SECTION 1

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

The Auburn Engineering Design and Construction Manual (Manual) has been prepared to provide an understanding of the requirements of the Engineering Services Department and to assist in providing the basis for consistent design standards and policies. It sets forth requirements and policies which should be followed to expedite the processing and approval of projects. The Manual primarily focuses on the requirements and role of the Engineering Services Department, which is responsible for the construction, operation and maintenance of public facilities involving streets, alleys, sidewalks, bridges, transportation facilities, traffic signals, drainage facilities, floodplain management, easements and rights-of-way, flood control, environmental concerns, etc.

This Manual also sets forth the minimum requirements for designing and constructing streets, alleys, sidewalks, bicycle facilities, drainage facilities, erosion and sediment control and traffic management facilities. The Engineering Design and Construction Manual is organized into five (5) major sections as follows:

1. General Information
2. Traffic
3. Streets
4. Geotechnical
5. Stormwater

1.1.1 Purpose of the Manual

The purpose of the Manual is to provide the requirements for engineering design and construction of projects within the City of Auburn (City) and its planning jurisdiction. Also, the Manual addresses the objective of protecting the public health, safety and welfare by focusing on sound design and construction requirements.

The Manual consolidates the regulatory requirements of the City. Due to the authoritative and legal nature of some of these documents, it is important to note that this Manual will not, wholly, function as a substitute nor is it intended to replace some regulations. It is intended to complement existing ordinances and policies with the intent of helping the City in maintaining current technical standards pertinent to engineering design and construction.

1.1.2 Use of the Manual

This Manual establishes the standards and requirements governing the quality of design and construction that must be adhered to in preparing plans and constructing improvements for projects. Those doing business with the City are required to use this Manual to ensure compliance with all applicable design and construction standards.

In using the Manual it should be recognized that compliance with the Manual's standards and requirements may not meet all conditions and requirements necessary for approval of a project. Other City Departments as well as State and Federal agencies may have requirements other than those contained in the Manual that must be addressed to obtain approval.

The Manual is not intended to hinder good engineering judgment or creative / innovative efforts; however, any deviations from the requirements of the Manual are subject to the approval of the City Engineer.

1.1.3 Authority (Governing Regulations)

This Engineering Design and Construction Manual is established in pursuance of the authority conferred by Resolution 10-231 of the City Council of the City of Auburn, Alabama, which was adopted on November 2, 2010, and is effective as of January 1, 2011.

1.1.4 Fines and Penalties

Any person committing an offense within the corporate limits of the city, which is in violation of this manual existing or hereafter enacted, shall, upon conviction, be punished by a fine of not more than five hundred dollars ($500). In addition thereto, any person so convicted may be imprisoned or sentenced to hard labor for the city for a period not exceeding six (6) months, at the discretion of the court trying the case. However, no penalty shall consist of a fine or sentence of imprisonment exceeding the maximum fine or sentence of imprisonment established under state law for the commission of substantially similar offenses. The penalty imposed on a corporation shall consist of the fine only, plus costs of court. Each day's violation shall constitute a separate offense unless otherwise provided.

1.2 ACRONYMS AND DEFINITIONS

1.2.1 Purpose

It is the purpose of this section to define words, terms, and phrases contained within this Manual. In the event that a term is not listed in this section; or is not defined elsewhere in the Zoning Ordinance, the City Code, the Subdivision Regulations, or Sections 11-52-30 through 11-52-36 of the 1975 Code of Alabama, as amended; then the conventional meaning of such term shall apply.

1.2.2 Word Usage

The present tense includes the future tense and the future tense includes the present tense. The singular number includes the plural, and words in the plural number include the singular. The word "shall" or "must" is mandatory. The word "may" is permissive and indicates an action or choice that is usually beneficial. The word "lot" includes plot or parcel and the word "building" includes structure.

Where any word specifically defined in the Zoning Ordinance, Subdivision Regulations or other codes of the City is used in this Manual but not specifically defined herein, then the definition contained in the applicable ordinance or code shall apply.

Any confusion or questions regarding the definition of a term used in this Manual or a conflict with the definition as used in other City ordinances or codes shall be decided by the City Engineer, who shall have the right to interpret the definition of any word.

1.2.3 Abbreviations

The following abbreviations and acronyms are referenced within the Manual and are intended to have the following meanings:

AHW	Allowable headwater
ADT	Average Daily Traffic
AC	Acre
cfs	Cubic feet per second
CLOMR	Conditional Letter of Map Revision
CMP	Corrugated metal pipe
CN	Curve number
DF	Density Factor
EAP	Emergency Action Plan
FAR	Floor Area Ratio
fps	Feet per second
ft	Feet
ft/ft	Feet per foot
ft/sec	Feet per second
ft/sec^2	Feet per second squared
ft^2	Square feet
ft^3	Cubic feet
HDPE	High-density polyethylene

HDS	Hydraulic Design Services
HPS	High Pressure Sodium
HEC	Hydraulic Engineering Circular
HW	Headwater
ISR	Impervious Surface Ratio
L/W	Length to Width Ratio
LED	Light-Emitting Diode
LOMR	Letter of Map Revision
LOS	Level of Service
MG	million gallons
mm	millimeter
mph	Miles Per Hour
MSE	Mechanically Stabilized Earth
msl	mean sea level
PMP	Probable Maximum Precipitation
sec	Seconds
SF	Square Feet
TIS	Traffic Impact Study
vpd	Vehicles Per Day
vph	Vehicles Per Hour
W	Watt

1.2.4 Acronyms:

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act of 1990
ADEM	Alabama Department of Environmental Management
ALDOT	Alabama Department of Transportation
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWWB	Auburn Water Works Board
DRT	Development Review Team
DOT	U.S. Department of Transportation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ITE	Institute of Transportation Engineers
MUTCD	Manual on Uniform Traffic Control Devices
NGVD	National Geodetic Vertical Datum
NCHRP	National Cooperative Highway Research Program
NEMA	National Electric Manufacturers Association
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
SCS	Soil Conservation Service (former name of NRCS)
SWMM	Stormwater Management Manual
WRM	Water Resource Management

1.2.5 Definitions

When used, the following terms shall have the meanings herein ascribed to them:

85th Percentile Speed: The speed in which 85% of the vehicles are traveling at or below.

95th Percentile Speed: The speed in which 95% of the vehicles are traveling at or below.

Abstractions: The portion of a storm's total precipitation that does not become stormwater runoff.

Access Spacing: The point in the pipeline where access is available from the surface, like a manhole or inlet.

ADA: The American with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation. It also mandates the establishment of TDD/telephone relay services. The current text of the ADA includes changes made by the ADA Amendments Act of 2008 (P.L. 110-325), which became effective on January 1, 2009. The ADA was originally enacted in public law format and later rearranged and published in the United States Code.

Alley: A public right-of-way primarily designed to provide secondary access to the side or rear of properties.

Allowable Headwater Depth: Maximum depth of flow allowed at any point along the ditch profile, measured from the invert, minus the required freeboard.

ANSI: American National Standards Institute (ANSI), originally known as the American Standards Association published procedures in 1949. This activity of the American Association of Nurserymen, Inc. developed the first standardized system of sizing and describing plants to facilitate trade in nursery stock in the 1920's.

