**MINUTES FROM A REGULAR MEETING OF THE COUNCIL OF MUSCLE SHOALS, ALABAMA, HELD**

November 14, 2011

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The Council of Muscle Shoals, Alabama met at the City Hall in said City at 6:00 p.m. on the 14th day of November, 2011 being the regularly scheduled time and approved place for said meeting. The meeting was called to order by David Bradford, Mayor of the City. The invocation was given by Rusty Wheeles. On roll call the following members were found to be present or absent, as indicated:

PRESENT: JOE PAMPINTO, NEAL WILLIS, JERRY KNIGHT GRISSOM
JAMES HOLLAND, ALLEN NOLES , DAVID H. BRADFORD
ABSENT: NONE

David H. Bradford, Mayor of the City, presided at the meeting and declared that a quorum was present and that the meeting was convened and opened for the purposes of transaction of business. Richard Williams, City Clerk, was present and kept the minutes of the meeting.

Upon motion duly made by Council Member Holland seconded by Council Member Pampinto and unanimously adopted, the Council waived the reading of the minutes of the previously held regular meeting and work session of October 17, 2011 and approved the minutes as written.

Mayor Bradford announced that the next item of business was public comments. Mrs. Regina Michael, 408 Euclid appeared before the Council and was recognized.

Mayor Bradford announced that the next item of business was the scheduling of a public hearing to consider the issuance of a Wholesale Table Wine License to Supreme Beverage Co. Inc. dba Supreme Beverage Company located at 106 W. Avalon Avenue.

Mayor Bradford announced that at a meeting to be held at the City Hall in said City at 6:30 p.m. on the 5th day of December, 2011, the Council will consider the approval of the license. At said time and place, all persons who desire to do so shall have an opportunity of being heard in opposition to or in favor of the approval of such license.

Mayor Bradford announced that the next item of business was a public hearing to consider amendments to the Ordinance #1349-05 relating to construction activities with the City.

Mayor Bradford noted that proper notice of the date, time and place of said hearing had been given. Council Member Pampinto introduced the ordinance in writing in the meeting.

Mayor Bradford stated that the Council would hear from those persons in support of the adoption of the amended ordinance as well as those opposed.

There being no one wishing to speak, Mayor Bradford stated that consideration of the ordinance amendment was before the Council.

Council Member Pampinto moved for immediate consideration of the ordinance. Council Member Grissom seconded the motion and upon said motion being put to a vote, a roll call was had and the vote was recorded as follows:

AYES: Council Member Pampinto, Council Member Willis, Council Member Grissom, Council Member Holland, Council Member Noles, Mayor Bradford
NAYS: None

Mayor Bradford announced the vote and declared that the motion for unanimous consent for immediate consideration had been approved. Council Member Pampinto then moved that the said ordinance be finally adopted, which motion was seconded by Council Member Grissom and, upon said motion being put to a vote, a roll call on final approval was had and the vote recorded as follows:

AYES: Council Member Pampinto, Council Member Willis, Council Member Grissom, Council Member Holland, Council Member Noles, Mayor Bradford
NAYS: None

Mayor Bradford thereupon declared said motion carried and that the Ordinance had been approved.

Mayor Bradford announced that the next item of business was a public hearing to consider establishment of a city drainage policy.

Mayor Bradford noted that proper notice of the date, time and place of said hearing had been given. Council Member Grissom introduced the ordinance in writing in the meeting.

Mayor Bradford stated that the Council would hear from those persons in support of the adoption of the amended ordinance as well as those opposed.

There being no one wishing to speak, Mayor Bradford stated that consideration of the ordinance amendment was before the Council.

## ORDINANCE NUMBER 1438 - 11

### AN ORDINANCE PROVIDING FOR DRAINAGE SPECIFICATIONS IN THE CITY OF MUSCLE SHOALS, ALABAMA

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**WHEREAS,** the Council of the City of Muscle Shoals, Alabama is desirous of providing for and setting forth the requirements for drainage specifications within the City of the City of Muscle Shoals, Alabama;

**BE IT ORDAINED** by the Council of the City of Muscle Shoals, Alabama as follows:

# City of Muscle Shoals
# Drainage Manual

### Introduction

The City of Muscle Shoals was founded in 1921 and remained largely undeveloped until the mid 60's when US Highway 43 was constructed through the City. The City has grown up around that Highway, and has grown to a population of more than 15,000 residents. The City has a complicated hydrology and topography. The City's topography is defined by a karst topography that has formed many depressions, both large and small, throughout the City. The large majority of the City drains to these depressions and many of them have been excavated by the City and are now operated and maintained by the City as regional retention/detention facilities. There are still many more of these depressions throughout the City that remain as natural retention areas that are only relieved by evaporation, and infiltration into the groundwater table. Many of these natural retention areas are located on private property that is not under the control of the City and they are not operated or maintained by the City.

### General

This Manual represents the application of accepted principles of stormwater drainage engineering and is a working supplement to basic information obtainable from standard drainage handbooks and other publications on drainage. The policy statements of this section provide the underlying principles by which all drainage facilities shall be designed. The application of the policy is facilitated by the technical criteria contained in the remainder of the manual.

### Policy

(1) Stormwater runoff peak flow rates for the two (2), five (5), ten (10), twenty-five (25) and one-hundred (100) year frequency storms shall not cause increased adverse inundation of any building or structure.

(2) Street curbs, gutters, inlets and storm sewers shall be designed to intercept, contain and transport all runoff from the 10 year frequency storm unless a greater frequency storm is required by the City Engineer.

(3) In addition to 2) above, the public drainage system shall be designed to convey those flows from greater than the 10 year frequency storm up to and including the 100 - year frequency storm without damaging the system or any existing or proposed structures.
(4) When stormwater detention is required by the City, stormwater runoff peak flow rates shall not be increased at any point of discharge for the two (2), five (5), ten (10), and twenty-five (25) year storm frequency events.
(5) Situations may arise where stormwater from a developed site is discharged to an existing privately owned natural retention area that is not maintained by the City of Muscle Shoals. In this situation retention must be provided such that the total volume discharged for a 25 year storm is not greater than pre-development volumes. In addition, the 100 year storm should be evaluated to ensure that no existing structures will be adversely affected. In these areas the infiltration onsite of stormwater is encouraged.
(6) Regulation of peak flows to allowable levels, as determined by the provisions of this policy, shall be achieved by storage on-site or off-site. The Detention/Retention Section of this manual provides a guide to acceptable methods.
(7) It is understood that this manual will not be applicable to all situations that may arise within proposed developments. When special situations arise they will be evaluated on a case by case basis and exceptions to this manual may be made by the City Engineer when warranted. However, in all cases it must be determined that any alternate designs must, at a minimum, not cause damage to downstream property or structures.

**Purpose**

Experience has shown that most of the more serious flooding, erosion, and water quality problems are "created." Usually this occurs from conveying more stormwater to a given area than can be carried away effectively. Ever increasing drainage problems emerge unless well conceived, cooperative stormwater drainage and flood control programs are undertaken. The stormwater management goals of the City of Muscle Shoals, AL, are to prevent flooding, and erosion that may result from stormwater runoff from development and redevelopment projects. The Citys Drainage Manual (the Manual) provides guidance and direction for meeting these goals.

The purpose of the Manual is to protect existing natural stormwater resources, convey and control stormwater in a safe and responsible manner, and meet water quality goals. The Manual is intended to provide information to the general public on the City's stormwater policies and design practices, as well as assist developers, engineers, and City staff in the preparation, review and approval of the Stormwater Report and Construction Drawings that must accompany private and public development proposals. This document is organized to facilitate specific design and submittal activities related to stormwater management infrastructure. Stormwater management, particularly in the area of stormwater quality management, is an evolving science. As such, the Manual will be updated as necessary to reflect accepted standard practice in stormwater management.

## Applicability

Unless otherwise exempted, this Manual shall be used for all public and private projects that change land use, existing stormwater flow patterns, and/or stormwater pollutant discharges as applicable to all premises within the City of Muscle Shoals.
Any new development or redevelopment involving the following shall be subject to the Manual:

A. Construction of commercial, industrial or institutional facilities,
B. Expansion of commercial, industrial or institutional facilities.
C. Redevelopment of commercial, industrial or institutional facilities if the renovation will substantially affect stormwater drainage,
D. Construction of multi-family residential facilities,
E. Expansion of multi-family residential facilities,
F. Redevelopment of multi-family residential facilities if the renovation will substantially affect stormwater drainage,
G. Construction of residential subdivisions,
H. Expansion of residential subdivisions,
I. Redevelopment of residential subdivisions, if the renovation will substantially affect stormwater drainage,
J. Filling or regarding to change the topography of any existing land within the City of Muscle Shoals,
K. Construction, reconstruction, improvement, and/or modification of all private and public transportation facilities which alter existing drainage patterns under this item. Routine maintenance of these facilities or construction of elements that do not impact the existing drainage patterns are excluded,
L. The Manual is not applicable to the expansion, construction, or reconstruction of one single family dwelling or one two-family dwelling on a single parcel unless it is deemed appropriate by the City Building Official.

