can be difficult to achieve when a series of different projects are each meeting individual, site specific environmental requirements on what are contiguous parcels of land.
U.S. 21 Small Area Plan

Strategy: Requests for projects in the small area plan will be reviewed on a case-by-case basis and be subject to the following:

- The adjoining land designated as open space should be protected by deed restrictions and protective covenants.
- Compliance with ownership and dedication requirements for open space set asides in the zoning ordinance should be verified by Town staff (Mooresville Zoning Ordinance Chapter 7 Landscaping and Open Space).

Recommendation -4. Provide interconnected pedestrian and bicycle facilities throughout the corridor.

Strategy 1: Require commercial centers to develop trails and greenway connections as an integral part of the development if impacted by the Greenway Master Plan. Review of consistency with adopted plans is required. Commercial developments shall incorporate bicycle friendly elements such as adequate bicycle racks, and lockers in convenient location.

Strategy 2: Seek easements across existing developed parcels within which the Town can construct trail, parks and open spaces.

Strategy 3: Provide bicycle and pedestrian connections to adjacent uses from all retail centers.

Strategy 4: Provide for safe pedestrian facilities along the corridor, including but not limited to 5’ wide sidewalks, a multi-purpose path, crosswalks, pedestrian signals and appropriate signage.

Recommendation -5. Provide access to Lake Norman via small pocket parks (both public and private) along the water’s edge. These can provide a visual public connection to the water’s edge and various passive recreation opportunities.

Recommendation -6. Develop parks and open space within proposed office, commercial and residential developments.

Strategy 1: Amend the Zoning Ordinance to require park land in all new development that is easily accessible to the public.

Strategy 2: Develop linear passive recreation parks that include or link to greenway trails to connect both existing and proposed developments.
**Strategy 3:** Develop proposed linear parks to connect directly to Brawley School Road frontage to give park land a prominent identity along the corridor.

**Strategy 4:** Provide small public urban plazas in all mixed use commercial centers.

**Recommendation -7.** Protect existing natural features through the establishment of additional parks and open space.

**Strategy 1:** Identify the natural features worthy of protection, such as stream buffers, mature tree stands, wetlands and other environmental features.

**Strategy 2:** Update the Mooresville Parks and Greenways Comprehensive Master Plan (2003) and provide parks and open space land that protect pockets of such features.

**Strategy 3:** Develop park land that follows the stream buffers and provides adequate width to accommodate trails.

**Recommendation – 8.** Utilize designated greenways as denoted on the Recreation Master Plan.

### 2.6 Community Facilities

**Recommendation -1.** Use civic architecture and publicly accessible open space to enhance the public realm.

**Recommendation – 2.** Integrate the land use / concept plan recommendations into the Water/Sewer Master Plan update process through input to the projections of water / sewer demands for the respective study areas.
## 2.7 Index of Base Zoning Districts

### Table 2.7.1

**Mooresville Zoning Ordinance - Base Zoning Index**

<table>
<thead>
<tr>
<th>District</th>
<th>Description</th>
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<tr>
<td>R-2</td>
<td>Single Family Residential -2</td>
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<td>GI</td>
<td>General Industrial</td>
</tr>
<tr>
<td>PC-C</td>
<td>Planned Campus District</td>
</tr>
<tr>
<td>WPO</td>
<td>Watershed Protection Overlay</td>
</tr>
<tr>
<td>MXO</td>
<td>Mixed-Use Overlay</td>
</tr>
<tr>
<td>COO</td>
<td>Corridor Overlay</td>
</tr>
</tbody>
</table>
2.7.1 Descriptions of SAP Land Use Categories

- **SF Residential Detached**: Although not generally contemplated as a potential or future land use within the study area, this classification supports existing land uses located along the perimeter of the study area.

- **SF Residential attached**: This land use category generally contains owner-occupied attached residential types such as townhomes or condominiums. This category is generally multi-story in form and should be pedestrian-oriented with buildings located in close proximity to streets.

- **SF Residential Transitional**: This use category provides for the reasonable transition of a property or structure originally constructed to support single family residential uses. This category anticipates that the property and residential structure will be modified to support a non residential use such as office or retail while maintaining the residential character of the structure as well as the residential building to street relationship.
**U.S. 21 Small Area Plan**

- **Multi-Family Residential**: This is a broader attached residential category that may include apartments, townhomes, and condo's. This category is generally multi-story in form and should be pedestrian-oriented with buildings located in close proximity to streets.

- **Mixed Use**: This type of development should be pedestrian-oriented with buildings located in close proximity to streets. The principle commercial establishments may be restaurants, cafes, print,copy shops, dry cleaners, live-work units, and other services targeted to support local employers and employees, surrounding neighborhoods, or communities.

