

# **ADA SELF-ASSESSMENT AND TRANSITION PLAN FOR SIDEWALKS AND CURB RAMPS**

Prepared for

**Limestone County, Alabama**

Prepared by

**Goodwyn, Mills and Cawood, Inc.**

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**Limestone County Compliance Administrator:**



GOODWYN MILLS CAWOOD

INTEGRATED PUBLIC AND PRIVATE SOLUTIONS

## EXECUTIVE SUMMARY

In December, 2015 Limestone County retained Goodwyn, Mills and Cawood, Inc. (GMC) of Huntsville, Alabama to assist the Limestone County with its compliance self-assessment as mandated by the Americans with Disabilities Act (ADA) and administered by the Alabama Department of Transportation. The self-assessment was required pursuant to a July 20, 2015 letter issued by the Alabama Department of Transportation establishing a timeframe of one year for municipalities and Counties across the State of Alabama to perform self-assessments and create a Transition Plan setting forth priorities and goals for regulatory compliance with ADA. This is a requirement of the Rehabilitation Act of 1973, USDOT Implementing Regulations (49 CFR 27), Americans w/Disabilities Act of 1990 and DOJ Implementing Regulations (28 CFR 35).

GMC's scope of work included the construction of a database inventory of all sidewalks and curb ramps located along the public roadways and rights-of-way under the jurisdiction of the Limestone County. The scope of work specifically excluded analysis of sidewalks and facilities at and serving public buildings not in the right of way. All of the existing sidewalks are in residential subdivisions. Selected characteristics were evaluated against minimum ADA requirements and deficiencies were noted and put into the database. The database was thence utilized to sort and summarize the collected data. A priority ranking system was developed in order to assist Limestone County in targeting those curb ramp and sidewalk improvements which would yield the greatest immediate benefit to the public.

GMC's curb ramp study evaluated **152** individual locations. Of the **49** existing curb ramps, **49** were determined to be deficient in some manner when compared against ADA standards. There were also **103** locations in which a curb ramp was absent but necessary to maintain an accessible route. Most of the existing curb ramps surveyed exhibited multiple ADA violations, and combined with those areas where ramps are required, the majority of the locations are targets for new ramp construction. A total of **\$230,004.88** was the value approximated as necessary to bring into compliance those ramps deemed to have a "High" or "Very High" priority ranking.

GMC's curb sidewalk study evaluated **653** individual locations for sidewalk compliance. **456** of **653** existing sidewalk locations were determined to be deficient in some manner when compared against ADA standards. In addition at **68** locations the sidewalk was absent but necessary to maintain an accessible route. The total length of absent sidewalk necessary to satisfy the accessible route is **9,400'**. These sidewalks received a "High" priority ranking and are in new subdivisions under construction. They are anticipated to be installed as the

subdivision is completed by the developer therefore no cost to the county or installation by the county is anticipated to bring into compliance those “High” priority ranking or absent sidewalks.

There is 24.2 miles of existing sidewalk of which approximately 25% is in compliance. Since all the existing sidewalks are in residential subdivisions, they would receive equal priority under and evaluation in which public utilization was among the metrics considered. A total of **\$1,394,556.28** was the value approximated as necessary to bring into compliance those existing sidewalks deemed to have a “Low” priority ranking.

This cost is inclusive of general contractor construction costs, and a project contingency allowance. Engineering and Attorney fees if necessary would be an additional amount.

GMC recommends Limestone County prioritize renovating those curb ramps and sidewalks in built out subdivisions and require new sidewalks and be checked for ADA compliance prior to subdivision acceptance.

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# 1 PROJECT DESCRIPTION

## 1.1 BACKGROUND

The Americans with Disabilities Act of 1990 (ADA) was enacted by the United States Congress and signed into law by President George H. W. Bush in 1990. The law was adopted with the purpose of providing a “clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities.” The law, which went into effect in 1992, imposed requirements for public accessibility and mandates employers provide reasonable accommodations for employees with disabilities. The public accessibility standards have since provided the basis of design for public facilities including sidewalks, ramps, crosswalks, parking lots, buildings, amenities, and other forms of pedestrian transportation and access.

Since ADA’s inception, the law has received amendments per the ADA Amendments Act of 2008, which codified several Supreme Court interpretations of ADA. In 2011 regulations modifying the text of ADA were adopted by the Department of Justice. These regulations included changes to ADA’s Standards for Accessible Design.

The ADA covers five areas with respect to the rights of the disabled: Title I Employment, Title II Public Services, Title III Public Accommodations, Title IV Telecommunications, and Title V, which prohibits threatening or coercing people with disabilities or those with whom they associate. Title II of ADA provides that public entities must identify and evaluate all programs, activities and services and review all policies, practices, and procedures that govern their administration. Limestone County is classified as a “public entity” pursuant to Title II of ADA, and therefore must make its programs and services reasonably accessible to all persons with disabilities (28 CFR § 35.149). Limestone County Engineering Department is responsible for technical assistance to each of the County commissioner’s districts. Each commissioner is responsible for roadway maintenance in their district.

As a Public Entity, Limestone County must comply with the Department of Justice 28 CFR 35, which states under its general requirements, “No individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation by any private entity who owns, leases (or leases to), or operates a place of public accommodation.” There are several parts to this regulation including general and specific requirements. It should serve as the primary standard and reference to directly as any questions or concerns arise during the implementation of the Transition Plan.

The Transition Plan presented here in is meant to comply with the requirements set forth in, 35 Title 2 of the Americans with Disabilities Act Technical Assistance Manual section **11-8.3000**  
**Transition plan TITLE 28 CFR PART 35.150 (d)**  
(<https://www.dol.gov/oasam/regs/cfr/28cfr/part35/35150.htm>) ,which states,

**(d) Transition plan.**

**(1)** In the event that structural changes to facilities will be undertaken to achieve program accessibility, a public entity that employs 50 or more persons shall develop, within six months of January 26, 1992, a transition plan setting forth the steps necessary to complete such changes. A public entity shall provide an opportunity to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan by submitting comments. A copy of the transition plan shall be made available for public inspection.