## Definitions

Unless specifically defined in this section, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage, and to give this chapter its most reasonable application.

**2-year frequency storm** - A storm event with a fifty (50) percent chance of being equaled or exceeded in a given year. Defined to be 3.78 inches in 24 hours or other such magnitude the City Engineer shall establish based upon scientific and engineering information.
**5-year frequency storm** - A storm event with a twenty (20) percent chance of being equaled or exceeded in any given year. Defined to be 4.78 inches in 24 hours or other such magnitude the City Engineer shall establish based upon scientific and engineering information.
**10-year frequency storm** - A storm event with a ten (10) percent chance of being equaled or exceeded in any given year. Defined to be 5.46 inches in 24 hours or other such magnitude the City Engineer shall establish based upon scientific and engineering information.
**25-year frequency storm -** A storm event with a four (4) percent chance of being equaled or exceeded in any given year. Defined to be 6.21 inches in 24 hours or other such magnitude the

City Engineer shall establish based upon scientific and engineering information.
**50-year frequency storm** - A storm event with a two (2) percent chance of being equaled or exceeded in any given year. Defined to be 6.82 inches in 24 hours or other such magnitude the City Engineer shall establish based upon scientific and engineering information.
**100-year frequency storm -** A storm event with a one (1) percent chance of being equaled or exceeded in any given year. Defined to be 7.47 inches in 24 hours or other such magnitude the City Engineer shall establish based upon scientific and engineering information.
**Blue-Line Stream -** Any stream shown on the 7.5 minute USGS Quad Maps**.**
**Buffer Zone -** A naturally undisturbed, vegetated and pervious streamside zone that is protected from clearing, grading, filling, paving, building or other destruction of the naturally vegetated state**.**
**Covenants by Property Owner for Permanent Maintenance of Stormwater Facilities -** A legal document executed by the Property Owner and recorded with the Colbert County Courthouse guaranteeing perpetual and proper maintenance of stormwater facilities.
**Detention -** A practice to store stormwater runoff by collection as a temporary pool of water and provide for its gradual (attenuated) release and thereby control peak discharge rates**.**
**Discharge -** Dispose, deposit, spill, pour, inject, seep, dump, leak or place by any means, including any direct or indirect entry of any solid or liquid matter into the stormwater system by any means intentional or otherwise**.**
**Disturbed Area -** Portion of any site that has been altered from existing conditions, including but not limited to the following: providing access to a site, clearing of vegetation, grading, earth moving, providing utilities and other services such as parking facilities, stormwater management and erosion control systems, potable water and wastewater systems, altering land forms, or construction or demolition of a structure on the land.
**Downstream -** Downgradient from the lowest point of each subwatershed in a development**.**
**Erosion -** The removal of soil particles by the action of water, wind, ice or other geological agents, whether naturally occurring or acting in conjunction with or promoted by development activities or effects.
**Floodplain -** For a given flood event, that area of land temporarily covered by water
**Hydraulic -** Pertaining to, involving, moved or operated by a fluid, especially water, under pressure or under a gravity-driving force.
**Hydrologic -** Pertaining to the scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere**.**
**Impervious area -** Impermeable surfaces, such as pavement or rooftops, which prevent the percolation of water into the soil**.**
**Infiltration -** A practice designed to promote the recharge of groundwater by containment and concentration of stormwater in porous soils.
**Major storm -** A 100-year design storm or a storm that has a probability of one (1)
**Major Collector Channel -** Drain twenty (20) acres or more
**Minor Collector Channel -** Drains less than twenty (20) acres
**Natural Resources Conservation Service (NRCS) -** An organization within the U.S. Department of Agriculture that has published standard drainage procedures in the form of Technical Release No. 55. Formerly known as the Soil Conservation Service (SCS).
**Outfall -** The terminus of a stormwater system where the contents are released**.**

**Parking area -** The off-street facility including parking spaces along with adequate provision for drivers and aisles for maneuvering and giving access, and for entrance and exit, designed to be usable for the parking of vehicles.
**Peak flow -** The maximum instantaneous rate of flow of water at a particular point resulting from a storm event.
**Peak flow attenuation -** The reduction of the peak discharge of a storm**.**
**Person -** Any individual, firm, corporation, partnership, association, organization or entity, including governmental entities, or any combination thereof**.**
**Retention -** A practice designed to store stormwater runoff by collection as a permanent pool of water without release except by means of evaporation, infiltration, or attenuated release when runoff volume exceeds storage capacity of the permanent pool.
**Riprap -** A combination of large stone, cobbles and boulders used to line channels, stabilize stream banks, and reduce runoff velocities.
**Runoff** - The water resulting from precipitation that is not absorbed by the soil.
**Sanitary sewer** - A system of underground conduits that collect and deliver sanitary wastewater to a wastewater treatment plant.
**Sanitary wastewater** - Wastewater from toilets, sinks and other plumbing fixtures.
**Site Development** - To physically alter a site. Site development includes, but is not limited to, providing access to a site, clearing of vegetation, grading, earth moving, providing utilities and other services such as parking facilities, stormwater management and erosion control systems, potable water and wastewater systems, altering land forms, or construction or demolition of a structure on the land.
**Stormwater** - Runoff from rain, snow or other forms of precipitation, resulting in surface runoff and drainage.
**Stormwater system** - The system of roadside drainage, roadside curbs and gutters, curb inlets, swales, catch basins, manholes, gutters, ditches, pipes, lakes, ponds, sinkholes, channels, creeks, streams, storm drains, and similar conveyances and facilities, both natural and manmade, located within the city which are designated or used for collecting, storing, or conveying stormwater, or through which stormwater is collected, stored or conveyed, whether owned or operated by the city or other person.
**Swale -** A natural or manmade depression or wide shallow ditch used to route or filter runoff.
**Upstream** - Upgradient of the lowest point of each subwatershed of a development.
**Utility, public or private** - Any agency which under public franchise or ownership, or under certification of convenience and necessity, provides the public with electricity, natural gas, steam, communication, rail transportation, water, sewage collection, or other similar service.
**Vegetation** - Collection of plant life, including trees, shrubs, bushes, and grass.

## Part 1 Stormwater Policy

### Section 1 Design Criteria

#### 1.1 Street Drainage

No lowering of the standard height of street crown shall be allowed for the purposes of obtaining additional hydraulic capacity.

## 1.2 Drainage System

### 1.2.1 Culverts

(1) Construction plans for proposed reinforced concrete box culverts, and related structures may be adaptations of the current Alabama Department of Transportation (ALDOT) Standards.
(2) For culverts in residential streets, runoff from the 100 year frequency flow shall not produce a headwater elevation at the roadway greater than either twelve (12) inches above the roadway crown elevation or any top of upstream curb elevation, whichever is lower.
(3) For culverts in streets other than a residential street, runoff from the 100 year frequency storm shall not produce a headwater elevation at the roadway greater than six (6) inches above the roadway crown elevation or six (6) inches above any top of upstream curb elevation, whichever is lower.

### 1.2.2 Drainage Facilities

All drainage facilities (including but not limited to headwalls, open channels, storm sewers, area inlets, and detention, retention and water quality controls and their appurtenances) shall comply with the following requirements, unless otherwise noted in this section.

1) Storm sewer inlets and gutter transitions shall be designed to avoid future driveways and to avoid conflicts with standard water and wastewater service locations. No utilities shall be allowed to cross under a storm sewer inlet.
(2) Drainage channels and detention ponds that are to be maintained by the public (City) shall be contained within dedicated easements. Adequate room for access shall be provided for drainage channels and detention ponds.

(i) Ramps no steeper than five (5) feet horizontal to one (1) foot vertical shall be provided at appropriate locations to allow access to drainage channels and detention ponds.
(ii) The minimum bottom width for any channel with vegetative side slopes shall be eight (8) feet.
(iii)A reinforced concrete trickle channel shall be provided in all newly constructed channels and from detention pond inlets to outlets. The area adjacent to trickle channels shall slope at a minimum of two (2) percent.

(3) Detention ponds shall be designed with adequate area around the perimeter for access and maintenance. Said area shall be a minimum of seven (7) feet wide for ponds with depths of five (5) feet or less (back slopes included) and a minimum of fifteen (15) feet wide for ponds over five (5) feet deep or with back slopes in excess of five (5) feet high. Said area shall not slope more than five (5) percent.
(4) Rip-rap for slope protection or velocity dissipation shall be formed concrete dissipaters or mortared rip-rap.