Antecedent Soil Moisture Conditions: Soil moisture at the onset of a rainfall event.

Applicant: One (1) individual who is duly authorized to submit development plans for review, request variances or changes in zoning classification, and apply for any form of development approval with respect to a development site. An Applicant may be the property owner(s), or any person having written authority from the property owner(s). This written authority shall be provided in any form that the Planning Director and/or the City Engineer determine to be appropriate.

Application for Development: The application forms and all accompanying documents required by these regulations or other regulations for the approval of subdivision plans or site plans.

Apron: A platform below a storm drain outlet to protect against erosion.

Arterial Road: A facility that serves as a primary artery of the City intended to mainly carry through traffic and to connect major activity centers in the City and its planning jurisdiction. Its function is to move intra-city and intercity traffic. The streets that are classified as arterials may also serve abutting property; however, their primary purpose is to carry traffic. Arterials should not be bordered by uncontrolled strip development. Access to these facilities should be carefully managed to ensure the capacity of the facility is not compromised by driveways. Arterials vary in width and parking on-street is prohibited.

Base Flood: A flood having a one (1) percent chance of being equaled or exceeded in any given year.

Basin: A basin is an extent of land where stormwater drains downhill into a body of water, such as a river, lake, reservoir, estuary, wetland, or ocean. The basin includes both the streams and rivers that convey the water as well as the land surfaces from which water drains into those channels and is separated from adjacent basins by a drainage divide. The basin acts like a funnel, collecting all the water within the area covered by the basin and channeling it into a waterway. Each basin is separated topographically from adjacent basins by a geographical barrier such as a ridge, hill or mountain, which is known as a water divide.

Backwater: Water backed up or retarded in its course, compared with its normal or natural condition of flow. In stream gauging, a rise in stage produced by a temporary obstruction such as ice or weeds, or by the flooding of the stream below. The difference between the observed stage and that indicated by the stage discharge relation is reported as backwater.

Baffle Wall: A flat board or plate, deflector, guide, or similar device constructed or placed in flowing water or stormwater storage systems to cause more uniform flow velocities, and to divert or guide liquids.

Bank Storage: The water absorbed into the banks of a stream, lake, or reservoir, when the stage rises above the water table in the bank formations, then returns to the channel as effluent seepage when the stage falls below the water table. Bank storage may be returned in whole or in part as seepage back to the water body when the level of the surface water returns to a lower level.

Base Flood Elevation: The height of the base flood, usually in feet, in relation to the National Geodetic Vertical Datum of 1929, the North American Vertical Datum of 1988, or other datum, or depth of the base flood, usually in feet, above the ground surface.

Bearing Capacity: The bearing capacity of soil is the average contact stress between a foundation and the soil which will cause shear failure in the soil.

Berm: A narrow ledge or path as at the top or bottom of a slope or stream bank; or a horizontal step or bench in the upstream or downstream face of an embankment dam.

Best Management Practices: A physical, structural or managerial practice, which has gained general acceptance for its ability to prevent or reduce environmental impacts.

Bicycle Facilities: Portions of the right-of-way allocated to bicycle use, such as bicycle lanes or bicycle routes, or facilities developed exclusively for the use of bicycles and non-motorized transportation, such as bicycle paths.

Bidder: Any individual, firm, partnership, corporation or any acceptable combination thereof submitting a Bid for the advertised work.

Bishop's Method: A method for calculating the stability of slopes.

"C" Factor: The runoff coefficient, C, is a critical element in that it serves the function of converting the average rainfall of a particular recurrence interval to the peak runoff intensity of the same frequency. The magnitude will be affected by antecedent moisture condition, ground slope, ground cover, depression storage, soil moisture, shape of drainage area, overland flow velocity, intensity of rain, etc.

Calendar Day: Every day shown on the calendar, beginning and ending at midnight, Sundays and holidays included.

Capital Improvements Program (CIP): Ranked capital projects based on goals established by the City Council and on established standards for the appropriate provision of services. The CIP outlines a schedule for the expenditure of municipal funds for public physical improvements. It consists of two (2) components: a capital budget, which lists and describes the capital projects to be undertaken during the coming fiscal year, and a capital program, which lists and describes the capital projects proposed to be undertaken during each of the following six (6) years. The CIP is monitored continuously and updated every two (2) years as part of the City's biennial budgetary process.

Certified Survey: The orderly process of determining data relating to the physical characteristics of the earth, the primary purpose of which includes, but is not limited to, determining the perimeter of a parcel or tract of land by establishing or re-establishing corners, monuments, and boundary lines for the purpose of describing and locating fixed points, which has been signed and sealed by a licensed professional surveyor in the State of Alabama according to the standards of practice for surveying in the State of Alabama.

Channel Capacity: The maximum rate of flow that may occur in a stream or channel without causing overbank flooding.

Channel Storage Volume: The volume of water at a given time in the channel or over the floodplain of the streams in a drainage basin or river reach. Channel storage is sometimes significant during the progress of a flood event.

City: The City of Auburn, Alabama.

City Attorney: The licensed attorney designated by the City Council to furnish legal assistance in the administration and enforcement of these regulations.

City Council: The City Council of the City of Auburn, Alabama.

City Engineer: The registered engineer designated by the City Manager to furnish engineering assistance in the administration and enforcement of these regulations.

Collector Road: A street whose primary function is to collect traffic from an area and move it to the arterial street system while also providing substantial service to abutting land uses. A collector roadway will generally have lower design speeds than arterial roadways but higher than local street. Collector roads are shown on the City's Major Street Plan.

Comprehensive Plan: The Combination of the latest adopted version of the City's Land Use Plan, Major Street Plan, Plan for Sewer Service, Plan for Water Distribution Facilities, Bikeway Plan, Green Space and Greenways Plan, and Capital Improvements Program adopted by the Planning Commission and/or City Council for the guidance of the growth and development of the City.

Comprehensive Plan Amendment: Any adopted addition or modification to the Comprehensive Plan.

Concept Plan: A generalized plan showing the entire development site of a conservation subdivision and meeting the requirements of the Auburn Subdivision Regulations.

Conditional Letter of Map Revision: Process where the Federal Emergency Management Agency provides review and comments on a proposed project that would, upon completion, affect the hydrologic or hydraulic characteristics of a flooding source and result in a change to the existing regulatory floodway, effective Base Flood Elevation (100-year) or the Special; Flood Hazard Area (100-year floodplain).

Conservation Subdivision: A development design technique that concentrates buildings on a part of the site to allow the remaining land to be used for open space or preservation of environmentally sensitive areas. The open space may be owned by either a private or public entity.

Consolidation: Process by which soils decrease in volume. It occurs when stress is applied to a soil that causes the soil particles to pack together more tightly, therefore reducing volume.

Constructed Wetland: Wetlands constructed specifically for the purpose of treating wastewater effluent before re-entering a stream or other body of water or being allowed to percolate into the groundwater.

Contract Bonds: The approved bonds furnished by the Contractor and his Surety to guarantee completion of the Contract in accordance with its terms.