**(2)** If a public entity has responsibility or authority over streets, roads, or walkways, its transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas.

**(3)** The plan shall, at a minimum—

**(i)** Identify physical obstacles in the public entity's facilities that limit the accessibility of its programs or activities to individuals with disabilities;

**(ii)** Describe in detail the methods that will be used to make the facilities accessible;

**(iii)** Specify the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period; and

**(iv)** Indicate the official responsible for implementation of the plan.

**(4)** If a public entity has already complied with the transition plan requirement of a Federal agency regulation implementing section 504 of the Rehabilitation Act of 1973, then the requirements of this paragraph (d) shall apply only to those policies and practices that were not included in the previous transition plan.

(Approved by the Office of Management and Budget under control number 1190-0004)

[56 FR 35716, July 26, 1991, as amended by Order No. 1694-93, 58 FR 17521, Apr. 5, 1993; AG Order No. 3180-2010, 75 FR 56180, Sept. 15, 2010; AG Order 3332-2012, 77 FR 30179, May 21, 2012].

More explanation about the specific requirements of a transition plan are at <https://www.ada.gov/taman2.htm#11-8.3000>

On July 20, 2015, the Alabama Department of Transportation (ALDOT) issued a mandate to each municipality and County within the State of Alabama requiring the performance of a self-evaluation to ascertain compliance with minimum ADA accessibility standards. Transition Plans are thereby required as a means of documenting non-compliant facilities and establishing an achievable strategy for bringing those facilities into compliance with ADA. Submission of Transition Plans to each public entity's respective Metropolitan Planning Organizations (MPO) is required on or before July 20, 2016. This study was requested by the Limestone County Engineer and is focused on fixed transportation elements within the public right of way under the responsibility of Limestone County. Additional elements are to be undertaken as required by regulation under the direction of the appropriate responsible officials.

## 1.2 PURPOSE

The focus of this Report is to provide the necessary public sidewalk and curb ramp information to assist the Limestone County with its self-assessment as mandated by the Americans with Disabilities Act (ADA) as administered by the Alabama Department of Transportation and supplement Limestone County's efforts toward creating a comprehensive Transition Plan to comply with Title II of the ADA by inventorying, evaluating for compliance and creating a plan to bring Limestone County's curb ramps and sidewalks into compliance.

## 1.3 SCOPE OF STUDY

The Americans with Disabilities Act and subsequent federal modifications, along with the Americans with Disabilities Act Title II Technical Assistance Manual, provided the comparative basis of the curb ramp evaluation. These resources address general access requirements; however, they generally target accessibility standards for public buildings and proximate areas. For further design guidance for facilities located within and along public rights-of-way - such as sidewalks, curb ramps, and other similar features - the United States Access Board has proposed a Public Rights of Way Accessibility Guidelines (PROWAG) document. PROWAG serves as a useful supplementary resource and is commonly used by public entities throughout the United States to ensure the spirit of ADA's intent. Until PROWAG is formally adopted and binding, the 2010 ADA Standards serve as the governing standard accessibility of standards in the United States.

Pursuant to its professional services agreement with Limestone County, GMC's scope was limited to providing an ADA compliance evaluation for the following curb ramp and sidewalk features:

### Presence of a Curb Ramp

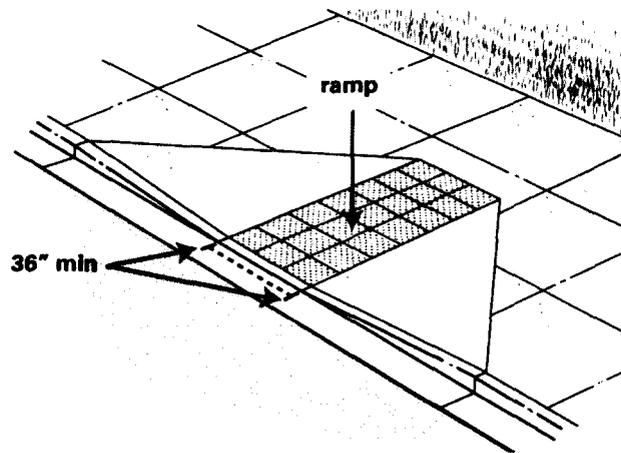
This item defines whether a curb ramp is physically present in a specific location. Curb ramps must be located wherever a pedestrian pathway crosses a curb, or when there occurs an alteration that affects the walkway and a curb ramp is not already present. Curb ramps are required to be placed in locations that ensure a person with limited mobility can safely travel from a sidewalk on one side of the street to the sidewalk on the other side of the street with no impedance. Alterations performed to roadways may automatically trigger the installation of a curb ramp. Such alterations include widening, reconstruction, rehabilitation, resurfacing, and other significant improvements. Alterations such as pothole repair, point repair, painting and striping, crack filling and sealing, joint sealing and similar maintenance activities do not trigger the need for curb ramp installation.

### Length of Curb Ramp

This item measures the total length of curb ramp along its axis of travel from the top of the ramp to the toe of the ramp where it interfaces with the concrete curb or asphalt pavement. Per PROWAG, the maximum length of a curb is 15 feet, and is set by a maximum 8.33% running slope to a maximum 30 inch height of the ramp. (Ref. PROWAG 304.2.2) A typical 6" high curb ramp shall not be steeper than 1:12 implying a 6' length. (Ref. 2010 ADA Standards 405.2)