### 1.2.3 Storm Drains

(1) Storm drains between lots (crossing blocks) shall be avoided as much as possible. When unavoidable, such mains shall be laid along a straight alignment (absent of curves, jogs and manholes/junction boxes when traversing between lots) with manholes/junction boxes provided at each intersecting street. Storm drains along rear of residential lots (through back yards) shall be avoided. Easements shall be a minimum of fifteen (15) feet in width with an additional two (2) feet of easement for every one (1) foot of depth over eight (8) feet.
(2) All bends, wyes and pipe size changes in storm sewers shall occur at manholes/junction boxes unless otherwise approved by the City Engineer.
(3) Bedding of storm sewer shall be to the top of pipe.
(4) Storm drains shall have a minimum size of 15 inches in diameter.
(5) Junction boxes and manholes shall be reinforced concrete. Junction boxes in lieu of manholes shall be provided where any pipe opening exceeds thirty-six (36) inches and where the distance from the outside surfaces of any two pipes entering a manhole is less than one (1) foot, measured along the inside of the manhole.

### 1.2.4 Open Channel Sections

(1) Minor collector channels shall be constructed with underground storm sewers. If it can be established by certified engineering data to the satisfaction of the City Engineer that storm sewers are not physically feasible, open ditches may be used, provided that such ditches are lined properly with materials accepted by the City Engineer. These structures shall be of sufficient cross section and slope as to fully contain design flows and facilitate self cleaning. Outfalls shall enter major collector drainage ways and major streams at grade or be designed and constructed with adequate concrete aprons, energy dissipaters or similar features to prevent erosion.
(2) Major collector channels drainage ways, detention ponds and related structures may utilize either existing natural open sections which may be modified, or newly constructed facilities. If modified or newly constructed facilities are utilized, they shall be lined with permanent materials including, but not limited to: concrete or vegetation.
(3) Vegetated channels shall have sufficient grade but with velocities that will not be so great as to create erosion. Side slopes shall not be steeper than three (3) (horizontal) to one (1) (vertical) for channels four (4) feet or less in depth and no steeper than 4 to 1 in all other channels to allow for future growth and to promote slope stability. All slopes shall be hydromulched, sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.
(4) Discharge from storm sewer outfalls shall not cause channel, or stream bank erosion. If the storm drain discharges to an open drainage facility (as determined by the City), the applicant must show acceptable nonerosive conveyance to that drainage facility, appropriate energy dissipation at the outfall and a stable headwall.
(5) No area within the limits of construction of the development shall allow stormwater to become stagnant. Maximum retention or "draw-down" time for detention ponds shall not exceed twenty-four (24) hours from the time of peak storage

to the time of complete emptying of the pond, as determined by hydrograph routing or other calculations acceptable to the City. This requirement does not apply to facilities in which retention or "draw-down" time is required to be greater than twenty-four (24) hours.

## 1.3 Computations

1.3.1 Computations to support all drainage designs shall be submitted to the City Engineer for review. The computations shall be in such form as to allow for timely and consistent review and also to be made a part of the permanent city record for future reference. Computations shall demonstrate that as a result of the proposed development there will not be any adverse impact to downstream structures adjacent to the drainage for design storms up to the 100 year storm. All computations submitted shall be from a licensed Professional Engineer with expertise in the area of hydraulics and hydrology.

## 1.4 Development Within FEMA Flood Plains

1.4.1 Development Within Floodplains

(1) Federal Emergency Management Agency.

(i) The Federal Emergency Management Agency (FEMA) maintains Flood Insurance Rate Maps (FIRMs) that depict floodplain and floodway boundaries based on existing conditions of development in the contributing area.

(ii) FEMA revises or amends FIRMs by issuing of a Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR).FEMA establishes the process and fee schedule for review of LOMA or LOMR requests.

(2) Coordination of City of Muscle Shoals and FEMA Floodplain Delineations.

(i) If a LOMR is to be requested due to land development activities that alter existing conditions, then the following requirements are applicable:

1. The Property Owner must enter into a Letter Agreement with the City assuring that the proposed activities are consistent with existing plans and improvements of the City, that the City will request its consultant to prepare any studies, plans, proposals or applications to FEMA and that the City will incur no cost, expense or liability from the project.

2. The Property Owner must provide all information necessary for city review and submission to its consultation for preparation of the request and pay all costs, fees and expenses associated with the request.

(ii) If a LOMR-F is to be requested, due to land development activities that alter existing conditions, then the following requirements are applicable:

1. The Property Owner must complete an APPLICATION FOR PERMIT TO DEVELOP IN A SPECIAL FLOOD HAZARD AREA and an APPLICATION FOR A BUILDING PERMIT.Both permits

require submission of an ELEVATION CERTIFICATE based on construction drawings and completed by a Registered Land Surveyor or Licensed Engineer.

2. A second ELEVATION CERTIFICATE based on existing construction conditions must be submitted to the city: (1) for slab construction - after the slab form is set but prior to pouring or (2) for crawl space or stem wallconstruction – after the floor is framed or the form set but prior to erecting any walls to ensure compliance with floor elevation requirements of the Flood Damage Prevention Ordinance.The slab for all equipment servicing the building must alsocomply with elevation requirements of the ordinance.

3. A third ELEVATION CERTIFICATE based on finished construction must be submitted to the city to ensure compliance with Flood Damage Prevention Ordinance and prior to issuance of a Certificate of Occupancy. At the time the third ELEVATION CERTIFICATE is completed, the application to FEMA for a LOMR-F to remove the structure from the floodplain and avoid paying flood insurance can begin.

## 1.5 Site Grading Considerations

1.5.1 A comprehensive grading plan shall be included with subdivision or site construction plans.

1.5.2 The grading plan shall be designed to ensure all lots will adequately drain upon completion of the improvements.

1.5.3 Where practical, all lots shall be graded from rear to front at which point the drainage shall be intercepted by the street. Alternate grading schemes may be utilized if it can be demonstrated to the satisfaction of the City Engineer that grading from rear to front would be detrimental to trees or other natural features; or it would not be reasonably adaptable to the existing topography because of excessive cuts and fills, or future lot development (i.e. commercial, industrial or multi-family lots).

1.5.4 All lots shall be graded at a minimum of one (1) percent. Grading of lots with existing slopes of one (1) percent or greater will not be required provided the conditions under 1.5.3 above have been satisfied and it is demonstrated to the satisfaction of the City Engineer that there are no existing or proposed features that will prevent the lots from adequately draining.

1.5.5 Unless otherwise accepted by the City Engineer, surface swales shall be designed and provided along lot lines when more than two lots will be contributing to stormwater runoff at any given point. Side slopes for swales shall not exceed 10:1 (Horizontal: Vertical) unless otherwise accepted by the City Engineer.

1.5.6 Minimum finished floor elevations shall be shown for all lots. Such elevations shall be as required by the City of Muscle Shoals Flood Damage Prevention Ordinance (Ordinance No. 1421-10).

1.5.7 Blue tops shall be set at lot corners and other points to ensure grading is accomplished in accordance with the plan.

1.5.8 Following final grading, all exposed areas shall be permanently stabilized. Earthen areas shall be seeded or sodded and erosion controls shall remain in place until grass growth reaches one and one half (1½ ) inches, is of a density where it can be reasonably expected to be self-sustaining, and there are no bare areas in excess of ten (10) square feet.

## 1.6 Erosion Control

1.6.1 Silt fences, sedimentation basins, stabilized construction entrances/exits and similar recognized techniques shall be employed during and after construction to prevent point source sedimentation loading of downstream facilities. Such installations shall be to the satisfaction of the City Engineer. Additional measures may be required during and after construction if, in the opinion of the City Engineer, they are warranted.

1.6.2 All disturbed and exposed areas due to construction shall be permanently stabilized. All such areas shall be dressed with topsoil and vegetated by seeding or sodding as appropriate. Where the City Engineer determines that future maintenance is materially impaired or erosion is a distinct possibility, the developer shall be required to use concrete or similar permanent cover in lieu of vegetation. Erosion control matting (either pre-seeded or seeded after placement) may also be required if the City Engineer determines that such protection of slopes is required to ensure that seeding or soil will not wash off of slopes.

1.6.3 The developer of a proposed development shall submit to the Muscle Shoals Planning Commission with the construction plans four copies of a plan to control erosion on the site of the proposed subdivision. Said plan shall be prepared by the subdivider's engineer according to the best available practices of sediment and erosion control and shall consist of a map(s) and a description of the premises setting forth the proposed (a) improvements to be constructed, (b) changes to be made in the contours of the site, and(c) removal or destruction of the natural topsoil, trees, or other natural vegetation on the said described premises.

1.6.4 The City Engineer shall review said sediment and erosion control plan and submit written comments to the Muscle Shoals Planning Commission prior to presentation of the construction plans for approval. Written comments shall specifically state the acceptability of the plan, non-acceptability, or any necessary changes to insure adequate erosion control. The City Engineer shall also submit written comments to the Muscle Shoals Planning Commission, prior to presentation of a final plat for approval, stating that the sediment and erosion control plan has been carried out in substantial compliance with this section or that the subdivider has failed to comply. Where the City Engineer's comments or other validated evidence indicates that the subdivider has not carried out the approved sediment and erosion control plan the Muscle Shoals Planning Commission shall not grant final approval of the subdivision.