Contract Document: The written agreement between the City and the Contractor setting forth the obligations of the parties hereunder for the performance of the prescribed work. The Contract shall include the *Invitation to Bid*, *Instructions to Bidders*, *Proposal*, *Proposal Bond*, *Base Bid*, the *Contract*, *Performance Bond*, *Labor and Materials Payment Bond*, the *Specifications*, *Special Conditions*, addenda, general and detailed plans, and *Notice to Proceed*, as well as any change orders, supplemental agreements and authorized extensions required to complete the work in a substantial and acceptable manner.

Contractor: The individual, partnership, firm, or corporation that has entered into a Contract awarded by the City for the work covered by this Contract.

Control Elevation: A location in the receiving drainage system where the water surface elevation is known.

County: Lee County

Crest: The highest elevation reached by flood waters flowing in a channel, as in crest stage or flood stage. The term crest can also refer to a crest vertical curve used in design processes to change the grade of a roadway.

Critical Depth: The depth of water flowing in an open channel or conduit under conditions of critical flow at which specific energy is a minimum for a given discharge.

Critical Flow: Critical flow occurs when the flow velocity in a channel equals the wave velocity generated by a disturbance or obstruction. In this condition, the Froude number (Fr) = 1. When the wave velocity exceeds the flow velocity (Fr is less than 1), waves can flow upstream, water can pond behind an obstruction, and the flow is said to be subcritical or tranquil. When Fr is greater than 1, waves cannot be generated upstream and the flow is said to be supercritical, rapid, or shooting. In this condition, a standing wave is formed over obstructions in the river bed. In nature, supercritical flow is found only in rapids and waterfalls, but it is often created artificially by weirs and flumes with the aim of measuring discharge.

Crown: The vertex of an arch or arched surface. Center of roadway elevated above the sides.

Curve Number (CN): A number between 0 and 100 that indicates the runoff-producing potential of a soil/vegetation combination when the ground is not frozen.

Cul-de-sac: A local street with one outlet and having an appropriate terminal for the safe and convenient reversal of traffic movement.

Curb Cut: Vehicular entrance onto a public right-of-way from a public or private development. The intersection of two (2) public rights-of-way is not considered a curb cut.

Dam: A barrier that impounds water or underground streams. Dams generally serve the primary purpose of retaining water, while other structures such as floodgates or levees (also known as dikes) are used to manage or prevent water flow into specific land regions.

Deflectors: A plate, baffle, or the like that diverts the flow of a forward-moving stream.

Design Flood: The flood magnitude selected for use as a criterion in designing flood control works. The largest flood that a given project is designed to pass safely. In dam design and construction, the reservoir inflow-outflow hydrograph used to estimate the spillway discharge capacity requirement and corresponding maximum surcharge elevation in the reservoir.

Design Storm: The rainfall or precipitation amount and distribution adopted over a given drainage area, used in determining the Design Flood.

Design Storm Flows: A storm whose magnitude, rate, and intensity do not exceed the design load for a storm drainage system or flood protection project.

Detention Area: An area for the slowing and storage of stormwater runoff.

Detention Basin (Pond): A relatively small storage lagoon for slowing stormwater runoff, generally filled with water for only a short period of time after a heavy rainfall.

Developer: The legal or beneficial owner(s) of a lot or parcel or any land proposed for inclusion in a development, including the holder of an option, contract to purchase, or a lease.

Development: The division of a parcel of land into two (2) or more parcels (See Subdivision); the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any buildings; any use or change in use of any buildings or land; any extension of any use of land or any clearing, grading, or other movement of land, for which an approved development plan is required pursuant to the Zoning Ordinance or other regulations, codes and ordinances of the City.

Development Agreement: A written contract between the City and a developer that articulates infrastructure commitments and off-site improvements necessary to maintain an appropriate level of service standard and mitigate impacts of a particular development. These commitments include, but are not limited to, improvements to ensure that adequate water, sewer, and traffic infrastructure are maintained and protected.

Development Phase: A portion, part or geographical area within a development site that constitutes a stage of the development project with each stage being capable of existing independently of the other stages.

Development Review Team (DRT): A team of City officials responsible for the review and approval of all engineering/construction plans involved with development within the City. The team consists of the Development Services Executive Director, Public Safety Director, Planning Director, Engineering Services Director, Water Resource Management Director, and the Director of Environmental Services or designee.

Development Site: One (1) or more parcels of land included in a single development plan, and preferably under common ownership, which constitute the entire area of development shown on a site plan or subdivision plat. The development site must include all land needed for required open space, bufferyards, landscaping, parking (except as provided for in the Zoning Ordinance), internal access roads or driveways, and other physical design features needed to serve the proposed development.

Drainage: The removal of surface water or ground water from land by drains, grading, or other means. Drainage includes the control of runoff to minimize erosion and sedimentation

during and after development and includes the means necessary for water-supply preservation or prevention or alleviation of flooding.

Drainage Facilities: Structural and nonstructural elements designed to collect stormwater runoff and convey it away from structures and through the roadway right-of-way in a manner which adequately drains sites and roadways and minimizes the potential for flooding and erosion.

Drainageway: Minor watercourses, ravines, and ditches, natural or man-made, which are defined either by soil type or the presence of intermittent or perennial streams.

Drawings: All officially approved plans, which are on file with the City, or exact reproductions thereof, showing alignment, layout and design of structures, profiles, typical cross-sections, accessory features, and particular location, character, dimensions, and details of the work covered by the Contract.

Easement: The privilege or right of one (1) property owner making limited use of another property owner's adjacent property.

Easement, Public: An easement intended to accommodate utilities and/or drainage facilities; or to provide public access to pedestrian ways, bikeways, greenways, public parks and other public facilities. Such easements shall be accepted for dedication by resolution of the City Council.

Energy Dissipation: Any loss of energy due to change in flow paths, generally by conversion into heat; quantitatively, the rate at which this loss occurs.

Engineer: The company or person designated by the City, acting within the scope of authority and/or the particular duties entrusted to him.

Engineering Plan: Plans prepared by a registered engineer showing details of the design and construction of required improvements in a proposed subdivision and/or site.

Erosion: The process by which rain, running water, waves, moving ice, and wind dislodge the upper layers of soil. As usually employed, the term includes weathering, solution, corrosion, and transportation.

Erosion Control: Measures and actions which are to be taken to control potential erosion and sedimentation problems.

Excess Precipitation: That portion of total precipitation that becomes stormwater runoff during a storm event.

Extended Wet Detention Basin: Combines the treatment concept of the dry detention pond and the wet pond. The treatment volume is divided between the permanent pool and detention storage provided above the permanent pool.

Falling Limb: The portion of the hydrograph immediately following the peak and reflecting the decreasing production of storm flow.

Filling: The depositing of sand, gravel, earth, or other materials to alter the elevation of a given site.

Flood Elevation Profile: The height of flood waters above an elevation datum plane.

Flood Routing: The process of determining progressively downstream the timing and stage of a flood at successive points along a river. Also the determination of the attenuating effect of storage on a flood passing through a valley, channel, or reservoir.

Floodplain: Any land area susceptible to flooding

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

Forebay: The water behind a dam. A storage basin for regulating water for percolation into groundwater basins.