### Width of Curb Ramp

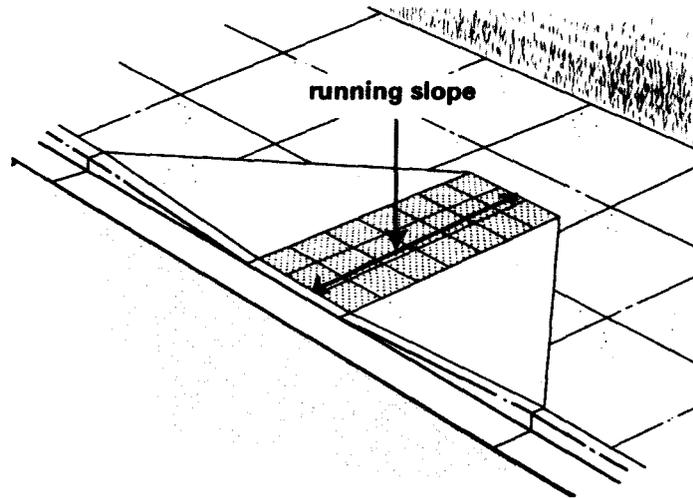
This item states the lateral width of the travel path of the curb ramp. The minimum width of a curb ramp is 36 inches. (Ref. 2010 ADA Standards 405.5) [Note: PROWAG 302.3 and 304.5.1 require a minimum width of 48 inches]



*Ramp Width (Source: ADA Accessibility Survey Instructions Manual)*

### Running Slope

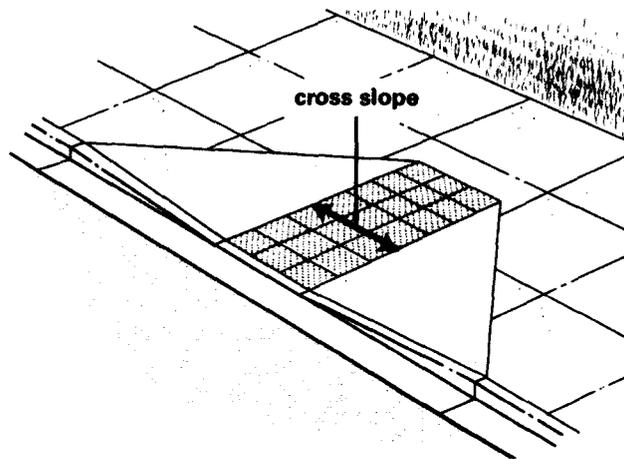
The running slope is defined as the slope parallel to the direction of travel. The maximum running slope for a curb ramp is 1:12 or 8.33%. (Ref. 2010 ADA Standards 406.1 and 405.2, PROWAG 304.2.2, 304.3.2 and 304.4.1)



*Running Slope (Source: ADA Accessibility Survey Instructions Manual)*

### Cross Slope

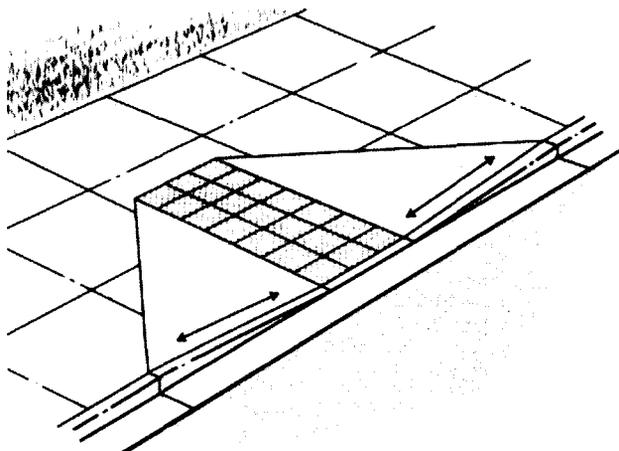
The running slope is defined as the slope perpendicular to the direction of travel. The maximum cross slope for a curb ramp is 1:48 or 2.00%. (Ref 2010 ADA Standards 405.3 and PROWAG 304.5.3)



*Cross Slope (Source: ADA Accessibility Survey Instructions Manual)*

### Flare Slope

The flare slope is defined as the slope of the concrete flares on either side of a curb ramp. The maximum flare slope for a curb ramp is 1:10 or 10.00%. (Ref 2010 ADA Standards 406.3 and PROWAG 302.7.4)



Flare Slope (Source: ADA Accessibility Survey Instructions Manual)

### Slip Resistant Surface

Curb ramps must have a surface that is “stable, firm and slip resistant”. ADA requirements define a slip-resistant surface as one which “provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation”. However, no minimum level of slip resistance or coefficient of friction is specified in the law. Detectable warnings such as pavers and truncated domes are manufactured as slip resistant, as is the general nature of an unencumbered bare concrete surface. (Ref. 2010 ADA Standards 302.1)

### Stability of Surface

A stable surface is “one that remains unchanged by contaminants or applied force, so that when the contaminant or force is removed, the surface returns to its original condition.” A firm surface resists deformation by either indentations or particles moving on its surface. A slip-resistant surface provides sufficient frictional force to counter the forces imparted on the walkway during travel. (Ref. 2010 ADA Standards 302.1)

### Orientation to Intersection Crosswalk

Curb ramps may be perpendicular to roadways or be installed diagonally at an intersection. Perpendicular curb ramps are the preferred style of crosswalk since the direction of travel remains consistent as one continues into the crosswalk. Diagonal curb ramps installed on a

radius are required to have a minimum 48" clear/landing outside the travel lanes. (Ref. 2010 ADA Standards 406.5 and 406.6)

### Curb Height

The height of the adjacent curb was also measured to provide a direct measurement of the total rise of the ramp run. Although the 2010 ADA Standards 405.6 require a maximum 30 inch height of general ramps, curb ramps do not fall under this requirement and have no stipulated maximum height. PROWAG 304.2.2 prohibits curb ramp lengths of exceeding an 8.33% running slope and 15-foot total length, which implies a maximum 30 inch ramp height.

### Detectable Warnings

Detectable warnings are designed to be felt underfoot or with a cane by people who are blind or have low vision, thereby alerting them of hazards- mainly, the transition from a pedestrian-only area to a roadway. Per Paragraph 406.8 of the DOJ's 2010 ADA Standards, a curb ramp shall have a detectable warning complying with Section 705 of Standards. The detectable warning shall extend the full width of the curb ramp (exclusive of flared sides) and shall extend either the full depth of the curb ramp or 24 inches (610 mm) deep minimum measured from the back of the curb on the ramp surface. PROWAG R208 and R305 specify that tactile surfaces used as a detectable warning device must have a shade contrast with the surrounding path material.