# Section 2 Submittal Requirements and Computation Methods

2.1 Plan Requirements

2.1.1 A site development plan shall be required for any site development except when:

(1) The developed area is used for gardening or agricultural purposes;

(2) The proposed work does not, in the opinion of the Building Department, affect the drainage on the site.

2.1.2 Development plan requires plans showing existing and proposed 1-foot contours as they relate to the roadway, parking lot, drainage facilities, cut and fill slopes, all stormwater pipe size, material and location, identification of all areas of depression, blue-line streams, easements, erosion and sediment control measures, detention pond data including size, location, slope of bottom, outlet, invert, top elevations, spillway size and elevation, and the detention easement and an adequately sized traversable access easement. Also, catch basin location, elevation, slope, swales, ditches, and their stabilization treatment. When this site development plan includes a street to be dedicated to the city, a complete set of roadway plans must be submitted including profiles, grades, and cross sections showing cross slope, and limits of construction. All Development plans that are submitted to the Building Department must meet the following minimum standards:

(1) Must contain the following certification from the design engineer .

(i) The Engineer of Record for this project assumes full responsibility for the design shown hereon and the effects thereof. The City by reviewing this information assumes no responsibility for any unforeseen negative impacts to adjoining or downstream property owners.

(2) Stamp and signature from appropriate design professional;

(3) Constructible plans;

(4) All required hydraulic and hydrologic calculations with reasonable assumptions;

(5) Pre- and post-developed contours;

(6) Erosion and sediment control plan;

(7) Required retaining wall calculations (if any);

(8) Owner's, and if applicable Lessee's, name, address, and phone number;

(9) Vicinity map;

2.1.3 Plans that do not meet these minimum standards will be rejected, and will not be reviewed further until submission standards are met.

## 2.2 Drainage Report Requirements

2.2.1 Drainage report must be submitted with any proposed project and must address the calculations and requirements set forth in this section. The report must be prepared by a Professional Engineer licensed by the State of Alabama that is proficient in hydraulics and hydrology. The report must address any possible downstream impacts of the proposed development and mitigation of those impacts if required.

## 2.3 Hydrology Methods

2.3.1 Consideration of peak runoff rates for design conditions is generally adequate for

conveyance systems such as storm sewers or open channels. However, if the design includes flood routing, detention ponds, retention ponds, etc. a flood hydrograph is usually required.

2.3.1 Rational Method

(1) The rational method is generally acceptable for the determination of peak flows from watersheds smaller than 50 acres. This method is not acceptable for detention/retention pond sizing, or evaluation.

2.3.2 NRCS Unit Hydrograph Method

(1) The NRCS Unit Hydrograph method is specifically cited for drainage computations, using 24-hour Type II rainfall distribution and AMC II soil conditions. The NRCS method shall be used to compute a peak flow for sizing all stormwater conveyances or to generate a hydrograph for the purposes of detention/retention routing. The NRCS Unit Hydrograph method shall be used for all design calculations, but other methods may be consulted for sizing stormwater conveyances (particularly if conservative values and assumptions are used).

The NRCS was formerly called the Soil Conservation Service (SCS), part of the United States Department of Agriculture. The TR-55 publication (Urban Hydrology for Small Watersheds) is the principal technical reference to be downloaded from NRCS:
http://www.wsi.nrcs.usda.gov/products/w2q/h&h/docs/other/TR55_documentation.pdf

2.3.3 The maximum sheet flow length to be used shall be $\leq$100 feet.

## 2.4 Functional Design of Stormwater Drainage Systems

2.4.1 In selecting the design frequency storm, the following criteria (listed in the order of being progressively more restrictive) will be used:
2.4.2 Longitudinal side drains shall be designed for a 10-year frequency flood, providing that no residential or commercial structures are flooded by a 100-year flood.
2.4.3 Roadway cross-drains for all local streets and collector streets shall be designed for a 10-year frequency flood, providing that no structures are flooded by a 100-year flood.

## 2.5 Design of Open Channels

2.5.1 Manning's equation is the principal means for determining flow capacity and velocity in open channels. Open channels shall be designed according to the "Design of Roadside Channels with Flexible Linings Hydraulic Engineering Circular Number 15, Third Edition (HEC 15). This guide can be downloaded at the following address:
http://www.fhwa.dot.gov/engineering/hydraulics/pubs/05114/index.cfm

## 2.6 Design of Curb and Grate Inlets

2.6.1 Use of the City of Muscle Shoals standard inlets (see City of Muscle Shoals Construction Specifications) or ALDOT standard inlets is required within all public rights-of-way or drainage easements. Use of standard inlets on private property is encouraged for reasons of structural reliability, ease of maintenance, common availability and standardized installation methods. The designer must locate street inlets to quickly drain stormwater from paved surfaces, keeping streets passable and safe for vehicular traffic. Street inlets must be spaced and located in a manner to carefully balance vehicle safety, drainage system capacity, economics and efficiency. Maximum inlet spacing is generally 300 feet unless proven otherwise by computations. Inlets should be located at uphill corners of each street intersection to prevent sheet flow of stormwater. The basic geometry of stormwater flow along curbs is a thin shallow triangular cross-sectional area. If the section contains curb and gutter, then the stormwater flow is a composite shape formed by both concrete and asphalt surfaces, for which Manning's equation is still applicable. Based upon the longitudinal slope of the gutter and the cross slope of the street, the gutter flow will spread across the street. The spread impacts vehicular traffic in a negative way, causing vehicles to hydroplane or to pull in one direction. Basic references for computing spreads, inlet capacities, and interception rates for curb and grate inlets are FHWA Hydraulic Engineering Circular No. 12, Drainage of Highway Pavements (March 1984), or FHWA Hydraulic Engineering Circular No. 22, Urban Drainage Design Manual (November 1996). Both references can be downloaded in Acrobat format at the FHWA website: http://www.fhwa.dot.gov/engineering/hydraulics/highwaydrain/index.cfm

2.6.2 Detailed inlet computations are usually not required for local residential streets and alleys, except at sag locations where potentially inadequate inlets could flood nearby houses and buildings. Slow design speeds on local streets usually minimize the impact of spread and hydroplaning, although local streets do tend to have steeper approach slopes for intersections. Typical considerations for inlet design include:

2.6.3 Place inlets at all sag locations and other depressed areas to ensure positive drainage. Ensure that ponded water does not flood nearby structures, buildings, or houses. Flanking inlets, at an offset distance of 25' or 50', are desirable in sag locations with large flow rates.

2.6.4 Place inlets at street intersections to prevent stormwater from flowing across a street or entrance. This is particularly important wherever a local street intersects a larger street, such as a collector or arterial. Valley gutters across street intersections are not encouraged, unless specifically used for very short streets or cul-de-sacs.

2.6.5 Maintain a minimum curb and gutter longitudinal slope of 0.5% to keep positive drainage. When designing a flat stretch of street, the street designer may incorporate a gently rolling vertical profile to maintain positive drainage (along with placement of additional inlets). The designer is cautioned that the use of long vertical curves is discouraged in areas with minimum slopes.

## 2.7 Design of Storm Drainage Systems

2.7.1 Manning's equation is typically used to compute non-pressurized flow in pipes and storm drainage systems where inlets and headwalls are closely spaced to allow atmospheric pressure throughout the entire system. Computations for each pipe should be performed

systematically (such as in a table) and include the drainage area, design flow, velocity, capacity, diameter or size, slope, length, construction material, upstream and downstream inlets, etc. Computations should also include one or more maps and drawings to show drainage areas, impervious surfaces, slopes, land cover, paths for computing time of concentration, and any offsite areas that contribute flow. Minimum size diameter of storm drainage pipes is 15 inches. For allowable types of pipe see the City of Muscle Shoals Construction Specifications. Computation of the hydraulic grade line (HGL) may be required by the Engineer, particularly if pipes are designed without excess capacity, pipes are placed at steep slopes with high velocities, the outfall is submerged, or if there are excessive deflection angles in the stormwater drainage system. Excessive velocities should be avoided to prevent HGL problems and the potential for erosion. Minimum design velocities should be at least 3 feet per second to ensure that a storm drainage system has some capability for self-cleaning.

## 2.8 Design of Culverts

2.8.1 A culvert is a single drainage pipe, not part of an enclosed system, which has a pipe or box opening as the inlet condition. Allowable flow within culverts are subject to inlet control, outlet control, or some combination of the two controls. Culvert design is performed using FHWA Hydraulic Design Series No. 5, Hydraulic Design of Highway Culverts (September 1985), which can be downloaded at http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=7&id=13 as an Adobe Acrobat document. Considerations in culvert design include analysis of open channels at both ends of the culvert, potential for storage or channel routing, and design of energy dissipators and outlet protection. Head loss can be reduced by using headwalls, wingwalls, mitered slopes, and tapered inlets; refer to Hydraulic Design Series No. 5 for more details concerning culvert design. Considerations for determining the allowable headwater are potential for upstream property damage, road overtopping, erosion potential, human safety, and whether wingwalls and headwalls are designed as part of the culvert. Minimum size diameter for culverts is 15 inches.