- **Retail & Office- Mixed-use** – This type of development should be pedestrian-oriented with buildings located in close proximity to streets. The principle commercial establishments may be office or employment uses, restaurants, cafes, print,copy shops, dry cleaners, and other services targeted to support local employers and employees, surrounding neighborhoods, or communities.

- **Office Campus**: This land use category is intended to support multi-story buildings primarily supporting office uses. Office Campus development should be pedestrian-oriented with buildings located in close proximity to streets. The principal use supported by this category is office, office campus, employment center, research and development, and medical office uses. Such uses may be integrated vertically with supporting retail service uses such as restaurants, cafes, print,copy shops, dry cleaners, and other services targeted to support local employers and employees located on the first floor.

- **Flex Office**: This land use category is intended to support employment uses. The principal use supported by this category is office, employment center, research and development with indoor storage of products and materials. Limited on-site retail and wholesale uses are permitted.

- **Civic/Institutional**: This land use classification supports municipal, educational, religious, and banking uses. Development supporting this category should be pedestrian-oriented with buildings located in close proximity to streets.
Open Space & Parks - This land use category supports both active and passive recreational uses including athletic fields, playgrounds, pools, courts, tracks, and similar uses that are well served by streets, parking facilities, spectator areas, restroom facilities, and exterior lighting where appropriate. This classification may also include passive recreation uses such as gazebos, picnic areas, fountains and pools, plazas, and similar areas.
Background

The U.S. 21 Corridor Study was prepared with an understanding of issues, opportunities and constraints identified during the plan process. The vision for the plan unfolded during the workshop on March 10, 2010. The plan was further refined in subsequent months based on input received from the community at large.

In addition to issues, opportunities and constraints, a set of general and specific guiding principles were set early in the planning process with input from the community and stakeholders. These guiding principles set the direction for the plan process to proceed and helped provide a framework for plan preparation and recommendations (See Chapter 2: Recommendations and Implementation Strategies). On September 13, 2010 the community was given an opportunity to prioritize draft recommendations prior to preparing a final plan and recommendations. This allowed the plan process to better reflect the importance the citizens’ place on achieving these recommendations.

The U.S. 21 Small Area Plan provides a physical plan with recommended improvements. A complementary mix of land uses is shown on the plan consistent with the community vision for this area. Urban design principles played a significant role in the development of the physical plan and are important in achieving this vision. An emphasis on an efficient and multi-modal transportation system supports existing and future land uses. Land uses take advantage of existing infrastructure in the study area. Lastly, the plan offers potential areas for redevelopment in the future.

3.1 Demographics

The study area covers over 600 contiguous acres along the corridor which is made up of various types of land uses ranging from single family detached to professional office to automotive sales and mini-warehouse facilities. The study area is divided into three segments that are characterized by their individual land uses and development patterns.

Section “A” is primarily professional office with supporting retail in the proximity of the Exit 33 interchange. In this section there are two master planned developments. Mount Mourne Springs is located at the southeastern quadrant of U.S. 21 and the intersection of Medical Park Drive. This establishment has approximately 25,000 sq. ft. of mixed use office/retail space with a convenience store and a bank. The Mooresville Gateway Park development is composed of approximately 151,000 sq ft of professional office space with about 45,000 sq. ft. of supporting retail.
The majority of the retail uses are restaurants and small shops. Further north along the corridor towards the Waterlynn Road intersection the land use transitions over to predominately detached single family residential. The majority of these properties are currently for sale with the potential to be redeveloped as mixed-use and professional office space with support retail and medium to high density residential.

Section “B” historically has been characterized as residential with some civic and institutional uses along the west side of the corridor. Over time, some of the larger tracks have been sold off and developed as multi-family developments with some of the smaller parcels with frontage along the corridor have transitioned into office uses while still maintaining the residential character of a detached house. This section starts to transition into more commercial uses further north along the corridor at the U.S. 21 intersection with Brawley School Road and Wilson Avenue. The southwest quadrant of the intersection is the home to Brawley Commerce Park which has approximately 10,500 sq. ft. of civic / institutional space and approximately 52,500 sq. ft. of mixed use office / retail space. The southeastern quadrant is owned mostly by the Town and future growth in this quadrant is predicated on the implementation of the Mooresville Municipal Golf Course Master Plan.

Section “C” is recognized as an established area of the town and many of the highway business type uses have been located along this section of the corridor due to its proximately to NC 150 and Downtown Mooresville. There are a variety of uses located along this segment to include a commercial strip development, automotive sales lots, mini-warehouses, and flex industrial, interspersed with low density residential.