### Sidewalk Width

Sidewalk width slope was recorded every 100' and measured perpendicular to the direction of travel. ADA Standards 403.5.1 "*Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.*" PROWAG R302.3 states "*Except as provided in R302.3.1, the continuous width clear of pedestrian access routes shall be 1.2m (4.0 ft.) minimum, exclusive of the width of the curb.*"

### Passing Spaces

Both ADA and PROWAG require 5'x5' passing spaces at intervals of 200'. PROWAG 302.4. ADA 403.5.3 states "An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection."

### Sidewalk Slope

Sidewalk cross slope was recorded every 100' and measured perpendicular to the direction of travel. ADA Standards 403.3 states *"The running slope of walking surfaces shall not be steeper than 1:20."* PROWAG R302.6 specifies that the slope of pedestrian access routes shall be 5% maximum.

### Sidewalk Cross Slope

Sidewalk cross slope was measured at 100' intervals perpendicular to the direction of travel. ADA Standards 403.3 states *"The cross slope of walking surfaces shall not be steeper than 1:48."* PROWAG R302.6 specifies that the cross slope of pedestrian access routes shall be 2% maximum.

## **2 DATA COLLECTION AND METHODOLOGY**

### **2.1 GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE**

Prior to the commencement of fieldwork, a Geographic Information System (GIS) database was created with ESRI software to facilitate field data collection and storage. GIS database was considered ideal due to its ability to create and tailor specific fields to the various curb ramp attributes that were recorded. Additionally, GIS proved beneficial for mapping and providing visual references and displays of the entire curb ramp inventory. The information collected utilizing the GIS database, combined with other publicly available GIS information, enables the Limestone County and its agents an efficient way of 1) ascertaining curb ramp and sidewalk compliance with adopted ADA and PROWAG standards, 2) documenting specific and unique characteristics of existing curb ramps and sidewalk, 3) identifying curb ramps and sidewalk which are in need of replacement or modification, 4) quantifying the extent and value of work required, and 5) prioritizing curb ramp and sidewalk modifications to meet available capabilities of Limestone County. The following database fields were established:

GIS Curb Ramp Data

Field	Database Field Name	Data Descriptor Options (Accuracy)
1	Running Slope	Numerical Value (0.1%)
2	Cross Slope	Numerical Value (0.1%)
3	Ramp Width (Top)	Numerical Value (0.1 ft.)
3	Ramp Width (Bottom)	Numerical Value (0.1 ft.)
4	Ramp Length	Numerical Value (0.1 ft.)
5	Detectors	Yes/No
6	Contrasting Color	Yes/No
7	Detector Length	Numerical Value (0.1 ft.)
8	Detector Width	Numerical Value (0.1 ft.)
9	Adjacent Curb Height	Numerical Value (0.1 ft.)
10	Type of Ramp	Perpendicular/Diagonal/Parallel/No Ramp
11	Crosswalk	Yes/No
12	Firm/Stable	Yes/No
13	Slip Resistant	Yes/No
14	Flare Slope	Numerical Value (0.1 ft.)
15	Flare Width	Numerical Value (0.1 ft.)
16	Flare Length	Numerical Value (0.1 ft.)
17	Top Landing Width	Numerical Value (0.1 ft.)
18	Top Landing Length	Numerical Value (0.1 ft.)
19	Top Landing Running Slope	Numerical Value (0.1 ft.)
20	Top Landing Cross Slope	Numerical Value (0.1 ft.)
21	Bottom Landing Minimum 4'x4'	Yes/No
22	Bottom Landing Outside Travel Lane	Yes/No
23	Aligned with Crosswalk	Yes/No/Blank if no Crosswalk
24	Orientation to Street	Perpendicular/Skew/No Ramp
25	Comments	Text description
26	Structural Quality	High/Moderate/Low
27	QC	Text Description

## GIS Sidewalk Data

Field	Database Field Name	Data Descriptor Options (Accuracy)
1	GPS Coordinate	Numerical Value (0.1%)
2	Sidewalk Number	Numerical Value
3	Sidewalk slope	Numerical Value (0.1%)
4	Presence of Sidewalk	Yes/No
4	Sidewalk Width	Numerical Value (0.1 ft.)
5	Sidewalk Cross Slope	Numerical Value (0.1 ft.)
6	Sidewalk Obstruction/Impediment At point observed	Comment/GPS Coordinate

### 2.2 DATA COLLECTION AND METHODOLOGY

Data collection equipment included an Apple iPad 2 Mini with ESRI ArcGIS Collector Application software, providing the user interface for entering data. A standard tape measure and SmartTool Model 9228 digital level were employed to measure distances and slopes. The measurement for each field parameter was performed as described below.

#### Presence of a Curb Ramp

The presence of a curb ramp was assessed based on a simple affirmative or negative observation.

#### Running Slope

The running slopes were measured by placing the digital level device parallel to and along the centerline of the curb ramp's direction of travel.

#### Cross Slope

The cross slope were measured by placing the digital level device perpendicular to the direction of travel along the curb ramp's direction of travel, at a point midway along the ramp length.

#### Width of Curb Ramp

The recorded width of a curb ramp was measured in a straight line perpendicular to the centerline path of travel at the interface of the gutter line and curb ramp, from a point on one edge of the walkway to the opposite edge. If the width of the top of a curb ramp did not measure a minimum of 36 inches it was not recorded in the database as a ramp.

#### Length of Curb Ramp

The length of a curb ramp was measured in a straight line along the ramp centerline from a point starting at the interface between the ramp and gutter, to a point at the interface between the ramp and landing.

#### Detectable warnings

The presence of a detector was noted based upon visual observation.

#### Detector Contrasting Color

The presence of contrasting color of detectors from sidewalk was noted based upon visual observation.

#### Detector Width

The detector width was measured from one corner of the detector to a separate corner of the detector, parallel to the direction of travel.