## 2.9 Hydraulic Grade Line Computations

2.9.1 Where the hydraulic grade line (HGL) is deemed to be critical by the City Engineer or his representative, the HGL shall be computed. HGL computations must be performed by a registered engineer using principles of hydrology and hydraulics, and basic formulas such as conservation of momentum and energy, continuity of flow, and types of flow classification.

## 2.10 Analysis of Downstream System

2.10.1 Discharge from a developed site (typically a stormwater detention or retention basin) must be routed to an existing natural or manmade stormwater pipe or channel with adequate capacity. Calculations must be submitted that show the capacity of the receiving stormwater pipe or channel to handle the design storms. The first reason for analysis of the downstream system is to ensure that known flooding problems are not exacerbated. Stormwater detention basins are always designed so that the peak flow discharge is not increased. This means that

the immediate downstream receiving channel, if it currently has adequate capacity, will continue to be adequate. However, if the stormwater detention basin causes a longer duration for peak or near-peak flows, then flooding could occur in locations where it did not occur before. The second reason for analysis of the downstream system is to determine any backwater effects on the detention outlet structure and embankment. In most situations, the design engineer assumes inlet control conditions for the detention basin control structure, which must be verified to ensure that the detention basin operates as designed.

2.10.2 If no existing natural or manmade stormwater channel exists downstream the discharge must be returned to a sheet flow condition before it is discharged. The location of the discharge onto the downstream property must be in a similar location as the predevelopment discharge.

## Section 3 STORMWATER DETENTION/RETENTION AND MAINTENANCE

### 3.1 Stormwater Detention and Retention

3.1.1 General

(1) For the purposes of this ordinance, retention refers to storage without access to a positive outlet, and detention refers to temporary storage facilities with a controlled release of the stored water. Retention and detention can be used separately or together in storage basins as site conditions require.

(2) Stormwater detention is typically not required in the following two situations:

(i) The project site discharges stormwater runoff directly into a City of Muscle Shoals retention pond or City of Muscle Shoals pipe system with adequate capacity for the additional stormwater.

(ii) Stormwater detention for a project site is either unwarranted or impractical. The engineer must submit complete hydrologic and hydraulic computations to support this conclusion. Typically this might occur in the very lowest downstream reaches of a major watershed, if it can be proved that undetained stormwater should be discharged quickly to avoid the peak discharge timing for the entire watershed.

(3) All detention computations must use NRCS design methods with Type II 24-hr storm and average antecedent moisture conditions (AMC II)

### 3.2 Design Criteria for Sizing Detention Structures

3.2.1 All stormwater detention structures must attenuate the post development peak flow rates from the 2-year, 5-year, 10-year and 25-year NRCS 24-hour design storms to discharge at or below predevelopment peak flow rates. The purpose for detention structures is to slow or attenuate the peak flows downstream by controlling the release rate. The post development peak outflow rate is limited to the predevelopment peak outflow rate as the basis of detention design.

3.2.2 The calculations shall include sufficient design information to show that the facility will operate as required. This shall include the existing (or before site development) peak flow

discharges, the after site development peak flow discharges, and/or volumes of stormwater runoff based on the proposed site development, as well as all necessary computations used to determine the reduced peak flow rates for the design storms. The capacity of the facility shall be sufficient to control the volume of stormwater runoff resulting from 2-year, 5-year, 10-year, and 25-year frequency 24-hour duration storms. The facility must be designed to pass a 100-year storm without damaging the facility.

3.2.3 Discharge from the stormwater detention pond shall be routed to a ditch, channel, or stormwater facility of adequate capacity. Calculations showing the capacity of the receiving stormwater facility and its capability to convey a 10-year frequency storm shall be provided. The City Engineer has authority to condition the approval upon the compliance with additional requirements, including but not limited to correctly sizing and installing offsite conveyance facilities or other stormwater management solutions required to reduce the adverse impact of the proposed development on other properties or the development.

## 3.3 Design Standards for Detention/Retention Facilities

3.3.1 A retention basin should be sized so that the volume of the excavated material from the pond is equal to the difference between the pre-development and post-development runoff volume from the development. The volume calculation should be based on a 25 year 24 hour rainfall event. A 100 year 24 hour rainfall event should also be analyzed to ensure that no structures or roadways will be inundated.

3.3.2 Adequate attention must be given to safety and sanitation in the design of any detention/retension facility. This includes, but is not limited to, a minimum of 2% slope in the bottom of all detention ponds, a minimum of 3:1 (H:V) side slopes or with traversable access to the pond's vegetated bottom and side slopes for maintenance, an exception can be made to the minimum slope requirement in the bottom of the pond if the pond invert is finished in concrete.

3.3.3 Detention/Retention ponds that are to be fully maintained by the City of Muscle Shoals must also meet the following requirements:

(1) Have a minimum surface area of 5 acres.

(2) Side slopes should have a 3:1 maximum slope. Where depths exceed 10 feet slopes should be benched at intervals to help prevent erosion.

(3) 6' high commercial grade chain link fencing with 3 strands of barb wire (7 foot total height) shall be installed around the perimeter of the basin.

(4) The City may require the pond bottom to have a concrete flume on grade to the discharge point or the low point in the pond.

(5) The basin must be accessible from a public street.

(6) A 14' double swing gate shall be installed at the access point.

(7) Rip-rap and geotechnical fabric with concrete binder shall be placed at all points where a concentrated source of water enters the basin (i.e. pipes, ditches, etc.). The edge of the rip-rap should be finished flush with the slopes and bottom for access by mowing equipment.

(8) All basins to be sodded with hybrid Bermuda sod (sod to be approved by the city prior to placement). In retention ponds the City may waive the requirement for sod in areas that will likely remain inundated.

(9) A minimum of 1 foot of freeboard shall be provided above the high water elevation of the design rainfall event.
(10) The maximum depth of the basin should be consistent with safety and aesthetic considerations for the system.
(11) Developer shall provide an "As Built Survey" of the basin to the city for filing. If pumps are used, the city shall dictate the type and quality of pumps and motors. O & M manuals shall be provided.

**3.4 Facility Maintenance**

3.4.1 Permanent Maintenance Agreements
(1) If there is a stormwater detention facility shown on the design plans, the City requires that the current property owner (as well as any future owners of this property) enter into a permanent maintenance agreement with the City of Muscle Shoals.
3.4.2 Facility Access and Easements
(1) Adequate easements shall be provided for maintenance whether the facility is publicly or privately maintained.
(2) Facility easements: Encompasses the entire stormwater detention basin.
(3) Access easements: Provides access to the facility easement, if the easement is not immediately adjacent to the public right-of-way (minimum 20' wide).
(4) The City of Muscle Shoals is not responsible for damage to any structures, utilities or vegetation located within a facility access easement, whenever such access is deemed necessary by city inspection personnel. The City of Muscle Shoals is not responsible for repair or replacement of structures, utilities and vegetation. A facility access easement is normally intended for heavy equipment access rather than ordinary passenger vehicle access. A city inspector will normally gain access to a detention basin by parking nearby.

**3.5 Facility Construction Requirements**

3.5.1 All stormwater pipes, structures, ditches, facilities, etc., shall be constructed in accordance with the City of Muscle Shoals Construction Specifications Manual, Latest Edition.

**BE IT FURTHER ORDAINED** that the provisions of this Ordinance are severable. If any part of this Ordinance is declared or determined to be invalid or unconstitutional, such declaration or determination shall not affect the part that remains.

**BE IT FURTHER ORDAINED** that a copy of the Drainage Specifications thereto shall be kept and maintained in the Office of the City Clerk.

**BE IT FURTHER ORDAINED** that this Ordinance, and its provisions, shall become effective on the 21st day of November, 2011 upon publication or posting pursuant to law or as otherwise provided for by law.

_____

Council Member Grissom moved for immediate consideration of the ordinance. Council Member Noles seconded the motion and upon said motion being put to a vote, a roll call was had and the vote was recorded as follows:

AYES: Council Member Pampinto, Council Member Willis,
Council Member Grissom, Council Member Holland, Council Member Noles,
Mayor Bradford

NAYS: None

Mayor Bradford announced the vote and declared that the motion for unanimous consent for immediate consideration had been approved. Council Member Grissom then moved that the said ordinance be finally adopted, which motion was seconded by Council Member Noles and, upon said motion being put to a vote, a roll call on final approval was had and the vote recorded as follows:

AYES: Council Member Pampinto, Council Member Willis,
Council Member Grissom, Council Member Holland, Council Member Noles,
Mayor Bradford

NAYS: None

Mayor Bradford thereupon declared said motion carried and that the Ordinance had been approved.

Mayor Bradford announced that the next item of business was consideration of a resolution to request inclusion of certain city streets in the Federal Highway Administration's Functional Classification System.