Foundation: A structure that transfers loads to the earth. Foundations are generally broken into two (2) categories: shallow foundations and deep foundations.

Freeboard: The vertical distance between a design maximum water level and the top of a structure such as a channel, dike, floodwall, dam, or other control surface. The freeboard is a safety factor intended to accommodate the possible effect of unpredictable obstructions, such as ice accumulations and debris blockage that could increase stages above the design water surface.

Geographic Information System (GIS): The City's organized collection of computer hardware, software, geographic data, and personnel designated to efficiently capture, store, update, manipulate, analyze and display forms of geographically referenced information.

Geosynthetic: A fabric-like material made from polymers such as polyester, polyethylene, polypropylene, polyvinyl chloride (PVC), nylon, chlorinated polyethylene, and others. It can serve in several major functions; separation, reinforcement, filtration, drainage, and moisture barrier.

Geotextile: A fabric made from petroleum products or fiberglass. It has four (4) major uses; drainage, filtration, separation, and reinforcement.

Grade: The slope of land or stream bed or a built feature such as a street, curb, gutter, etc, specified in percentage terms.

Gravity Flow: The downhill flow of water or sanitary sewage through a system of pipes, generated by the force of gravity.

Greenway: Interconnected corridors of natural land, preserved as open space, which follow natural, water, or man-made features. They connect people and places together, and when they include trails, they provide routes for alternative non-motorized transportation; a specific type of greenspace.

Headwater Depth: The water level upstream of a culvert or bridge.

Hundred (100) Year Flood: Flood created by a 100-year rainfall event; a storm having a one (1) percent chance of being equaled or exceeded in any given year.

Hundred (100) Year Floodplain: The area of land inundated as a result of the 100-year rainfall event.

Hydraulic Gradient: The gradient or slope of a water table or piezometric surface in the direction of the greatest slope, generally expressed in feet per mile or feet per foot. Specifically, the change in static head per unit of distance in a given direction, generally the direction of the maximum rate of decrease in head. The difference in hydraulic heads (h1 – h2), divided by the distance (L) along the flowpath, or expressed in percentage terms: I = (h1 – h2)/L x 100.

Hydraulic Radius: The cross-sectional area of a stream of water or pipe divided by the length of that part of its periphery in contact with its containing conduit; the ratio of area to wetted perimeter. Also referred to as hydraulic mean depth.

Hydrograph: A graph showing stage, flow, velocity, or other hydraulic properties of water with respect to time for a particular point on a stream.

Hydrologic Soil Group: The classification of soils by their reference to the intake rate of infiltration of water, which is influenced by texture, organic matter content, stability of the soil aggregates, and soil horizon development.

Hyetograph: A chart showing the distribution of rainfall over a particular period of time or a particular geographic area.

Impervious Surface: A surface that does not absorb water. Buildings, parking areas, driveways, roads, sidewalks, and any areas of concrete or asphalt are impervious surfaces.

Impervious surface ratio (ISR): A measure of the intensity of land use, which is determined by dividing the total area of all impervious surfaces on a development site by the total area of the site.

Imperviousness: The portion of a sub-basin, sub-watershed, or watershed, expressed as a percentage, which is covered by surfaces such as roof tops, parking lots, sidewalks, driveways, streets, and highways.

In-situ: Natural, in-place material.

Infiltration: The process whereby the downward movement of precipitation is interrupted and redistributed.

Infiltration Capacity Rate: The maximum rate at which the soil, when in a given condition, can absorb falling rain or melting snow.

Infrastructure: Facilities and services needed to sustain industrial, residential, and commercial activities. Infrastructure may include, but not be limited to, water and sewer lines, streets, communication lines, drainage facilities, and utilities.

Interception: During the first part of a rainfall event, it is the rainfall amount that is stored on vegetative cover.

Interceptor Ditch: A ditch that collects rainfall, allowing it to evaporate without contributing to runoff.

Interstate: Controlled access facilities with four (4) or more lanes that provide fast and efficient movement of large volumes of traffic over a considerable distance by prohibiting access (ingress and egress) except at controlled intervals.

Invert: The floor or bottom of a conduit, junction box, inlet, and manhole.

Jet: A forceful stream of fluid discharged from a narrow opening or a nozzle.

Labor and Materials Payment Bond: The bond posted for the work guaranteeing payment for materials and labor contained in the work, valued at 100 percent of the Contract amount

Lag Time: The time from the center of mass of the rainfall excess to the runoff hydrograph peak.

Lakes and Ponds: Natural or artificial bodies of water which retain water year round. A lake is a body of water of two (2) or more acres. A pond is a body of water of less than two (2) acres. Artificial ponds may be created by dams or may result from excavation. The shoreline of such bodies of water shall be measured from the maximum condition rather than from the permanent pool in the event of any difference.

Letter of Map Revision: Administrative procedure that the Federal Emergency Management Association uses to officially revise the effective Flood Insurance Rate Map.

Level of Service (LOS): A qualitative measure describing traffic conditions along a given roadway or at a particular intersection, including travel speed and time, freedom to maneuver, traffic interruptions, and comfort and convenience as experienced and perceived by motorists and passengers. Six (6) levels are defined from A to F, with A representing the best conditions and F the worst.

Littoral Zone: The region along the shore of a non-flowing body of water, corresponding to riparian for a flowing body.

Local Commercial Street: All minor streets, marginal access streets and cul-de-sacs serving primarily commercial developed property.

Local Residential Streets: All minor streets, marginal access streets and cul-de-sacs serving primarily residential property.

Lot: A parcel of land occupied by, or designated to be developed for one (1) or more buildings or principal uses, and the accessory buildings or uses customarily incidental to such uses including such open spaces and yards as are designed and arranged or required by this Manual for such building, use or development (See also Development Site).

Lot, Corner: A lot abutting two (2) or more streets at their intersection. If the two (2) streets form an angle of more than 135 degrees, as measured at the point of intersection of their center lines, the lot shall not be considered a corner lot.

Lot Depth: The distance between the midpoints of the front and rear lot lines.

Lot, Double Frontage: A lot, other than a corner lot, which has frontage on more than one street.

Lot Frontage: Lot width measured at the street lot line. When a lot has more than one (1) street lot line, lot width shall be measured at each such line.

Lot Line: A line bounding a lot which divides one lot from another or forms a street or any other public or private space.

Lot Width: The horizontal distance between the side lot lines measured at right angles to the lot depth at the right-of-way.

Major Street Plan: The component of the Comprehensive Plan showing the general location of existing and proposed major streets in the City and its planning jurisdiction.

Marginal Access Roadway: A street that runs parallel to a major street, generally an arterial, with the purpose of separating through traffic from local traffic, and to provide access to abutting properties. A service road in commercial/business areas intended to remove traffic from arterials would be considered a marginal roadway. An access street in residential areas intended to remove local traffic from arterials and to buffer abutting residential lots from the effects of highway traffic as well as limit the number of direct driveway accesses to arterials for safety purposes is also considered a marginal roadway.