### 3.2 Land Use

The small area plan approached land use with knowledge of existing uses, vacant land, and market potential. A number of existing uses were found in the study area at the time of plan preparation. The plan recognizes these areas and provides for new uses that are complementary. The plan is shown on page 48.

The guiding principles in Chapter 1 suggest that new development should be oriented directly to the streets and shall be multi-story to integrate uses vertically. Although such building relationships are critical to the built development form of the corridor, buildings within designated neighborhood centers as identified in the Comprehensive Land Use Plan such as at the US 21 intersections with Brawley School Road and Waterlynn Road, should be close to the street edge while buildings along the corridor should have a more relaxed setback condition. Such setback treatments will create strong visual cues for these neighborhood centers as focal point destinations. It is recommended that for surface parking lots should be orientated to the side or rear of buildings or structures.
Section “A” which begins at the Exit 33 interchange and follows the corridor north to Waterlynn Road is flanked with a variety of land uses. In close proximity to I-77, there is Mount Mourne Springs and the Gateway development, which are pedestrian-oriented and urban in form. The plan recommends that this development continues north along the corridor and then transitions to higher-density attached residential before the intersection Waterlynn Road.

The intersection of US 21 and Waterlynn Rd. is identified on the plan as an activity center and should be developed to serve surrounding professional office uses and neighborhoods. The area of the plan that is located near Waterlynn Road and adjacent to Lake Norman is conducive to high density residential or a professional employment campus and strong consideration should be given as rezoning is submitted. This area also encompasses the south western most portion of Section “B”. The plan recommends that this area be developed as a whole and not split up into individual smaller developments. The gas station/convenience store located at the south-west quadrant of US 21 and W. Waterlynn Road is not in compliance with the proposed form and scale as outlined in this plan.

Section “B” which begins at the intersection of US 21 and Waterlynn Road extends north to the intersection with Brawley School Rd. This segment has a mix of uses ranging from low density single-family, civic, attached medium to high density attached single-family (townhomes and apartments) to transitional single-family office uses. This section of the study area is the most environmentally sensitive and strong consideration should be given to rezoning requests. The plan calls for this area of single-family transitional changing the current use of the property from residential to office and with interior upfits to comply with the commercial building code while utilizing the single family detached form of development.

Consideration may be given to the portion of the study area that abuts US 21, Balmy Lane, and Lazy Lane should all these parcels be acquired simultaneously and developed as a single project that may consist of a grocery store, bank, or other professional office space. The Town has recently purchased the 16 acre commercial site that is surrounded by the Mooresville Golf Course. A future renovation of the golf course is anticipated to include this site and create the potential for developing the south east quadrant of the intersection that could support small scale
retail / office uses. Such development should incorporate similar form and scale to the commercial development on the opposing side of the corridor.

Section “C” which begins at the intersection of Brawley School Road extends north to the bridge crossing NC Hwy 150 mostly supports existing development. The development in this segment consist of a few large tracts and low density single-family residential interspersed with a strip commercial center along with a variety of automotive sales, services, and mini storage facilities. The plan recognizes these types of uses as having a regional draw and recommends this segment of the study area be considered for redevelopment. The plan outlines appropriate and inappropriate uses and suggests such uses as automotive sales and mini-storage facilities are much more conducive to properties fronting NC Hwy 150 or located in a general industrial area. The Town should consider the down zoning of property from HB (Highway Business) to CMX (Corridor Mixed Use) or consider adopting and overlay that would address these issues.

Overall, the entire US 21 Corridor small area planning area is within the Town’s planning jurisdiction and further more falls within the Water Supply Watershed WSIV. This only allows for development to occur at a 24% impervious coverage by right and 50% - 70% utilizing high density option depending on if it’s located in a critical or protected area. Strong consideration should be given when reviewing development and rezoning request in order to protect that natural environment and drinking water supply for this region.

Civic and institutional areas identified in the plan recognize established areas for religious institutions along the US 21 Corridor; however, it is important to note that civic and institutional uses can occur within any designation shown the small area plan. Open space and parks are provided through a system of open spaces and recreation opportunities.
3.3 Urban Design

In keeping with the Mooresville Comprehensive Land Use Plan and the Mooresville Zoning Ordinance, this plan places an emphasis on design and urban form.

With regard to built form, the plan and supplemental street cross sections support future development and redevelopment that better orients to the public street network, which includes additional street network linkages.

Also with regard to character, the plan recognizes that a number of existing single-family dwellings are currently found within the study area with frontage along US 21. It was recognized certain structures are likely to transition over time to support nonresidential uses such as professional office. As a result, a special designation of Single Family Transitional is provided in the small area plan to recognize the locations of these structures. Also, this could allow for the character of these structures and surrounding areas to be addressed through specific regulatory controls in the future.