Council Member Noles introduced the following resolution and moved for its adoption:

STATE OF ALABAMA
COLBERT COUNTY

## RESOLUTION NUMBER 2517 - 11

**WHEREAS**, the Federal Highway Administration has established a Functional Classification System for streets and roads to determine eligibility for federal funding, and

**WHEREAS**, the City of Muscle Shoals would like to request approval by the Federal Highway Administration of additional city streets for inclusion in this system, and

**WHEREAS**, these streets are John R Street from Sixth Street to Second Street, Highland Avenue from Woodward Avenue to Harding Avenue, and Ford Street from Walmart to Second Street, now

**THEREFORE BE IT RESOLVED**, by the City Council of the City of Muscle Shoals, Alabama that a written request be submitted to the Federal Highway Administration seeking their approval of the designation of Collector Urban for the above named streets.

_____

Council Member Willis seconded the motion and upon said motion being put to a vote, all voted "AYE" and "NAYS" were none.

Mayor Bradford announced that the Resolution had been approved.

Mayor Bradford announced that the next item of business was consideration a resolution to make an appointment to the Colbert County Tourism and Conventions Bureau Board. Council Member Noles introduced the following resolution and moved for its adoption:

STATE OF ALABAMA
COLBERT COUNTY

# RESOLUTION NUMBER 2518 - 11

**WHEREAS,** the term of a member of the Colbert County Tourism and Conventions Bureau Board has expired and the City Council being desirous of making the necessary appointment to said board within the City;

**WHEREAS**, notice was given to the public of said pending vacancy and applications solicited for members to said board;

**WHEREAS**, the following individual made proper application and met the requirements for appointment, is eligible for appointment to fill the pending vacancy:

Anita Crittenden

**WHEREAS**, Anita Crittenden was the lone applicant and being otherwise qualified for appointment, and

**WHEREAS**, a roll call vote was had by the Mayor and City Council as follows:

Council Member Pampinto: Anita Crittenden
Council Member Willis: Anita Crittenden
Council Member Grissom: Anita Crittenden
Council Member Holland: Anita Crittenden
Council Member Noles: Anita Crittenden
Mayor Bradford: Anita Crittenden

**WHEREAS**, Mayor Bradford announced that Anita Crittenden had received a majority of the votes cast, now

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Muscle Shoals, Alabama does hereby appoint the following named person to serve as set forth herein:

| APPOINTEE | BOARD | EXPIRATION OF TERM |
|---|---|---|
| Anita Crittenden | Tourism Board | October 2016 |

The Clerk is hereby directed to notify the above named person of their appointment and to further notify the respective board of said appointment.

Council Member Willis seconded the motion and upon said motion being put to a vote, all voted "AYE" and "NAYS" were none.

Mayor Bradford announced that the Resolution had been approved.

Mayor Bradford announced that the next item of business was consideration a resolution to make two (2) appointments to the Public Library Board.

Council Member Noles introduced the following resolution and moved for its adoption:

STATE OF ALABAMA
COLBERT COUNTY

# RESOLUTION NUMBER 2519 - 11

**WHEREAS,** vacancies on the Library Board of the City of Muscle Shoals have occurred and the City Council being desirous of making the necessary appointments to said board within the City;

**WHEREAS**, notice was given to the public of said pending vacancies and applications solicited for members to said board;

**WHEREAS**, the following individuals made proper application and met the requirements for appointment and are eligible for appointment to fill the pending vacancies:

Stacey Hughes Lucy Heidorn Doris McDaniel

**WHEREAS**, Lucy Heidorn and Doris McDaniel were determined to have received the best overall rankings on the City Council evaluations, and

**WHEREAS**, a roll call vote was had by the Mayor and City Council as follows:

Council Member Pampinto: Lucy Heidorn and Doris McDaniel
Council Member Willis: Lucy Heidorn and Doris McDaniel
Council Member Grissom: Lucy Heidorn and Doris McDaniel
Council Member Holland: Lucy Heidorn and Doris McDaniel
Council Member Noles: Lucy Heidorn and Doris McDaniel
Mayor Bradford :Lucy Heidorn and Doris McDaniel

**WHEREAS**, Mayor Bradford announced that Lucy Heidorn and Doris McDaniel had received a majority of the votes cast, now

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Muscle Shoals, Alabama does hereby appoint the following named persons to serve as set forth herein:

| APPOINTEE | BOARD | EXPIRATION OF TERM |
|---|---|---|
| Lucy Heidorn | Library Board | November 2015 |
| Doris McDaniel | Library Board | November 2015 |

The Clerk is hereby directed to notify the above named persons of their appointment and to further notify the respective board of said appointment.

Council Member Willis seconded the motion and upon said motion being put to a vote, all voted “AYE” and “NAYS” were none.

Mayor Bradford announced that the Resolution had been approved.

Mayor Bradford announced that the next item of business was consideration of an ordinance to amend the Flood Damage prevention Ordinance #1421-10.

Council Member Willis introduced the following ordinance in writing which was read at length and moved for its immediate consideration:

# ORDINANCE NO. 1439 - 11

## AN ORDINANCE PROVIDING FOR FLOOD DAMAGE PREVENTION IN THE CITY OF MUSCLE SHOALS, ALABAMA

**BE IT ORDAINED** by the Council of the City of Muscle Shoals, Alabama that Ordinance Number 1391-07 approved and adopted by the City Council of the City of Muscle Shoals, Alabama on June 18, 2007 and as amended by Ordinance Number 1421-10 approved and adopted by the City Council of the City of Muscle Shoals, Alabama on February 15, 2010 is hereby amended to read in its entirety as follows, to wit:

### ARTICLE 1. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE, AND OBJECTIVES

### SECTION A. STATUTORY AUTHORIZATION

The Legislature of the State of Alabama has in Title 11, Chapter 19, Sections 1-24, Chapter 45, Sections 1-11, Chapter 52, Sections 1-84, and Title 41, Chapter 9, Section 166 of the Code of Alabama, 1975, authorized local government units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Council of the City of Muscle Shoals, Alabama, does ordain as follows:

### SECTION B. FINDINGS OF FACT

(1) The flood hazard areas of Muscle Shoals, Alabama are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood relief and protection, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

(2) These flood losses are caused by the occupancy in flood hazard areas of uses vulnerable to floods, which are inadequately elevated, flood proofed, or otherwise unprotected from flood damages, and by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities.

### SECTION C. STATEMENT OF PURPOSE

It is the purpose of this ordinance to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

(1) require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

(2) restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which increase flood heights, velocities, or erosion

(3) control filling, grading, dredging and other development which may increase flood damage or erosion, and;

(4) prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands;

(5) control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters.

**SECTION D. OBJECTIVES**

The objectives of this ordinance are:

(1) to protect human life and health;

(2) to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;

(3) to help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize flood blight areas,

(4) to minimize expenditure of public money for costly flood control projects;

(5) to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(6) to minimize prolonged business interruptions, and;

(7) to insure that potential home buyers are notified that property is in a flood area.

## ARTICLE 2. GENERAL PROVISIONS

### SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES

This ordinance shall apply to all Areas of Special Flood Hazard within the jurisdiction of Muscle Shoals, Alabama.

**SECTION B. BASIS FOR AREA OF SPECIAL FLOOD HAZARD**

The Areas of Special Flood Hazard identified by the Federal Emergency Management Agency in its Flood Insurance Study (FIS), dated May 3, 1993, with accompanying maps and other supporting data and any revision thereto, are adopted by reference and declared a part of this ordinance.

**SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT**

A Development Permit shall be required in conformance with the provisions of this ordinance PRIOR to the commencement of any Development activities.

**SECTION D. COMPLIANCE**

No structure or land shall hereafter be located, extended, converted or altered without full compliance with the terms of this ordinance and other applicable regulations.

**SECTION E. ABROGATION AND GREATER RESTRICTIONS**

This ordinance is not intended to repeal, abrogate, or impair any existing ordinance, easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

**SECTION F. INTERPRETATION**

In the interpretation and application of this ordinance all provisions shall be: (1) considered as minimum requirements; (2) liberally construed in favor of the governing body, and; (3) deemed neither to limit nor repeal any other powers granted under state statutes.

**SECTION G. WARNING AND DISCLAIMER OF LIABILITY**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur; flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Areas of Special Flood Hazard or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Muscle Shoals, Alabama or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

**SECTION H. PENALTIES FOR VIOLATION**

Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than

$500.00 or imprisoned for not more than 180 days, or both, and in addition, shall pay all costs and expenses involved in the case: Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Muscle Shoals, Alabama, from taking such other lawful actions as is necessary to prevent or remedy any violation.

## ARTICLE 3. ADMINISTRATION

### SECTION A. DESIGNATION OF ORDINANCE ADMINISTRATOR

The City Clerk's Office is hereby appointed to administer and implement the provisions of this ordinance.

### SECTION B. PERMIT PROCEDURES

Application for a Development Permit shall be made to the Administrator on forms furnished by the community **PRIOR** to any development activities, and may include, but not be limited to the following: Plans in duplicate drawn to scale showing the elevations of the area in question and the nature, location, dimensions, of existing or proposed structures, earthen fill placement, storage of materials or equipment, and drainage facilities.