Master Development Plan: A conceptual plan, meeting the requirements of the Zoning Ordinance and depicting a mixture of land uses, showing an entire development site and all component stages or phases which express the overall development concept for the site at buildout.

Mechanically Stabilized Earth (MSE) Wall: Soil constructed with artificial reinforcing. It can be used for retaining walls, bridge abutments, dams, seawalls, and dikes. The reinforcing elements used can vary but include steel and geosynthetics.

Minimum Floor Elevation: The lowest elevation, in relation to mean sea level, permissible for the construction, erection, or placement of residential and non-residential structures, including basements floors in accordance with the City Code.

Monument: A permanent object serving to indicate a limit to or mark a boundary.

No Rise Certification: A proposed project that encroaches into a floodway, requires a "no rise" certification from a licensed professional engineer in the State of Alabama, which certifies that the proposed project will not result in an increase in the water surface elevation of a 100-year frequency flood event.

Nomograph: A chart that represents an equation containing three (3) variables by means of three (3) scales so that a straight line cuts the three (3) scales in values of the three (3) variables, thus satisfying the equation.

Notice to Proceed: Written notice from the Engineer giving the Contractor the date on which he is to begin the prosecution of the work.

NRCS Curve Number (CN) Method: Relates soil type, soil cover, land use type, and antecedent moisture conditions to a curve number. Used to determine the depth of runoff for a given area.

Open Channel: A system of conveyance channels in which the top flow boundary is a free surface (e.g., canal systems).

Ordinate: The perpendicular distance of a point (x,y) of the plane from the x-axis.

Orifice: As used in water studies, an opening with a closed perimeter, usually sharp edged and of regular form in a plate wall or partition through which water may flow. An orifice is used for the measurement or control of water.

Overtopping: To rise above; exceed in height; tower over.

Owner: A person who, or entity which, alone, jointly or severally with others, or in a representative capacity (including, without limitation, an authorized agent, attorney, personal representative or trustee) have legal or equitable title to any property in question.

Parapets: A solid wall built for the safety of vehicles and pedestrians, or to prevent overtopping.

Parcel: See Lot, Development Site.

Partially Full Subcritical Flow: A flow condition where the velocity is less than the critical velocity and the depth is greater than the critical depth.

Peak Flow: The maximum flow rate of the hydrograph.

Peat Bog: A wet overwhelmingly vegetative substratum that lacks drainage and where humic and other acids give rise to modifications of plant structure and function. Bogs depend primarily on precipitation for their water source, and are usually acidic and rich in plant residue with a conspicuous mat of living green moss. Only a restricted group of plants, mostly mychorrhizal (fungi, heaths, orchids, and saprophytes), can tolerate bog conditions.

Performance Standards: Standards that provide detailed regulations and restrictions by means of minimum criteria, which must be met by uses in order to protect neighbors from adverse impacts of adjoining land uses and to protect the general health, safety and welfare by limiting where uses may be established, insuring that traffic congestion is minimized, controlling the intensity of use, and prescribing other such standards for open space, density, impervious surface coverage, and lot area are delineated that apply in each zoning district.

Planning Commission: The Auburn Planning Commission created by the City of Auburn under the authority of Chapter 52, Article 1, of the Code of Alabama, 1975, as amended.

Plans: See Drawings

Plat:

Preliminary Plat: A map and related materials indicating the proposed layout of a development submitted for preliminary approval in accordance with all requirements.

Final Plat: The map or plan or record of all or a portion of a subdivision, and any accompanying materials presented for final approval and recording as required.

Point of Inflection: Assumed mark on the recession curve of a hydrograph when surface inflow to the channel system ceases.

Pond: See Lakes and Ponds.

Ponding: The natural formation of a pond in a stream by an interruption of the normal streamflow.

Private Access Drive: A driveway or drive, under common ownership, that provides shared vehicular access to multiple residential/nonresidential units and has at least one connection to a public street.

Probable Maximum Precipitation: The greatest depth of precipitation for a given storm duration that is physically possible over a particular drainage basin at a certain time of year.

Probate Judge: The Judge of Probate for Lee County, Alabama.

Project Manager/Inspector: An authorized representative of the City or Engineer, assigned to review any or all portions of materials furnished and work performed by the Contractor.

Proposal: The written offer for the work, when submitted by the Bidder in the required manner on the prescribed Proposal Form properly signed and guaranteed.

Proposal Form: The approved prepared form on which the City requires that formal bids be submitted for the work.

Proposal Guaranty: The certified check, cashier's check or Proposal Bond designated in the Instructions to Bidders to be furnished by the Bidder to guarantee execution of the Contract and furnishing of the bonds for the work contemplated, if it is awarded to him.

Rainfall Excess Hyetograph: A single block of rainfall excess over duration, D.

Rational Method: A simple procedure for calculating the direct precipitation peak runoff from a watershed, using the rainfall intensity, the area of the watershed, and the runoff coefficient appropriate for the type of watershed runoff surface.

Recession Curve: A hydrograph that shows the decreasing rate of runoff following a period of rain or snowmelt. Because direct runoff and base runoff recede at different rates, separate curves, called direct runoff recession curves, are generally drawn.

Regional Detention: Any stormwater runoff facility that will provide detention for two (2) or more commercial or multi-family residential lots.

Registered Engineer: An engineer properly licensed and registered in the State of Alabama.

Registered Land Surveyor: A land surveyor properly licensed and registered in the State of Alabama.

Residential Collector Street: A street whose primary function is to provide direct access to residential properties and residential subdivisions. Typically, residential collector streets collect traffic from local streets in residential neighborhoods and channel it to the arterial and collector system.

Retainage: Money belonging to the Contractor which has been retained by the awarding authority conditioned on final completion and acceptance of all work in connection with a project or projects by the Contractor.

Retaining Wall: A structure that holds back soil or rock from a building, structure or area. Retaining walls prevent downslope movement or erosion and provides support for vertical or near-vertical grade changes.

Retention Pond: A permanent pond used to slow stormwater runoff and promote infiltration into the groundwater. See Wet Retention Pond and Dry Detention Pond.

Return Period: The mean number of such time units necessary to obtain a value equal to or greater than a certain value one (1) time. For example, with a one (1) year interval between observations, a return period of 100-years means that, on average, an event of this magnitude or greater is not expected to occur more often than once in 100 years.

Right-of-Way: A strip of land used or intended to be used for passage of the general public, and occupied or intended to be occupied by a street, road, bicycle path, pedestrian way,

crosswalk, utilities, railroad or similar facility; and dedicated to public use through acceptance by the City Council.

Roadway: The portion of a right-of-way intended for use by vehicular and bicycle traffic.

Riser: A vertical pipe used for drainage.

Rising Limb: The increasing portion of the storm hydrograph. Contrast to Falling Limb.

Scale: The relative proportion of the size of different elements of the built environment to one another; the measurement of the relationship of one (1) object to another.

Scupper: An opening for draining off water, as from a floor or the roof of a building.

Sedimentation: The act or process of depositing sediment from suspension in water. All the processes whereby particles of rock material are accumulated to form sedimentary deposits. Sedimentation, as commonly used, involves not only aqueous but also glacial, aeolian, and organic agents.