The public realm consists of areas that are not privatized but accessible to all. This includes the streetscape in the study area, parks and open space. The quality of this environment is important because it represents the fabric of the overall community. Enhancing this environment through streetscape improvements is intended as a key objective of the plan.

3.4 Transportation

Overview

This plan expands upon the recommendations of the Mooresville Comprehensive Transportation Plan (CTP). The plan provides more detailed transportation information specifically related to the study area. This allowed for a better understanding of transportation impacts specific to the study area and the formulation of recommendations. U.S. 21 is a North Carolina Department of Transportation (NCDOT) maintained roadway; however, the Town has jurisdiction of the zoning and future land use planning along much of the corridor and the Town has input in the proposed vision for the corridor through the adopted Mooresville CTP and regular meetings with NCDOT.

- **Section A** is located between I-77 and Waterlynn Road. This section transitions from a four-lane median divided roadway to a two-lane undivided roadway. Section A transitions from a controlled access facility, with access to businesses and residences only at intersections in the vicinity of the I-77 interchange to a section with numerous
driveways in the vicinity of the intersection with Waterlynn Road. This area experiences significant weekday, peak hour traffic volumes based on the proximity of the Lowe’s Corporate Headquarters and the Lake Norman Regional Hospital. The average available right-of-way in Section A is approximately 125 feet. Section A is depicted in Figures 3.1 and 3.2

- **Section B** is located between Waterlynn Road and Wilson Avenue/Brawley School Road. This section is primarily a two-lane, undivided roadway with dedicated turn lanes at intersections. The intersection of U.S. 21 and Wilson Avenue experiences congestion during the weekday peak hours, and consideration should be given to access management techniques given the nature of future, recommended development and intersection
improvements related to the new interchange with I-77 and Brawley School Road. The average available right-of-way in Section B is approximately 155 feet. Section B is depicted in Figure 3.3.

- **Section C** is located between Wilson Avenue and the interchange with NC 150. This section is a two-lane, undivided roadway with dedicated turn lanes at the major intersections. There are frequent driveway access points associated with residential land uses and strip commercial development. The average, available right-of-way in Section B is approximately 65 feet. Section C is depicted in Figure 3.4.
The corridor right-of-way is shown for each section in Figures 3.5, 3.6, and 3.7. The entire corridor is an open ditch, roadway cross section without curb and gutter. Currently, facilities for bicyclists and pedestrians do not exist along the U.S. 21 Corridor.
Section "A" Existing Land Use
- Low to medium density office land uses
- Highway Business incorporated into mixed use quadrant master plans
- Strip office development
- Land uses to serve area employment centers (i.e. Lowes, Hospital)

Section "A" Existing Transportation
- Corridor transitions from median divided section to rural two-lane section
- Control of access in the vicinity of interchange with I-77
- Access management techniques have preserved roadway capacity
- Significant peak hour traffic volumes generated by employment centers
Section "B" Existing Land Use
- Predominately Residential Land Use
- Low-Density, Suburban Building Form
- Neighborhood Retail Land Uses near Signalized Intersections
- Small Office Node near US 21 & Wilson Avenue Intersection

Section "B" Existing Transportation
- Two-lane, undivided Roadway Cross-Section
- Turn Lanes at Intersections
- Limited Roadway Connectivity in Area
- Limited Multimodal Infrastructure
- Significant Peak Hour Traffic at Intersections
Section "C" Existing Land Use
- Passive Retail Land Uses (i.e. Car Lots, Storage) are interspersed with low-density Residential Land Uses
- Strip Retail Development
- Convenience Store acts as a neighborhood retail center

Section "C" Existing Transportation
- Two-Lane Undivided Cross-Section with turn lanes at Wilson Avenue Intersection
- Frequent Curb Cuts
- Open Ditch Section
- Limited Roadway Connectivity in area
- Limited Multimodal Infrastructure
FIGURE 3.8
Approximate Corridor Right-of-Way Extents

Corridor Right-of-Way
Highway 21 Study Area
Town Limits

0.5 Miles

Town of Mooresville
3.5 Cultural and Historic Resources

No historic districts or structures were found in the study area. Civic and institutional areas identified on the plan recognize established areas for religious institutions along the U.S. 21 corridor. However, it is important to note that civic and institutional uses can occur within any designation shown on the small area plan. Potential sites for a new civic uses were evaluated in the plan process. Potential locations for a new fire station include sites along US 21, south of Brawley School Road, in the eastern portion of the study area designated on the small area plan as single-family detached residential.