#### Detector Length

The detector length was measured from one corner of the detector to a separate corner of the detector, perpendicular to the direction of travel.

#### Adjacent Curb Height

The curb height adjacent to the curb ramp was the distance measured vertically from the gutter line to the top of the curb.

#### Type of Ramp

The type of ramp was noted by a visual observation describing whether a ramp was in fact present and how the ramp was oriented with respect to the intersection. The description options were set as follows:

- *Perpendicular* – Ramp is oriented perpendicular to the roadway in which it intersects
- *Diagonal* – Ramp is oriented diagonally to the direction of travel of the adjacent sidewalk
- *Parallel* – Approaching sidewalk abuts and follows the back of curb of the adjacent parallel roadway to the point of a perpendicular curb ramp

- *No Ramp* – No ramp present where a sidewalk led directly into the back of a curb

#### Firm/Stable

The firmness and stability of the ramp surface was measure by the field technician walking along the curb ramp and noting the occurrence of sliding or displacement of the curb ramp and/or the detector. The technician also made a moderate effort to shift the ramp surface and detectors with his feet.

#### Slip Resistant

The slip resistance of the curb ramp surface was measured by the field technician walking along the ramp and noting the stability of the steps taken and implicit potential for uncontrolled lateral movement of the feet. The technician additionally made an effort to firmly place a foot upon the curb ramp and apply a lateral force in an attempt to slide the foot along the surface of the ramp. The technician was outfitted with rubber-sole tennis shoes.

#### Flare Slope

The slope of a curb ramp flare was measured by placing the digital level device along the steepest portion of the flare.

#### Flare Width

The width of a curb ramp flare was measured with a tape measure at the widest portion of the flare/ bottom of the ramp.

#### Flare Length

The length of a curb ramp flare was measured with a tape measure along the inside portion of the flare.

#### Top Landing Width

The width of the top landing was measured with a tape measure at the top of the ramp.

#### Top Landing Length

The length of a curb ramp landing was measured with a tape measure from the top of the ramp.

#### Top Landing Running Slope

The running slope of the landing was measured by placing the digital level device parallel to and along the centerline of the landing's direction of travel.

#### Top Landing Cross Slope

The cross slope were measured by placing the digital level device perpendicular to the direction of travel along the landing's direction of travel, at a point midway along the landing's length.

#### Bottom Landing size

The bottom landing of each ramp was measured for a minimum size of 4'x4' and recorded as affirmative or negative.

#### Bottom Landing outside travel lane

The bottom landing location of each ramp was determined in the affirmative or negative to be inside or out of the travel lane.

#### Alignment with Crosswalk

The alignment of a curb ramp to a marked crosswalk was recorded as a "Yes" - meaning the curb ramp was horizontally in line with the associated crosswalk - or "No" - signifying the curb ramp was horizontally offset from the crosswalk. The absence of text in this field indicates that no marked crosswalk was present.

#### Orientation to Street

A determination of Perpendicular, Skew or No Ramp was made based on the centerline of curb ramp.

#### Sidewalk Width

Sidewalk width was measured with a tape measure at 100' intervals perpendicular to the direction of travel.

#### Sidewalk Slope

Sidewalk cross slope was recorded every 100' with a digital level device in the direction of travel.

#### Sidewalk Cross Slope

Sidewalk cross slope was recorded every 100' with a digital level device perpendicular to the direction of travel.

#### Comments

The comments field was used to denote specific and unique features and deficiencies at each inventoried location. Characteristics such as vertical and horizontal offsets (flush and in line), concrete cracking and spalling and the presence of vegetation were some of the items

recorded during the curb ramp inspection. The Comments field was included in order to provide a more detailed description of curb ramp condition which may not fall under the other descriptive field parameters.

### Structural Quality

The Structural Quality field was included to allow for a general summarization of the overall structural condition of a curb ramp. Those exhibiting a severe degree or number of structural deficiencies were labeled as “Low”. These included curb ramps where cracks spanned the surface of a curb ramp from one side to the other. Those exhibiting an overall moderate to excellent condition were labeled as “High”. This included ramps that may exhibit some surface cracking which does not run the entire length or width of a ramp, and which does not appear to pose a near-term risk to pedestrians. The descriptor for this field is intended to provide a general idea of the useful life of the curb ramp with respect only to the condition of the materials of construction, and to aid when determining corrective priority respective to the entire curb ramp inventory.

### QC (Quality Control)

The QC field allows for comment by Limestone County of Limestone County officials tasked with reviewing the database and information collected. The comments provided by Limestone County during the course of the project were aggregated and addressed appropriately. In some cases additional field information was gathered to satisfy Limestone County questions and comments.

In addition to the information populating the aforementioned database field, a digital photograph of each curb ramp location was made and uploaded to the database and linked with its respective curb ramp. The photographs provided a useful visual reference when reviewing data during subsequent quality control and cost estimating tasks. All collected data was immediately uploaded and stored GMC's server.

### 3 SUMMARY OF FINDINGS

#### 3.1 GENERAL DATA SUMMARY

Following are a summary tables of general curb ramp statistics and sidewalks resulting from the study.

No.	Statistic	Total	% of Total
1	Inventoried Locations	152	100.0%
2	Existing Curb Ramps	49	32.2%
3	Locations where Curb Ramp was Absent	103	67.8%
4	Total Non-Compliant Curb Ramps	49	32.2%
5	Running Slope Violations	38	25.0%
6	Cross Slope Violations	18	11.8%
7	Ramp Width Violations	1	0.7%
8	Ramp Length Violations	0	0.0%
9	Detector Violations	49	32.2%
10	Slip Resistant Violations	0	0.0%
11	Flare Slope Violations	46	30.3%
12	Top Landing Length	24	48.0%
13	Top Landing Width	1	2.0%
14	Top Landing Running Slope	35	71.4%
15	Top Landing Cross Slope	20	40.8%
16	Curb Ramps with "High" Structural Quality	43	28.3%
17	Curb Ramps with "Low" Structural Quality	3	2.0%