Setback: The required minimum distance between a structure and the front, side, or rear lot line. The distance between a building or structure (not including ground-level parking lots or other paved surfaces) from property lines or from other buildings.

Sheet Flow: An overland flow or downslope movement of water taking the form of a thin continuous film over relatively smooth soil or rock surfaces and not concentrated into channels.

Shop Drawings: Fabrication plans for any part of the work including, but not limited to, water and sanitary mains and appurtenances, precast concrete items, structural steel items, or other metal items, and connections thereof, which the Contractor is required to submit to the Engineer.

Shoring: Providing temporary support with shores to a building or an excavation.

Sidewalk: A paved path provided for pedestrian use.

Siltation: The deposition of finely divided soil and rock particles upon the bottom of stream and river beds and in reservoirs.

Site Plan: A plan, drawn to scale by a licensed professional engineer in the State of Alabama or other qualified professional, showing uses, structures, and all other physical features proposed for the development site, including bufferyards, parking, landscaping, and drainage facilities, in accordance with the requirements of the Zoning Ordinance.

Skew Angle: Deviating from rectangularity or a straight line.

Spread: The width of water transported on the pavement measured from the face of the curb.

Specifications: Written technical and other requirements for the Work, prepared by or on behalf of the City, which are on file with the City, (refer to the Publications tab located at https://www.auburnal.gov/engineering-services/publications/ for the City of Auburn Standard Specifications) containing directions, provisions, and technical and general requirements for the Work, together with such as may be added as Supplemental Specifications or Provisions.

Standard Drawings: Drawings approved for repetitive use, prepared by or on behalf of the City, showing details to be used where appropriate which are on file with the City (refer to the Publications tab located at https://www.auburnal.gov/engineering-services/publications/ for the City of Auburn Standard Details).

Standard Specifications: A book of specifications approved for general application and repetitive use. Please refer to the Publications tab located at https://www.auburnal.gov/engineering-services/publications/ for the City of Auburn Standard Specifications.

State: The State of Alabama.

Steep Slopes: Land area where the inclination of the land's surface from the horizontal is fifteen (15) percent or greater. Slope is determined from on-site topographic surveys prepared with a two (2) foot contour interval.

Storm Water Phase II: The federal regulations requiring smaller communities to address stormwater management and requiring coverage by a National Pollutant Discharge Elimination System (NPDES) Permit.

Stream, Ephemeral: A stream that goes dry during rainless periods.

Stream, Intermittent: A stream that flows at the land surface discontinuously along its length as a result of subterranean passages that locally allows the surface water to move through the subsurface.

Stream, Perennial: A natural watercourse which contains flowing water, year around.

Street: Any street, avenue, boulevard, road, parkway, viaduct, drive, or other right-of-way provided for vehicular traffic and travel.

Street Centerline: That line surveyed, monumented and designated by the City as the centerline of a street.

Street Hierarchy: The classification of streets based upon their individual function, as follows:

Interstate
Arterial Road
Collector
Residential Collector Street
Local Commercial Street

Local Residential Streets
Marginal Access Roadway
Cul-de-sac
Alley

Street, Loop: A circular or semi-circular road designed around landscaped greenspace or a rain garden, with outlets that begin and end on the same road. A one-way loop street can be used as an alternative to the cul-de-sac.

Subbasin: A portion of a sub-region or basin drained by a single stream or group of minor streams.

Subcontractor: Any properly qualified individual, firm, or corporation undertaking the performance of any part of the Work under the terms of the Contract, by virtue of any agreement between himself and the Contractor.

Subdivider: Any person who, having an interest in land, causes it directly or indirectly, to be divided into a subdivision as defined herein.

Subdivision: Any division, redivision, or consolidation of a tract, parcel, or lot of land by means of mapping, platting, conveyance, change or rearrangement of boundaries in accordance with the Subdivision Regulations. All subdivisions are also developments (See Development).

Subdivision Jurisdiction: All land located within the corporate limits of the City and within one and one half (1.5) miles thereof, and not located within the corporate limits of any other city or within the subdivision jurisdiction of any other city having a planning commission, in accordance with Chapter 52, Article 2, Section 11-52-30 of the Code of Alabama, 1975, as amended.

Subdivision Regulations: The Subdivision Regulations of the City of Auburn, Alabama.

Subgrade: The soil or rock leveled off to support the foundation of a structure or roadway.

Substrate Surface: Any naturally immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Sump: A low-lying place, such as a pit, that receives drainage.

Supplemental Agreement/Change Order: A written agreement executed by the City and the Contractor covering major changes and/or revision or new unit prices and items supplementing or modifying the original Contract.

Surety: The corporate body, licensed under the laws of the State, bound with and for the Contractor for the acceptable performance of the Contract, and also, for the payment of claims recoverable under the Contract Bonds.

Surface Detention: That part of the rain that temporarily remains on the ground surface during rain and either runs off or infiltrates after the rain ends.

Surface Storage: The part of precipitation retained temporarily at the ground surface as interception or depression storage so that it does not appear as infiltration or surface runoff either during the rainfall period or shortly thereafter.

Swale: An open drainage channel used for the conveyance of stormwater.

Tailwater: Water in a river or channel, immediately downstream from a structure.

Time Base: The total time from when runoff begins to the estimated peak flow rate.

Time Lag: The time it takes a flood wave to move downstream.

Time of Concentration: The time required for water to flow from the hydraulically farthest point on the watershed to the gauging station, culvert, or other point of interest.

Time to Peak: The time from the start of the hydrograph to the peak flow.

Traffic Calming: A set of techniques that serves to reduce the speed of traffic in residential areas. Such strategies include lane narrowing, traffic circles, sharp offsets, yield points, sidewalk bulge-outs, speed humps, surface variations, and visual clues on a vertical plane.

Turning Line: A temporary line whose elevation is determined by additions and subtractions of backsights and foresights respectively.

Turnout: A structure that diverts water from a drainageway to a distribution system or delivery point. Turnouts are used at the head of laterals.

Unit Duration: The time over which one (1) inch of surface runoff is distributed for unit hydrograph theory.

Unit Hydrograph: A runoff hydrograph that is produced by one (1) inch (25.4 millimeters [mm]) of excess rainfall distributed uniformly over a watershed and occurring at a uniform rate during a specified period of time.

Urban Forest: Trees growing within urbanized or developed areas. These include street trees, open green spaces, underdeveloped forested areas, trees in municipal parks and playgrounds, trees and vegetation on private property, and trees around public buildings.

Waiver: Modification of certain specific design standards, dependent upon a finding by the City Engineer that extraordinary hardships or practical difficulties peculiar to the land or that such standards are inappropriate in relation to a specific development will result from strict compliance with the Manual and/or the purposes of the Manual may be served to a greater extent by an alternative proposal, provided that such waiver shall not have the effect of nullifying the intent and purpose of the Manual and result in detriment to the public interest.

In granting waivers, the City Engineer may impose such additional conditions as will, in its judgment, secure substantially the objectives of the requirements that are waived.

Water Supply: The system made up of water sources, treatment, and conveyance systems to provide potable water and fire protection to the community.