3.6 Natural Resources, Open Space and Parks & Recreation

Recreational opportunities are provided through a system of open spaces and recreation facilities. Many of these areas are shown in a linear fashion that include or link to greenway trails to connect both existing and proposed developments. Park land can provide other benefits, such as protecting stream buffers, mature tree stands, wetlands and other environmental features.

Current erosion and sediment control requirements for the Town are governed by the NCDENR regulation and design manual. While these regulations do provide additional protection for areas classified as High Quality Waters, the U.S. 21 Corridor study area does not qualify as it is classified as WS-IV Watershed. To increase the level of protection of Lake Norman, more restrictive standards should be considered for the study areas with minor modifications. One option to further protect Lake Norman and waterways would be to consider revising the existing vegetated buffers to increase the existing undisturbed zone. Also, in order to increase development and redevelopment in designated areas, providing mitigation options to encourage density in designated areas should be considered.

Coordination with the small area plan ordinance revisions and the upcoming National Pollution Discharge Elimination System NPDES and Phase II Permit/Post Construction Controls Ordinance should be considered to ensure that specific goals can be met and further revisions are not needed.
Appendix A: Process to Develop the Plan

A.1 Research

Staff consulted the adopted Comprehensive Land Use Plan and Comprehensive Transportation Plan for relevant information about the U.S. 21 corridor. Recommendations from the adopted Brawley School Road Small Area Plan were incorporated to the U.S. 21 Small Area Plan in the vicinity of US 21 and Wilson Avenue to help reinforce this area as an important gateway to downtown Mooresville. Staff consulted with NCDOT to confirm the existing roadway right-of-way and future improvement projects along the corridor.

- Brawley School Road Small Area Plan (2009)
- Mooresville Comprehensive Land Use Plan (2007)
- Mooresville Zoning Ordinance (2008)
- Mooresville Comprehensive Transportation Plan (2007)
- Mooresville Comprehensive Bicycle Plan (2008)
- Capital Improvement Program (07-2008)
- Mount Mourne & South Iredell Master Plan (2006)
- Town Inventory of Historic Landmarks

A.2 Stakeholder & Public Participation

An initial public workshop for the U.S. 21 Small Area Plan was held on March 10, 2010. The meeting began with a staff presentation that explained the existing land uses and transportation conditions along the corridor. Following the presentation, staff facilitated a breakout session where the U.S. 21 corridor was divided into several sections based upon tables. Participants described their vision for the U.S. 21 corridor and study area and staff helped to communicate this vision by recording their ideas. The meeting was concluded with each table describing their vision for the U.S. 21 corridor.
A second public workshop for the U.S. 21 Small Area Plan was held on June 17, 2010. The meeting began with a staff presentation that highlighted the progress of developing the small area plan since the initial meeting. A proposed corridor land use map was presented, and a series of proposed roadway cross-sections were posted for resident comment.

In the preparation of this report and others, information was gathered from a variety of sources. The Mooresville Comprehensive Land Use Plan was vital during the process to understand and document the existing conditions throughout the study area.

A third public workshop for the U.S. 21 Small Area Plan was held on September 13, 2010. The focus on this workshop was to present the final draft document and receive final comment from citizens, property owners, and stakeholders. The workshop began with an in depth and detailed presentation of the plan concentrating on land uses and transportation issues. Following the presentation, staff facilitated a breakout session that focused on roadway improvements and Section C of the plan. From the information received, staff will finalize the plan and move forward with final adoption.

On _____________________ the Mooresville planning staff presented the proposed plan to the Mooresville Planning Board who by a ______________ vote recommended the plan be adopted. On _____________________ the planning staff presented the proposed plan to the Mooresville Town Board of Commissioners who by a vote of ______________ approved the adoption of the U.S. 21 Small Area Plan.
Appendix B: Transportation

B.1 Corridor Traffic Volumes

The U.S. 21 Corridor is classified as a major thoroughfare in the CTP and has a range of approximately 19,000 to 28,000 vehicles per day between I-77 (at Exit 33 interchange) and the NC 150 corridor, a distance of approximately 2.6 miles. The projected traffic volumes along the U.S. 21 corridor in the Mooresville CTP range from 26,800 to 35,900 in 2030. In addition, the levels of service (LOS) along the U.S. 21 corridor and most of the adjacent arterial roadway network are forecasted to be a LOS of “E” or “F” by 2030, which represents congested, gridlocked conditions. Figure B.2 displays the corridor traffic volumes and 2030 projections.