Specifically, the following information is required:

(1) Application Stage -

(a) Elevation in relation to mean sea level (or highest adjacent grade) of the regulatory lowest floor level, including basement, of all proposed structures;

(b) Elevation in relation to mean sea level to which any non-residential structure will be flood proofed;

(c) Design certification from a registered professional engineer or architect that any proposed non-residential flood-proofed structure will meet the flood-proofing criteria of Article 4, Sections B(2) and D(2);

(d) Design certification from a registered professional engineer or architect that any new construction or substantial improvement placed in a Coastal High Hazard Area will meet the criteria of Article 4, Section E(5);

(e) Description of the extent to which any watercourse will be altered or relocated as a result of a proposed development, and;

(2) Construction Stage -

For all new construction and substantial improvements, the permit holder shall provide to the Administrator an as-built certification of the regulatory floor elevation or flood-proofing level using appropriate FEMA elevation or flood-proofing certificate immediately after the lowest floor or flood proofing is completed. When flood proofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.

Any work undertaken prior to submission of these certifications shall be at the permit holder's risk. The Administrator shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being allowed to proceed. Failure to submit certification or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

**SECTION C. DUTIES AND RESPONSIBILITIES OF THE ADMINISTRATOR**

Duties of the Administrator shall include, but shall not be limited to:

(1) Review all development permits to assure that the permit requirements of this ordinance have been satisfied;

(2) Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.

(3) When Base Flood Elevation data or floodway data have not been provided in accordance with Article 2 Section B, then the administrator shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other sources in order to administer the provisions of Article 4.

(4) Verify and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the regulatory floor level, including basement, of all new construction or substantially improved structures in accordance with Article 3 Section B(2) .

(5) Verify and record the actual elevation, in relation to mean sea level to which any new or substantially improved structures have been flood-proofed, in accordance with Article 4, Sections B (2) and D (2).

(6) When flood proofing is utilized for a structure, the Administrator shall obtain certification of design criteria from a registered professional engineer or architect in accordance with Article 3(B)(1)(c) and Article 4(B)(2) or (D)(2).

(7) Notify adjacent communities and the Alabama Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA), and the Alabama Department of Economic and Community Affairs/Office of Water Resources.

(8) For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to the FEMA and State to ensure accuracy of community flood maps through the Letter of Map Revision process. Assure flood carrying capacity of any altered or relocated watercourse is maintained.

(9) Where interpretation is needed as to the exact location of boundaries of the Areas of Special Flood Hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Administrator shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Ordinance.

(10) All records pertaining to the provisions of this ordinance shall be maintained in the office of the Administrator and shall be open for public inspection.

## ARTICLE 4. PROVISIONS FOR FLOOD HAZARD REDUCTION

### SECTION A. GENERAL STANDARDS

In ALL Areas of Special Flood Hazard the following provisions are required:

(1) New construction and substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;

(2) New construction and substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;

(3) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;

(4) Elevated Buildings - All New construction or substantial improvements of existing structures that include ANY fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished or flood resistant enclosure. The enclosure shall be designed to

equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters.

(a) Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:

(i) Provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;

(ii) The bottom of all openings shall be no higher than one foot above grade; and,

(iii) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.

(b) So as not to violate the "Lowest Floor" criteria of this ordinance, the unfinished or flood resistant enclosure shall only be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area; and,

(c) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.

(5) All heating and air conditioning equipment and components, all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(6) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable State requirements for resisting wind forces.

(7) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(8) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

(9) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding, and;

(10) Any alteration, repair, reconstruction or improvement to a structure which is not compliant with the provisions of this ordinance, shall be undertaken only if the non- conformity is not furthered, extended or replaced.

**SECTION B. SPECIFIC STANDARDS**

In ALL Areas of Special Flood Hazard designated as A1-30, AE, AH, A (with estimated BFE), the following provisions are required:

(1) New construction and substantial improvements - Where base flood elevation data are available, new construction or substantial improvement of any structure or manufactured home **shall have the lowest floor, including basement, elevated no lower than TWO (2) FEET above the base flood elevation for residential and ONE (1) FOOT for any other structures..** Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Article 4, Section A(4), "Elevated Buildings."

(2) Non-Residential Construction - New construction or the substantial improvement of any non-residential structure located in A1-30, AE, or AH zones, may be flood-proofed in lieu of elevation. **The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to ONE (1) FOOT above the base flood elevation,** with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and in Article 3, Section C (6).

(3) Standards for Manufactured Homes and Recreational Vehicles - Where base flood elevation data are available:

(a) All manufactured homes placed or substantially improved on: (i) individual lots or parcels, (ii) in new or substantially improved manufactured home parks or subdivisions, (iii) in expansions to existing manufactured home parks or subdivisions, or (iv) on a site in an existing manufactured home park or subdivision where a manufactured home has incurred "substantial damage" as the result of a flood, must have the lowest floor including basement elevated no lower than one feet above the base flood elevation.

(b) Manufactured homes placed or substantially improved in an existing manufactured home park or subdivision may be elevated so that either:

(i) The lowest floor of the manufactured home is elevated no lower than one foot above the level of the base flood elevation, or

(ii) Where no Base Flood Elevation exists, the manufactured home chassis and supporting equipment is supported by reinforced piers or other foundation elements of at least equivalent strength and is elevated to a minimum of 60 inches (five feet) to meet the State standard required by the Alabama Manufactured Housing Commission;

(c) All Manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement. (Refer to Article 4, Section A above)

(d) All recreational vehicles placed on sites must either:

(i) Be on the site for fewer than 180 consecutive days, fully licensed and ready for highway use if it is licensed, on it's wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions; or

(ii) The recreational vehicle must meet all the requirements for "New Construction," including the anchoring and elevation requirements of Article 4 Section B (3)(a)(c), above.

## Section C Floodways

(1) **Floodway**: Located within Areas of Special Flood Hazard established in Article 2, Section B, are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity floodwaters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

(a) The community shall select and adopt a regulatory floodway based on the principle that the area chosen for the regulatory floodway must be designed to carry the waters of the base flood, without increasing the water surface elevation of that flood more than one foot at any point;

(b) Encroachments are prohibited, including fill, new construction, substantial improvements or other development within the adopted regulatory floodway. Development may be permitted however, provided it is

demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof;

(c) Require, until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(d) **ONLY** if Article 4 (C)(1)(b), or (c), above are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Article 4.

**SECTION D. BUILDING STANDARDS FOR STREAMS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS AND/OR FLOODWAY (A-ZONES)**

Located within the Areas of Special Flood Hazard established in Article 2, Section B, where streams exist but no base flood data have been provided (A-Zones), OR where base flood data have been provided but a Floodway has not been delineated, the following provisions apply:

(1) When base flood elevation data or floodway data have not been provided in accordance with Article 2(B), then the Administrator shall obtain, review, and reasonably utilize any scientific or historic Base Flood Elevation and floodway data available from a Federal, State, or other source, in order to administer the provisions of Article 4. ONLY if data are not available from these sources, then the following provisions (2&3) shall apply:

(2) No encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty-five feet, whichever is greater, measured from the top of the stream bank, unless certification by a registered professional engineer is provided demonstrating that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(3) All development in Zone A must meet the requirements of Article 4, Section A and Section B (1) through (3).

(4) In special flood hazard areas without base flood elevation data, new construction and substantial improvements of existing structures shall have the lowest floor of

the lowest enclosed area (including basement) elevated no less than three (3) feet above the highest adjacent grade at the building site. Also, in the absence of a base flood elevation, a manufactured home must also meet the State of Alabama Manufactured Housing Commission elevation requirements of Article 4, Section B, Paragraph (3)(b)(ii) in that the structure must be elevated a minimum of 60 inches (5 feet). Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Article 4, Section A (4) "Elevated Buildings".

The Administrator shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

**SECTION E. STANDARDS FOR AREAS OF SHALLOW FLOODING (AO ZONES)**

Areas of Special Flood Hazard established in Article 2, Section B, may include designated "AO" shallow flooding areas. These areas have base flood depths of one to three feet (1'-3') above ground, with no clearly defined channel. The following provisions apply:

(1) All new construction and substantial improvements of residential and non-residential structures shall have the lowest floor, including basement, elevated to the flood depth number specified on the Flood Insurance Rate Map (FIRM) above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least FIVE feet (5) above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Article 4, Section A(4), "Elevated Buildings".

The Administrator shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

(2) New construction or the substantial improvement of a non-residential structure may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus two (2) feet, above highest adjacent grade**,** with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and as required in Articles 3(B)(1)(c) and (3)(B)(2).

(3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

## SECTION F. STANDARDS FOR SUBDIVISIONS

(1) All subdivision proposals shall be consistent with the need to minimize flood damage;

(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and;

(4) Base flood elevation data shall be provided for subdivision proposals and all other proposed development, including manufactured home parks and subdivisions, greater than fifty (50) lots or five (5) acres, whichever is less.