No.	Statistic	Total	% of Total distance
1	Inventoried Locations	757	100.0%
2	Sidewalk Slope violation	43	5.7%
3	Sidewalk Cross slope violation	455	60.1%
4	Sidewalk Width violation	0	0.0%
5	One or more violations	566	74.8%
6	Other Sidewalk Issues observed	443	n/a

## 4 RECOMMENDED IMPROVEMENTS AND ESTIMATED COSTS

### 4.1 PROJECT PRIORITIZATION

As shown above, a number of curb ramp and sidewalk locations were discovered to be non-compliant with adopted ADA standards. The Limestone County maintains only a finite amount of public funding to apply to ADA renovations each fiscal year. Therefore, it becomes necessary to subdivide and prioritize the scope of work to allow for a fiscally responsible funding strategy that does not risk placing an undue burden to the other public services in Limestone County. Prioritizing corrective actions can not only achieve this goal, but also ensure that those curb ramps posing the greatest risk to pedestrians are addressed most expediently.

### 4.2 PRIORITIZATION METHODOLOGY

When planning improvements to accessible walkways, prioritization should be applied on the basis of the type of facility/area served per 28 CFR Section 35.150(d) (2) *"If a public entity has responsibility or authority over streets, roads, or walkways, its transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas."*

From this the following order was applied:

1. Those serving in or within close proximity to local government facilities
2. Bus stops and other transportation services
3. Public accommodations
4. Business districts
5. Residential areas

Of the above criteria is present in Limestone County, only one local government facility is present in close proximity to a school and does not currently have a means of connecting pedestrian access. Business is mixed with residential because there is no zoning in the county. The County has no public transportation service. Because sidewalks are only in single family residential subdivisions, service to a close proximity facilities is not present. The presence of sidewalk and then the severity of non-compliance is considered as the determining factor in prioritization. This measure speaks to the degree of risk posed to pedestrians utilizing a particular ramp or sidewalk. The most effective manner in which to then prioritize necessary improvements to the curb ramp infrastructure is to apply a ranking system based upon ramp compliance. The equation, ADA Compliance Score + Activity Score = Priority Score, which is typically utilized in order to provide an objective score by which curb ramps and sidewalks could be ranked would not apply because all activities are equal or single family residential.

Therefore, for the purposes of this study, the ADA Compliance Score was deemed to also represent the priority score.

### ADA Compliance Score

One of the primary factors to consider when planning a curb ramp renovation initiative must be each ramp's overall compliance with ADA standards. Ramps may be non-compliant based on one or multiple factors and a single ramp's priority may be directly correlated to the number of parameters which do not meet minimum standards. Each ramp's individual compliance score was thus calculated based on the number of violations to ADA standards plus separate point assignments for the perceived structural condition and absence of a ramp. The scoring was based on a maximum total of 120 points, divided evenly amongst the 15 separate ADA standards considered, so that a total of 6.67 points was awarded for each individual violation. 100 points was assigned in the event a ramp was not present.

A ramp's overall structural condition may warrant the need for immediate replacement, despite its compliance standing with ADA standards. For example, a ramp which meets all minimum ADA requirements, but has suffered a high degree of wear and deterioration may experience failure in the immediate future. In such cases it may be beneficial to consider incorporating these ramps into a long-term ADA compliance renovation project so that imminent failure does not place the public at future risk. Ramps with a condition designated as "Low" received 20 points, while ramps whose condition was rated as "Moderate", "High", or "Very High" received no additional points.

It is prudent to consider those areas where no curb ramp was located as demanding extra precedence. Field inspection yielded a significant number of locations in which a sidewalk led directly into a street curb. Without curb ramps, pedestrians who utilize wheelchairs would not be able to access a sidewalk or street, and would therefore be forced to turn around and search out a separate location to safely cross the street. ADA requires that pedestrian facilities provide a continuous and safe pathway for travel between destinations. The above-described scoring method is intended to be applied only to ramps which have physical features that can be evaluated. A score of 100 was therefore given to those locations where curb ramps were absent in effort to properly weight their importance in the raking methodology.

## **4.3 PRIORITY SCORING RESULTS**

The results of the described priority ranking system are shown in the chart below. The majority of the curb ramps fall within a moderate priority level while relatively few were classified in the highest priority category. Those curb ramps falling within a "Very High" priority level exhibited multiple non-compliant features, had a low structural quality and were generally located close to points of interest such as public facilities and frequently traveled areas. It is these areas which the Limestone County should seek to correct immediately as the scoring for these locations suggests a significant hazard to pedestrians.

Priority Score Range	Priority Level	No. of Curb Ramp locations
97 - 120	Very High	104
73- 96	High	3
49 - 72	Moderate	27
25 - 48	Low	18
0 - 24	Very Low	0

Sidewalks prioritization would be driven by 1) missing sections of sidewalks in existing subdivisions that have sidewalk, 2) obstructions or sidewalk structural issues 3) existing sidewalks that are not in compliance. Since sidewalk measurements were taken at 100' intervals, a more frequent analysis is recommended as sidewalks are scheduled for replacement.

It is the intent of Limestone County to remain consistent with ADA Standards (Section 4.1.6 (j) of Appendix A, 28 CFR Part 36): which states that *“All areas of newly designed or newly constructed buildings and facilities required to be accessible...and altered portions of existing buildings and facilities to be accessible shall...comply with these guidelines...”* This may include the renovation of non-compliant curb ramps or installation of new curb ramps where warranted. This Report is intended to aid the Limestone County in its annual capital improvements planning and budgeting process. The necessity for street resurfacing, repair or construction may affect the order in which the forgoing curb ramp priority locations are remedied as severe roadway impairments may dictate the need for more immediate attention. Roadway condition was not incorporated into the priority ranking as the Limestone County has yet to adopt a comprehensive long-term street improvements plan. This Report may be updated as such information becomes available.