B.2 Intersection Crash Data Analysis

A descriptive vehicular crash data analysis was conducted at the signalized intersections and interchanges along the U.S. 21 corridor between 2005 through 2009. Based on the analysis, it was determined that the signalized intersections had a range of 24 – 76 crashes over this period and the interchanges had a range of 76-155 crashes between 2005 and 2009. Figure B.3 displays the results of the intersection vehicular crashes along the corridor. It is important to note that the two interchanges in this corridor had multiple intersections included within the analysis.

B.3 Adopted Transportation Plans and Future Improvements

In the CTP, the US 21 corridor is identified as a proposed boulevard needing improvements. It is recommended that the corridor be widened to a four-lane, median divided facility from I-77 (Exit 33 interchange) to the I-77 (Exit 42). This corridor offers a much needed parallel facility to I-77 and is used by regional and local traffic. The CTP recognizes that significant growth is anticipated to occur near the U.S. 21 and Fairview Road intersection. The widening of U.S. 21 is contingent upon NCDOT funding and prioritization. In addition, the CTP also recommends an extension of Timber Road from its existing terminus at NC 115 to U.S. 21. This proposed roadway connection is contingent upon future development and/or NCDOT funding and prioritization.

The Mooresville Comprehensive Pedestrian Plan (adopted in June of 2006) recognizes that the U.S. 21 corridor will remain a facility that is predominately designed for automobiles, therefore; this plan did not recommend sidewalks...
or greenways for any significant length along the U.S. 21 corridor. A multi-use path; however, is recommended along the U.S. 21 Corridor between Fairview Road and Gateway Boulevard, which is part of a larger greenway network between the mixed use development at Gateway Center and Mount Mourne Springs and the large employment centers (Lowe’s Campus and Lake Norman Regional Hospital). This path would be contingent upon the identification of a source of funding.
2030 Thoroughfare LOS
- Proposed Timber Rd Extension
  - LOS A-B
  - LOS C-D
  - LOS E-F

Section "A"
- 2008 AADT: 28,000
- 2030 Projection: 35,900

Section "B"
- 2008 AADT: 20,000
- 2030 Projection: 32,200

Section "C"
- 2008 AADT: 19,000
- 2030 Projection: 26,800

Brawley School Rd/I-77 Widening and Interchange Project
NCDOT - 2013

U.S. 21 Small Area Plan
Figure B.2
Corridor Traffic Volumes and 2030 Projections
Intersection Crash Counts

- **24 - 50**
- **51 - 76**
- **77 - 103**
- **104 - 129**
- **130 - 155**
Another proposed project that would intersect the US 21 corridor would be the provision of a multiuse trail along the power easement between Waterlynn Road and Cypress Landing Drive. In the pedestrian plan, this multiuse trail would connect the NC 115 corridor to the Morrison Plantation neighborhood west of I-77. This project would be contingent on a source of funding and approval from Duke Power.

The Mooresville Comprehensive Bicycle Plan (adopted on June 2, 2008) recognizes the U.S. 21 corridor as “future bicycle facilities by policy”, which implies that future road improvements along this corridor must consider bicyclists by recommending treatments of wide outside lanes, paved shoulders, or bike lanes, safe intersections, and safe motor vehicle speeds. Specifically, the Comprehensive Bicycle Plan recommends that bicycle lanes, “sharrows”, and “share the road signage” be implemented from Williamson Road to I-77 and U.S. 21 to NC 115 via Waterlynn Road. This recommended route would enable bicyclists to safely cross the interstate to access the Lowes Campus as well as Downtown Mooresville.

The Brawley School Road widening project and interchange with I-77 (NCDOT TIP# R-3833) will be complete by 2013. Once complete, the interchange will be constructed as a single point urban interchange and Brawley School Road will be upgraded to a four-lane, median divided roadway with bicycle lanes. The current eastern terminus of this project is Talbert Road, and the segment east to U.S. 21 will remain an undivided two-lane cross section. Given the direct access between the new interchange and Downtown Mooresville via Brawley School Road and Wilson Avenue, it is anticipated that this corridor will become a new gateway for Downtown. Additional aesthetic, gateway corridor planning and the consideration for additional intersection improvements at U.S. 21 and Wilson Avenue/Brawley School Road are recommended prior to the opening of the new interchange with I-77.
Appendix C: Terminology and List of Acronyms

To better understand this report, it is necessary to understand the terminology. Although the following terms have been expanded upon further in the entirety of this report, each has been briefly summarized for the reader’s comprehension:

Community Facilities: Any services or systems that is available for public use on a daily basis in order for citizens to meet their daily needs.

General Guiding Principles: Value-based statements that is not necessarily measurable. For the purposes of this plan, they express an ideal future outcome or condition.

Specific Guiding Principles: Statements that accompany general principles that are more specific and achievable compared to general principles.