Watershed: An area of land, due to its natural drainage pattern, that collects precipitation and drains or seeps into a marsh, stream, river, lake or groundwater. Topography is the key element affecting this area of land. The boundary of a watershed is defined by the highest elevations surrounding the stream. A drop of water falling outside this boundary will drain to another watershed.

Weir: A device for determining the quantity of water flowing over it from measurements of the depth of water over the crest or sill and known dimensions of the device.

Wet Retention Basin (Pond): Constructed basins that have a permanent pool of water throughout the year or wet season and generally are found in locations where groundwater is high and/or percolation is poor.

Wetland: An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. (Wetlands generally include swamps, marshes, bogs, and similar areas). Standards for defining wetland boundaries consider hydrology, vegetation and soil conditions.

Work (The Work): All performance required of the Contractor under the terms of the Contract.

Working Day: Any Calendar day, exclusive of Saturdays, Sundays and legal holidays on which the Contractor could proceed with construction operations for a period of six (6) hours or more with the normal working forces engaged in performing work on the controlling item or items of work, which normally would be in progress at that time, will be classified as a working day. Saturdays, Sundays and legal holidays on which the Contractor elects to work for a period of four (4) hours or more will be classified as a working day.

Working Drawings: Erection plans, false work plans, framework plans, cofferdam plans, or any other supplementary plans or similar data, which the Contractor is required to submit to the Engineer.

Zoning Ordinance: A set of land use regulations enacted by the local governing body to create districts, which permit certain land uses and prohibit others. Land uses in each district are regulated according to type, density, height and the coverage of buildings.

1.3 DEVELOPMENT PROCESS

1.3.1 Overview

Any development within the City or the territorial jurisdiction of the City is classified as a site plan project or subdivision project. Based on the classification of the development, the review and approval processes may vary. This section will identify the types of developments within the City and give guidance on the type of process to be followed to receive approval. All developments, regardless of size, shall provide adequate infrastructure, including but not limited to, sidewalks, site lighting, fire protection and access, street lighting, and utilities. The Applicant for a development should consult with the Planning Department during the early stages to obtain specific information on the review and approval process.

1.3.2 Site Plan Project

Site plan projects include all proposed non-residential construction projects, as well as certain residential development types such as multiple unit developments (apartment complexes and condominiums) and manufactured home parks. These particular developments are described in greater detail in the Zoning Ordinance. This will also include clubhouses or other ancillary facilities within a residential subdivision. Site plan approvals could require rezoning, conditional use approval and a traffic impact study; however, all site plans are presented to the Development Review Team (DRT) for approval before any construction is allowed on the site.

1.3.2.1 Rezoning

When an application to develop land involves a need for rezoning, the DRT and/or site plan approval shall not be granted prior to approval of the requested rezoning. The rezoning request and conditional use approval (if required) can be addressed at the same meeting; however, a rezoning decision must be rendered before approval of the conditional use. A request to rezone land to zoning districts specified in the Zoning Ordinance may require certain engineering analysis and/or traffic studies.

1.3.2.2 Permitted Uses

The Zoning Ordinance identifies uses which are permitted by right. It shall be the responsibility of the property owner or the owner's authorized representative to coordinate with the Planning Department to determine that the proposed project is a permitted use that meets all provisions of the Zoning Ordinance. If the project is not a permitted use, conditional use approval is required by the City Council.

1.3.2.3 Conditional Uses

The Zoning Ordinance identifies uses which are permitted only upon approval of a conditional use application. The Planning Commission, after holding a public hearing, shall recommend that the conditional use be approved, approved with conditions or denied to the City Council. The City Council then, after holding a public hearing, either approves or denies the proposed conditional use with any additional conditions that may be imposed subject to a site plan that meets all conditions of approval.

1.3.2.4 Traffic Study

Depending on the type, size, and intensity of a development, a Traffic Impact Study (TIS) may be required. The study may be required concurrent with a rezoning request, conditional use request, or during the site plan project approval process. The guidelines for submittal of a TIS are discussed in this Manual in Section 4.0 "Traffic Impact Studies".

1.3.2.5 Development Committee

The Development Committee is chaired by the Planning Director and is comprised of various City Department Heads including Economic Development, Engineering Services, Water Resource Management, Finance, the Office of City Manager, and others as needed.

Because each proposed development project is unique in terms of its infrastructure needs and requirements, the Planning Director exercises discretion in placing a project on the Development Committee agenda for its review. As a result, the Development Committee is convened as needed.

The Development Committee is tasked with evaluating how a proposed project will impact existing public infrastructure or necessitate additional public investment in infrastructure to accommodate the project. More specifically, the Development Committee evaluates the infrastructure impact, availability, and immediate or future needs associated with the development; and, based on that assessment, determines the public costs associated with the provisions of new or improved public infrastructure that are only necessitated because of the proposed development.

The Development Committee is typically involved in developments proposed on recently annexed property on the outer periphery of the City. However, Development Agreements have also been required in certain instances where the project was already zoned and considered to be an "infill" use but the need for infrastructure improvements was necessary.

The Development Committee process begins once a master plan is submitted for review. The Development Committee analyzes the proposal in terms of:

- Infrastructure (roads, water, sewer, traffic control devices)
- Greenways
- Bikeways
- Environmental concerns (wetlands, creeks, etc.)
- City services (garbage/trash/recycling service, fire protection, etc.)

In most cases, the developments referred to the Development Committee will cause a "Development Agreement" to be formulated which articulates two (2) items. The first analyzes what the various impacts and expenses will be and the second depicts how those items will be addressed for the purposes of ensuring that the infrastructure needs associated with the project, and surrounding area, if appropriate, are secured.

Once the analysis is complete, the City Manager or his designee will serve as the central point of negotiation with the developer. Negotiations will address the findings of the Development Committee and identify the financial responsibilities and commitments of

each party. A Development Agreement is then drafted which is ultimately submitted to City Council for its consideration.

It is also important to note, when a proposed development requires improvements and/or reconstruction of City-maintained infrastructure; the developer will be required to provide a Performance Bond prior to the issuance of any permits for construction. This Performance Bond will be required to cover the costs associated with the improvements and/or reconstruction.

1.3.2.6 Engineering Plans

As part of the site plan approval process, full engineering plans are required for submission. Regardless of the size of the development, engineering plans must be approved before any work can begin on the site. Some building expansions do not require submission of full engineering plans, but those are evaluated on a case by case basis. The engineering plans must be reviewed and approved through the DRT as outlined in this Manual in Section 1.3.4 "Development Review Team (DRT)".

1.3.3 Subdivision

The subdivision of land must be in accordance with the requirements of the Subdivision Regulations of the City of Auburn and Lee County and must be approved by the Planning Commission and County Commission, as applicable. It is, therefore, the responsibility of the property owner or the property owner's representative to make application to the Planning Commission of the City of Auburn or Lee County Planning Commission for approval of a proposed subdivision. Developments within the territorial jurisdiction shall be constructed in accordance with Interlocal Agreement approved by the City Council on April 21, 2015, Resolution Number 15-070.