#### 4.4 ESTIMATED COST OF IMPROVEMENTS

##### Curb Ramps

Where ramps have not been installed with sidewalks in new subdivisions, they will be included in the construction of new homes. In the majority of the cases where existing curb ramps and sidewalks warrant replacement, the scope of corrective work will require complete removal of

the existing ramps and reconstruction, as opposed to point repairs and renovations to the existing. This strategy is recommended for several reasons. First among them is the overall structural integrity of the finished curb ramp will be greater and exhibit a higher and more uniform quality. Secondly, it allows the Limestone County more latitude to undertake a scope of work which may recognize modifications to the surrounding environment that may have occurred since the original ramp was installed. New curb ramps may then be blended with adjacent facilities to provide enhanced accessibility. Lastly, a new curb ramp will exhibit a greater aesthetic quality when compared to one which contrasts aged and newer features. The cost estimating methodology anticipates the replacement of curb ramps in total.

There are two basic costs associated with the replacement of curb ramps, excluding those costs associated with the Limestone County's administrative activity. The first of these includes the construction costs. If not performed using the Limestone County's own forces, the work to install new curb ramps will include the Limestone County retaining the services of a general contractor that will be tasked with removing the existing curb ramp and installing a new. The contract may be structured to include a unique lump sum price for each identified curb ramp, or a single unit price applicable to all curb ramps.

For the purposes of estimating costs on curb ramps, average dimensions were assumed. Using a curb height of 6 inches, and an average slope of 6.67%, the average length of a curb ramp could be calculated to be 7.5 feet. This value is close to the average length of existing curb ramps measured during the field inspection (7.2 feet). It can also be assumed that the width of a new curb ramp will in fact be 48 inches, yielding an area of 30 square feet. For curb ramps with flares, the bottom width of each side flare is expected to be 5 ft., based on the maximum slope and standard curb height measured. The total area of the flares is therefore expected to be 36 square feet. It should also be assumed that at least one 4 ft. x 4 ft. area of sidewalk immediately adjacent to the curb ramp will also be removed. This puts the total installed area of concrete at 82 sf, or 9.1 square yards. Other items that must also be installed as part of a curb ramp assembly are detectable warning (insets or brick pavers), and tapered curb and gutter (approximately 10 linear feet along the base of the flare).

Legal fees may become necessary where the Limestone County requires general project consultation, public engagement, agency correspondence, bid procurement review and approval, or in matters concerning verification or acquisition of temporary or permanent rights-of-way. Such fees are not included in this cost estimate.

Contingencies are important for any budgeting exercise as they recognize the likelihood of unique and unforeseen circumstances which may cause an escalation in project costs. Professional services related to grant administration have been omitted from this evaluation as well.

Using the separate project costs described above, an approximate estimate for replacing each deficient curb ramp may be prepared as shown in the figure below.

<b>Existing Curb Ramp Installation Cost Estimate</b>					
Item	Description	Unit	Qty	Unit Price	Total
1	Demolition	SY	5.1	\$25.00	\$127.50
2	Concrete (4 in. Thickness)	SY	9.1	\$55.00	\$500.50
3	Detectable Warning Insert	EA	1	\$300.00	\$300.00
4	Concrete Curb and Gutter	LF	10	\$25.00	\$250.00
<b>Curb Ramp Const. Sub-Total</b>					<b>\$1,178.00</b>
5	Mobilization/Bonding (13.0%)	LS	1	\$153.14	\$153.14
6	Overhead/Profit (20.0%)	LS	1	\$235.60	\$235.60
<b>Contractor Admin. Subtotal</b>					<b>\$388.74</b>
<b>Curb Ramp Const. Total</b>					<b>\$1,566.74</b>

<b>New Curb Ramp Installation Cost Estimate</b>					
Item	Description	Unit	Qty	Unit Price	Total
1	Concrete (4 in. Thickness)	SY	9.1	\$55.00	\$500.50
2	Detectable Warning Insert	EA	1	\$300.00	\$300.00
3	Concrete Curb and Gutter	LF	10	\$25.00	\$250.00
<b>Curb Ramp Const. Sub-Total</b>					<b>\$1,050.50</b>
4	Mobilization/Bonding (13.0%)	LS	1	\$136.57	\$136.57
5	Overhead/Profit (20.0%)	LS	1	\$210.10	\$210.10
<b>Contractor Admin. Subtotal</b>					<b>\$346.67</b>
<b>Curb Ramp Const. Total</b>					<b>\$1,397.17</b>

By applying the standard curb ramp cost estimate to the priority ranking above, an estimated cost for each priority level category can be determined.

Priority Level	Estimated Cost for Compliance	
Very High	\$	162,940.96
High	\$	4,191.50
Moderate	\$	37,723.46
Low	\$	25,148.97
Very Low	\$	-
<b>TOTAL</b>	<b>\$</b>	<b>230,004.88</b>

Sidewalks

Where sidewalks have not been installed in new subdivisions, they will be included in the construction of new homes. For the majority of existing sidewalks, their installation and replacement is based on the observed median width of 4' and potential implementation of PROWAG with 5'x5' passing spaces every 200'. Width slope and cross slope was measured every 100'. The actual length of sidewalk intervals was determined through GIS Mapping. GMC recommends 4' sidewalk with passing spaces be placed where existing 4' width or less sidewalk is present and 5' wide sidewalk only in those limited locations. In many areas with driveways could fulfill the passing space requirement if they meet slope requirements.