“Green” Infrastructure: Features comprised of natural areas, hydrology and other environmentally sensitive areas, including riparian buffers and floodplains.

Implementation Matrix: the Implementation Matrix summarizes the policies set forth in the plan and the related action items. It reflects priorities determined during the process. More importantly, it serves as a worksheet for those involved in initializing, monitoring and measuring progress on implementation activities. It indicates items that should be the focus of first-year activities, and facilitates the prioritization of future implementation activities.

Level of Service (LOS): According to the Highway Capacity Manual, level of service (LOS) is a measure used to describe the operation conditions that drivers experience in a traffic stream. Level of service is designated by letter, similar to grades in school, with A representing the best conditions and F the worst. LOS A is generally free-flow with few delays, while LOS F constitutes highly congested, stop-and-go conditions. LOS D or better is generally considered acceptable. At LOS D, the roadway is busy, but traffic is still flowing at a reasonable speed.

Public Realm: Areas that is not privatized but accessible to all, including public right-of-way parks, civic sites and open spaces.

Recommendations: Very specific, measurable statements that are intended to achieve goals and objectives of the plan.

Strategies: Rules or courses of action that indicate how the guiding principles and objectives of the plan should be realized.
U.S. 21 Small Area Plan

Stakeholders: A variety of land owners, developers, agency representatives, and others from the community who were able to enhance the research by providing an additional layer of information regarding local issues and opportunities.

Industrial/Flex: Buildings that are comprised of a mix of office and industrial, but are at least 50% industrial.

Office/Flex: Buildings that are comprised of a mix of office and industrial, but are at least 50% office.

Professional Office: For-lease office space that contains multiple tenants within one building (also known as multi-tenant office space).

Corporate Office: Single-tenant office space that is typically owned by the user.

Neighborhood Retail: Retail centers that cater to the convenience needs of nearby neighborhoods.

Regional Retail: Retail centers that have the widest geographic appeal, and range in size from 300,000 to over 1,000,000 million square feet.

Floor Area Ratio (FAR): Comparison of the total square feet of a building to the square footage of the land area.

ETJ Extra Territorial Jurisdiction
NCDOT North Carolina Department of Transportation
CLUP Comprehensive Land Use Plan
CTP Comprehensive Transportation Plan
TIP Transportation Improvement Plan
NCDENR North Carolina Department of Environment and Natural Resources
BMP Best Management Practices
HOA Home Owners Association
AADT Average Annual Daily Traffic
VPD Vehicles Per Day
LOS Levels of Services
NASCAR National Association for Stock Car Auto Racing
NPDES National Pollution Discharge Elimination System
Appendix D:
Implementation Matrix

IMPLEMENTATION MATRIX

The Implementation Matrix is composed of a series of “action” items, or strategies, which are related to the guiding principles and recommendations contained in the Small Area Plan for US 21. This matrix was created to be used during the upcoming implementation phase, following the adoption of the plan. This table will be used to monitor implementation activities and measuring progress. The recommended timing for each proposed strategy is categorized as “short-term,” “mid-term,” or “long-term,” as determined by the planning staff implementing the Small Area Plan for the US 21 Corridor. Short-term implementation strategies are meant to be completed within the first year of the new plan. Mid-term implementation strategies are meant to be completed within two to five years. Long-term implementation strategies are to be completed in five years or greater. Those responsible for creating a strategic implementation plan are encouraged to do a thorough evaluation of the priorities indicated based on budget constraints and other relevant circumstances.
GENERAL RECOMMENDATIONS

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Implementation Strategy</th>
<th>Short Term</th>
<th>Mid Term</th>
<th>Long Term</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support rezoning requests using land use designations within the study area.</td>
<td>Evaluate rezoning requests using Table 2.2.1.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
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<tr>
<td>Encourage a higher density in new development as opposed to the density of existing development particularly in Sections A and C.</td>
<td>Require higher densities of development.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
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<tr>
<td>Strengthen designated activity centers as denoted on the Comprehensive Land Use Plan.</td>
<td>Direct commercial and employment uses toward activity centers by supporting rezoning requests that place these uses within designated activity centers.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Development for should be pedestrian oriented and supportive of future multimodal transit and transportation services.</td>
<td>Require sidewalk connections to businesses, orientate buildings to streets with multi-story vertically integrated uses.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
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**LAND USE AND URBAN DESIGN - SECTION A**