## ARTICLE 5. VARIANCE PROCEDURES

(A) The Board of Zoning Adjustments as established by Muscle Shoals, Alabama, shall hear and decide requests for appeals or variance from the requirements of this ordinance.

(B) The board shall hear and decide appeals when an error is alleged in any requirement, decision, or determination made by the Administrator in the enforcement or administration of this ordinance.

(C) Any person aggrieved by the decision of the Board of Zoning Adjustments may appeal such decision to the Circuit Court as provided in (cite state statute.)

(D) Variances may be issued for the repair or rehabilitation of Historic Structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an Historic Structure and the variance is the minimum to preserve the historic character and design of the structure.

(E) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this Article are met, no reasonable alternative exists, and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

(F) Variances shall not be issued within any designated floodway if ANY increase in flood levels during the base flood discharge would result.

(G) In reviewing such requests, the Board of Zoning Adjustments shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this ordinance.

(H) **Conditions for Variances**:

(1) A variance shall be issued ONLY when there is:

(i) a finding of good and sufficient cause,

(ii) a determination that failure to grant the variance would result in exceptional hardship; and,

(iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

(2) The provisions of this Ordinance are minimum standards for flood loss reduction, therefore any deviation from the standards must be weighed carefully. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of an Historic Structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.

(3) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed lowest floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced lowest floor elevation.

(4) The Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the Alabama Department of Economic and Community Affairs/Office of Water Resources upon request.

(I) Upon consideration of the factors listed above and the purposes of this ordinance, the Board of Zoning Adjustments may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

## ARTICLE 6. DEFINITIONS

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

**"Addition (to an existing building)"** means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by an independent perimeter load-bearing wall shall be considered "New Construction".

**"Appeal"** means a request for a review of the Administrator interpretation of any provision of this ordinance.

**"Area of shallow flooding"** means a designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet, and/or where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

**"Area of special flood hazard"** is the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. In the absence of official designation by the Federal Emergency Management Agency, Areas of Special Flood Hazard shall be those designated by the local community and referenced in Article 2, Section B.

**"Base flood"** means the flood having a one percent chance of being equaled or exceeded in any given year.

**"Basement"** means that portion of a building having its floor subgrade (below ground level) on all sides.

**"Building"** means any structure built for support, shelter, or enclosure for any occupancy or storage.

**"Development"** means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, and permanent storage of equipment or materials.

**"Elevated building"** means a non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

**"Existing Construction"** Any structure for which the "start of construction" commenced before the effective date of the FIRST floodplain management code or ordinance adopted by

the community as a basis for that community's participation in the National Flood Insurance Program (NFIP)].

**"Existing manufactured home park or subdivision"** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads) is completed before the effective date of the FIRST floodplain management regulations adopted by a community].

**"Expansion to an existing manufactured home park or subdivision"** means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

**"Flood" or "flooding"** means a general and temporary condition of partial or complete inundation of normally dry land areas from:

a. the overflow of inland or tidal waters; or
b. the unusual and rapid accumulation or runoff of surface waters from any source.

**"Flood Hazard Boundary Map (FHBM)"** means an official map of a community, issued by the Federal Insurance Administration, where the boundaries of areas of special flood hazard have been designated as Zone A.

**"Flood Insurance Rate Map (FIRM)"** means an official map of a community, issued by the Federal Insurance Administration, delineating the areas of special flood hazard and/or risk premium zones applicable to the community.

**"Flood Insurance Study"** the official report by the Federal Insurance Administration evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

**"Floodplain"** means any land area susceptible to flooding.

**"Floodway" (Regulatory Floodway)** means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

**"Functionally dependent facility"** means a facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair facilities. The term does not include long-term storage, manufacture, sales, or service facilities.

**"Highest adjacent grade"** means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed walls of a structure.

**"Historic Structure"** means any structure that is;

a. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register:

b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district:

c. Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

d. Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

1. By an approved state program as determined by the Secretary of the Interior, or
2. Directly by the Secretary of the Interior in states without approved programs.

**"Levee"** means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

**"Levee System**" means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

**"Lowest floor"** means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this code.

**"Manufactured home"** means a building, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

**"Mean Sea Level"** means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of this ordinance, the term is synonymous with National Geodetic Vertical Datum (NGVD) of 1929 or other datum.

**"National Geodetic Vertical Datum (NGVD)"** as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

**"New construction"** means ANY structure (see definition) for which the "start of construction" commenced after the effective date of the FIRST floodplain management ordinance adopted by the community as a basis for community participation in the (NFIP)] and includes any subsequent improvements to such structures.

**"New manufactured home park or subdivision"** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the first floodplain management regulations adopted by a community].

**"Recreational vehicle"** means a vehicle that is:

a. Built on a single chassis;
b. 400 square feet or less when measured at the largest horizontal projection;
c. Designed to be self-propelled or permanently towable by a light duty truck; and
d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**"Remedy a violation"** means to bring the structure or other development into compliance with State or local flood plain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

**"Repetitive Loss"** means flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damages occurred.

**"Start of construction"** means the date the development permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit

date. The actual start means the first placement of permanent construction of the structure such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation, and includes the placement of a manufactured home on a foundation. (Permanent construction does not include initial land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure. (NOTE: accessory structures are NOT exempt from any ordinance requirements) For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

**"Structure"** means a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank.

**"Substantial damage"** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Substantial damage also means flood related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damages occurred.

**"Substantial improvement"** means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "repetitive loss" or "substantial damage", regardless of the actual repair work performed. The market value of the building should be (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures which have incurred "substantial damage", regardless of the actual amount of repair work performed.

For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or; (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

**"Substantially improved existing manufactured home parks or subdivisions"** is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

**"Variance"** is a grant of relief from the requirements of this ordinance that permits construction in a manner otherwise prohibited by this ordinance.

**"Violation"** means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in the Code of Federal Regulations (CFR) §44, Sec. 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) and corresponding parts of this ordinance is presumed to be in violation until such time as that documentation is provided.

**ARTICLE 7. SEVERABILITY**

If any section, clause, sentence, or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

Council Member Willis moved for immediate consideration of the ordinance. Council Member Holland seconded the motion and upon said motion being put to a vote, a roll call was had and the vote was recorded as follows:

AYES: Council Member Pampinto, Council Member Willis,
Council Member Grissom, Council Member Holland, Council Member Noles
Mayor Bradford

NAYS: None

Mayor Bradford announced the vote and declared that the motion for unanimous consent for immediate consideration had been approved. Council Member Willis then moved that the said ordinance be finally adopted, which motion was seconded by Council Member Holland and, upon said motion being put to a vote, a roll call on final approval was had and the vote recorded as follows:

AYES: Council Member Pampinto, Council Member Willis,
Council Member Grissom, Council Member Holland, Council Member Noles
Mayor Bradford

NAYS: None

Mayor Bradford thereupon declared said motion carried and that the Ordinance had been approved.

Mayor Bradford announced that the next item of business was consideration of a resolution to authorizes the Mayor to enter into a contract with the Northwest Alabama Council of Local Governments to administer a grant received from ADECA Energy Division.

Council Member Holland introduced the following resolution and moved for its adoption:

STATE OF ALABAMA

COLBERT COUNTY

# RESOLUTION NUMBER 2520 - 11

## AUTHORIZING THE NORTHWEST ALABAMA COUNCIL OF LOCAL GOVERNMENTS TO ADMINISTER ADECA ENERGY DIVISON PROJECT NUMBER: 1STR11-04

**WHEREAS**, the City of Muscle Shoals has received energy efficiency grant funds for energy efficiency upgrades to the Muscle Shoals Senior Center; now

**THEREFORE BE IT RESOLVED** that the Muscle Shoals City Council does hereby authorize the Northwest Alabama Council of Local Governments to provide administrative services for the project as provided for under the directive of ADECA Energy Division guidelines per grant agreement number 1STR11-04; and

**BE IT FURTHER RESOLVED** that the City of Muscle Shoals authorizes the Mayor to enter into a contract with the Northwest Alabama Council of Local Governments to provide said services for a fee not to exceed $3,000.00.

_____

Council Member Pampinto seconded the motion and upon said motion being put to a vote, all voted “AYE” and “NAYS” were none.

Mayor Bradford announced that the Resolution had been approved.

There being no further business to come before the meeting, upon the motion duly made, seconded and unanimously carried, the meeting was adjourned.

CITY OF MUSCLE SHOALS, ALABAMA
a Municipal Corporation

_____
MAYOR

_____
COUNCIL MEMBER - PLACE ONE

_____
COUNCIL MEMBER - PLACE TWO

_____
COUNCIL MEMBER - PLACE THREE

_____
COUNCIL MEMBER - PLACE FOUR

_____
COUNCIL MEMBER - PLACE FIVE

ATTEST:

_____
CITY CLERK