4' Wide Sidewalk Removal and Installation Cost Estimate					
Item	Description	Unit	Qty.	Unit Price	Total
1	Demolition	LF	1	\$ 3.70	\$ 3.70
2	Concrete (4 in. Thickness)	LF	1	\$ 8.14	\$ 8.14
<b>Sidewalk Const. Sub-Total</b>					<b>\$ 11.84</b>
5	Mobilization/Bonding (13.0%)	LS	1	\$ 1.54	\$ 1.54
6	Overhead/Profit (20.0%)	LS	1	\$ 2.37	\$ 2.37
<b>Contractor Admin. Subtotal</b>					<b>\$ 3.91</b>
<b>Sidewalk Const. Total</b>					<b>\$ 15.75</b>

4' Wide Sidewalk with Passing Spaces Cost Estimate					
Item	Description	Unit	Qty.	Unit Price	Total
2	Concrete (4 in. Thickness)	LF	1	\$ 8.15	\$ 8.15
<b>Sidewalk Const. Sub-Total</b>					<b>\$ 8.15</b>
5	Mobilization/Bonding (13.0%)	LS	1	\$ 1.06	\$ 1.06
6	Overhead/Profit (20.0%)	LS	1	\$ 1.63	\$ 1.63
<b>Contractor Admin. Subtotal</b>					<b>\$ 2.69</b>
<b>4' Sidewalk Const. Total per</b>					
LF					<b>\$ 10.84</b>

By applying the standard an estimate for each type can be determined. Because measurements were taken at 100' intervals, the actual cost may vary based on a more frequent measurement interval and assessment at the time of replacement.

Sidewalk width	LF of new Sidewalk	Estimated cost of sidewalk compliance
(none)4'	9,408	\$0 per performance bonds
existing 4'	88,559	\$ 1,394,556.28
<b>TOTAL</b>		<b>\$ 1,394,556.28</b>

#### 4.5 COMPLIANCE SCHEDULE

The County's ADA Transition Plan should establish a defined schedule and milestones for improving accessible walkway deficiencies which have been discovered. Milestones are specific dates within a project schedule for which certain project goals are targeted for completion, and serve as way to gauge progress towards achieving its ADA compliance goal. Examples of such milestones may include project initiation, percent of work scope complete, target construction completion date, and final certification date.

Limestone County must carefully consider the scope of work and how best to incorporate the curb ramp and sidewalk replacement costs in its annual budget. It is recommended the County seek to spread these costs over a suitable timeframe so as not to incur expenses which may compromise its ability to sustain basic public services. Curb ramp and sidewalk replacements and annual street improvements should be coordinated very closely to ensure that the required ramp replacements occur, and that the GIS database is subsequently updated to remove affected ramps from the priority listing.

It is important to note that Transition Plans and compliance targets are expected to be modified as a public entity's incorporated boundaries expand and areas within the entity develop and change. Public entities are further expected to update Plans as appropriate to ensure that all barriers to accessibility are removed until ADA compliance is satisfied. The GIS database created as part of this project is intended to provide a tool for planning, analysis and record keeping commensurate with the County's long-term ADA compliance initiatives. The database may be easily appended as curb ramps are added and modified throughout the County.

#### **4.6 GRIEVANCE PRODEDURE**

Limestone County has adopted an internal grievance procedur  providing for prompt and equitable resolution of complaints alleging any action prohibited by the U.S. Department of Justice regulations implementing Title II of the Americans with disabilities Act. Title II states, in part, that *"no otherwise qualified disabled individual shall, solely by reason of such disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination"* in programs or activities sponsored by a public entity.

Complaints should be addressed to:

County Engineer, ATTN: Bryant Moss

310 W Washington St, Athens, AL 35611

Phone (256) 233-6681

1. A complaint shall be filed in writing and shall contain the name and address of the person filing it together with a brief description of the violation(s) alleged.
2. A complaint should be filed within 14 days of when the complainant becomes aware of the alleged violation. (Processing of allegations of discrimination occurring before this written grievance procedure was in place shall be considered on a case-by-case basis.)
3. An investigation, when deemed appropriate, shall follow the filing of a complaint. The investigation shall be conducted by the ADA Coordinator or his/her designee. These rules contemplate informal but thorough investigations, affording all interested persons and their representatives, if any, an opportunity to submit evidence relevant to a complaint.



4. A written determination as to the validity of the complaint and a description of the resolution, if any, shall be issued by the ADA Coordinator and a copy shall be forwarded to the complainant no later than 30 business days after its filing. In the event a complex issue arises that requires additional review, the response time may be extended beyond 30 days.
5. The ADA Coordinator shall maintain the files and records of Limestone County relating to the complaints filed.
6. The complainant may request reconsideration of their case in instances where he or she is dissatisfied with the resolution. The request for reconsideration should be made, within 30 days of the issuance of the ADA Coordinator's written resolution, to the County Commission Chairman.

Commission Chairman

310 W. Washington Street Athens, AL 35611

Phone (256) 233-6400

7. The right of a person to a prompt and equitable resolution of the complaint filed hereunder shall not be impaired by the person's pursuit of other remedies such as the filing of an ADA complaint with the responsible federal department or agency. Use of this grievance procedure is not a prerequisite to the pursuit of other remedies.
8. These rules shall be construed to protect the substantive rights of interested persons to meet appropriate due process standards and to assure that the Limestone County complies with the ADA and implementing regulations.

#### **4.5 PUBLIC PARTICIPATION**

Along with changes to reflect the physical growth of a community, the Transition Plan should be periodically evaluated to reflect any changes to laws, regulations, uses and current condition of facilities. Being proactive to ensure ADA compliance through public outreach and involvement can provide useful information regarding changes in the ways citizens use and access facilities. Providing an opportunity to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the self-evaluation and transition plan process may prompt discussion of experiences by pedestrians, including persons with disabilities that they encounter while using County sidewalks within the public right-of-way. Opinions on existing conditions and suggestions for improvements could be assessed for implementation. It could be used to better understand what pedestrian and accessibility conditions exist and how local citizens can be better served while using the County's sidewalks.

Many public entities have adopted a general ADA nondiscrimination policy, a specific policy on service animals, a specific policy on effective communication, and specific policies on other ADA topics. Staff also needs instructions about how to access the auxiliary aids and services needed to communicate with people who have vision, hearing, or speech disabilities and changes in device technology. Public entities should also make staff aware of the free information resources for answers to ADA questions. Officials should be familiar with the current ADA Standards before undertaking any alterations or new construction projects. Training staff on the ADA, conducting periodic self-evaluations of the accessibility of the public entity's policies, programs and facilities, and developing a transition plan to remove barriers are other proactive steps to ensure continuing ADA compliance.