**Recommendations**

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<th>Recommendations</th>
<th>Implementation Strategy</th>
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<th>Mid Term</th>
<th>Long Term</th>
<th>Responsible Party</th>
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<tr>
<td>Ensure that an adequate buffer exists along the I-77 corridor to mitigate impacts to future development.</td>
<td>Enforce landscape standards in the Zoning Ordinance.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Continue the building form found in Gateway and Mount Mourne Springs at designated nodes along the corridor.</td>
<td>Support rezoning request for commercial mixed-use, office and multi-family developments.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Rezone new medium-to-high density multi-family or corporate campus along Waterlynn Road at strategic locations.</td>
<td>Support rezoning of the property for multi-family or a corporate campus.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
</tbody>
</table>

**LAND USE AND URBAN DESIGN - SECTION B**

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Implementation Strategy</th>
<th>Short Term</th>
<th>Mid Term</th>
<th>Long Term</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit the amount of high-density residential developments approved in Section B.</td>
<td>It is recommended that the Town does not support additional rezoning requests for high-density along this section.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Transition the existing single family detached residential into mixed-use retail and office uses.</td>
<td>Support change of use request and rezoning request for non-residential uses that will utilize existing single family homes for non-residential land uses.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Encourage higher density development at the US 21 and Wilson Avenue node as recommended in the Comprehensive Land Use Plan.</td>
<td>Foster redevelopment of the southeast quadrant through municipal golf course conversion.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
</tbody>
</table>

**LAND USE AND URBAN DESIGN - SECTION C**

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Implementation Strategy</th>
<th>Short Term</th>
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<th>Long Term</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Redevelop mini-storage and automotive sales lots.</td>
<td>Utilize the current design standards and parking regulations in the Mooresville zoning ordinance</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Redevelop Dry Dock Loop to a use that is appropriate to the vision of the study area.</td>
<td>Reserve property to support office and service-oriented uses fronting US 21 with the interior supporting high-density residential.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
</tbody>
</table>

**TRANSPORTATION**

**Recommendations**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>The U.S. 21 corridor is identified as a proposed boulevard in need of improvements in the Mooresville CTP.</td>
<td>Widens to a 4-lane median divided roadway, and a multi-use trail along one side of the roadway.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>NCDOT</td>
</tr>
<tr>
<td>Continue to preserve the on-used rights-of-way along the U.S. 21 corridor to account for an expanded roadway cross-section in the future.</td>
<td>Establish a transitional right-of-way along the U.S. 21 corridor as a condition of its adoption by the Town and/or NCDOT.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M./NCDOT</td>
</tr>
<tr>
<td>Construct Brawley School Road as a 4-lane divided roadway, bicycle lanes, and sidewalks along each side of the roadway.</td>
<td>Seek appropriation of construction funds for the Brawley School Road widening project – Phase C.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M./NCDOT</td>
</tr>
<tr>
<td>Construct a network of through, collector streets and redevelopment occurs.</td>
<td>Coordinate this process as development occurs through the site plan review process.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Add a new shared use pathway corridors between US 21 and NC 150. The extension of Timber Road is recognized as a proposed connection in the Mooresville CTP.</td>
<td>Complete an engineering feasibility study to determine the feasibility of constructing an extension of the existing Timber Road or Four Square Lane.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
</tbody>
</table>

**NATURAL RESOURCES, OPEN SPACE, AND PARKS AND RECREATION**

**Recommendations**

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<tbody>
<tr>
<td>Revise existing storm water regulations / zoning overlay districts to increase pollutant removal through buffers.</td>
<td>Increase storm water buffer requirements for both high and low density development options within the study area.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M./NCDENR</td>
</tr>
<tr>
<td>Revise existing storm water regulations to promote development and redevelopment in the study area.</td>
<td>Pursue the option of providing mitigation options to encourage density in designated areas.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M./NCDENR</td>
</tr>
<tr>
<td>Allow contiguous parcels to submit as a single project site for satisfying WS-IV Watershed impervious area requirements.</td>
<td>Town will collaborate with the State.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M./NCDENR</td>
</tr>
<tr>
<td>Provide access to Lake Norman via small pocket parks along the waters edge.</td>
<td>Coordinate with open space regulations as new development occurs.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Develop parks and open space within proposed office, commercial and residential developments.</td>
<td>Require park land in all new development that is easily accessible to the public.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
</tbody>
</table>

**COMMON FACILITIES**

**Recommendations**

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<tr>
<td>Use civic architecture and publicly accessible open space to enhance the public realm.</td>
<td>Important sites for community facilities are designated on the small area plan and should be reserved for these purposes.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
<tr>
<td>Integrate the land use / concept plan recommendations into the Public Utilities Master Plan.</td>
<td>Amend the adopted Public Utilities Master Plan to include information regarding the US-21 Corridor.</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>★ ★ ★</td>
<td>T.O.M.</td>
</tr>
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