1.3.3.1 Rezoning

When an application to develop land involves a need for rezoning, the DRT and/or subdivision project approval shall not be granted prior to approval of the requested rezoning. The rezoning request and conditional use approval can be addressed at the same meeting; however, a rezoning decision must be rendered before approval of the conditional use. A request to rezone land to zoning districts specified in the Zoning Ordinance may require certain engineering analysis and/or traffic studies.

When plat approval is requested for land that must be rezoned to permit the proposed development of the land to be subdivided, the plat approval shall not be granted prior to approval of the requested rezoning (see the Zoning Ordinance). The rezoning request and subdivision plat approval can be addressed at the same meeting; however, a rezoning decision must be rendered before considering the subdivision plat.

1.3.3.2 Lot Layout Plans

The Subdivision Regulations require the submission of a Lot Layout Plan to the Planning Department prior to the submission of the Preliminary Plat for subdivisions resulting in twenty-five (25) or more lots at complete build-out. Article III of the Subdivision Regulations outline the requirements for a Lot Layout Plan.

1.3.3.3 Preliminary Plat

The information required on a Preliminary Plat and details of the approval process are specified in the Subdivision Regulations. Preliminary Plat approval by the Planning Commission is required prior to submitting engineering plans to the DRT for all subdivisions except Administrative Subdivisions. If the subdivision (or lot consolidation) involves dedication of right-of-way, then a Preliminary Plat must be approved by the Planning Commission even if it involves four (4) or less lots of record. Article III of the Subdivision Regulations outline the requirements for a Preliminary Plat.

1.3.3.4 Engineering Plan

As part of the subdivision project approval process, full engineering plans are required for submission. Regardless of the size of the development, engineering plans must be approved before any work can begin on the site. The engineering plans must be reviewed and approved through the DRT as outlined in this Manual in Section 1.3.4 "Development Review Team (DRT)". For developments within the territorial jurisdiction area of review, engineering plans must be submitted to both the City and County for review and comment. Appendix B of this section includes a checklist containing the requirements for Engineering Plans.

1.3.3.5 Final Plat

The Subdivision Regulations sets forth the requirements and procedure for approval of a Final Plat. To be considered for approval by the Planning Commission and the City Council, the Final Plat must be certified by the City Engineer as meeting all the requirements for street and utility improvements. Prior to considering a Final Plat all improvements must be installed to the satisfaction of the City Engineer as evidenced by a signed statement or a Performance Bond based on an approved engineering estimate of required improvements and approved to form by the City Attorney. Furthermore, any plat that contains the dedication of right-of-way must be approved by the City Council.

The Final Plat shall be accompanied by an engineer's estimate of the costs of any required improvements yet to be constructed. The engineer's estimate must include all remaining items of infrastructure plus contingency costs for erosion control/grassing, street repair, utility adjustments, and other items as deemed necessary by the City Engineer. Article III of the Subdivision Regulations outline the requirements for a Final Plat.

1.3.3.6 Bonding

If the improvements outlined above are not completed and accepted at the time the Final Plat is requested, bonding can be initiated as in the Subdivision Regulations. The bonding shall be in the form of a performance bond with a commercial surety, an irrevocable letter of credit, or a bank certificate of deposit in an amount equal to one hundred twenty-five percent (125%) of the outstanding improvements.

In addition to bonding requirements for subdivisions, any infrastructure work within right-of-way or easements that will be affected, as shown on the approved engineering plans, by a site plan project must post a Signature Bond for the affected infrastructure prior to the issuance of the Erosion and Sediment Control Permit. This can include, but is not limited to, sidewalk, curb and gutter, roadways, striping, street lighting, and utility connections. A copy of the bond is found in Appendix B-6. A separate Completion and Warranty Bond will

be required for any development that includes a sanitary sewer pump station. This bond shall be coordinated through the Water Resource Management (WRM) Department.

Infrastructure improvements for site plan projects not covered by a Development Agreement must also comply with this requirement. See in this Manual in Section 1.3.3.8 "Development Committee" for information related to Development Agreements.

1.3.3.7 Traffic Study

Depending on the type, size, and intensity of a development, a Traffic Impact Study (TIS) may be required. The study may be required concurrent with a rezoning request, conditional use request, or during the subdivision project approval process. The guidelines for submittal of a TIS are discussed in this Manual in Section 4.0 "Traffic Impact Studies".

1.3.3.8 Development Committee

The Development Committee is chaired by the Planning Director and is comprised of various City Department Heads including Economic Development, Engineering Services, Water Resource Management, Finance, the Office of City Manager, and others as needed.

Because each proposed development project is unique in terms of its infrastructure needs and requirements, the Planning Director exercises discretion in placing a project on the Development Committee agenda for its review. As a result, the Development Committee is convened as needed.

The Development Committee is tasked with evaluating how a proposed project will impact existing public infrastructure or necessitate additional public investment in infrastructure to accommodate the project. More specifically, the Development Committee evaluates the infrastructure impact, availability, and immediate or future needs associated with the development; and, based on that assessment, determines the public costs associated with the provisions of new or improved public infrastructure that are only necessitated because of the proposed development.

The Development Committee is typically involved in developments proposed on recently annexed property on the outer periphery of the City. However, Development Agreements have also been required in certain instances where the project was already zoned and considered to be an "infill" use but the need for infrastructure improvements was necessary.

The Development Committee process begins once a master plan is submitted for review. The Development Committee analyzes the proposal in terms of:

- Infrastructure (roads, water, sewer, traffic control devices)
- Greenways
- Bikeways
- Environmental concerns (wetlands, creeks, etc.)
- City services (garbage/trash/recycling service, fire protection, etc.)

In most cases, the developments referred to the Development Committee will cause a "Development Agreement" to be formulated which articulates two (2) items. The first

analyzes what the various impacts and expenses will be and the second depicts how those items will be addressed for the purposes of ensuring that the infrastructure needs associated with the project, and surrounding area, if appropriate, are secured.

Once the analysis is complete, the City Manager or his designee will serve as the central point of negotiation with the developer. Negotiations will address the findings of the Development Committee and identify the financial responsibilities and commitments of each party. A Development Agreement is then drafted which is ultimately submitted to City Council for its consideration.

It is also important to note, when a proposed development requires improvements and/or reconstruction of City-maintained infrastructure; the developer will be required to provide a Signature Bond prior to the issuance of any permits for construction as identified above.

1.3.4 Development Review Team (DRT)

1.3.4.1 DRT Process Overview

The DRT will review engineering plans (site/civil) for all new developments and redevelopments, including additions and site renovations for everything other than single-family residential. The weekly submittal deadline for a DRT application is Wednesday, by the end of the day. Submittals should be done on the City's Permit Portal, which can be found on the City of Auburn web site at https://webgis.auburnalabama.org/permits.

Applications received by the deadline will be reviewed by the Development Review Team and have comments published back to the portal no later than three (3) weeks from the Thursday after the submittal deadline. Submittals made after the deadline will be automatically placed into the review cycle corresponding to the following week's deadline.

One (1) week after comments are published, there will be an optional "Q and A" meeting upon request by the applicant. This meeting is strongly recommended but is not required. Opting out of the Q & A meeting does not affect the schedule for the regular DRT meeting.

Two (2) weeks after comments are published, there will be a DRT Meeting where the reviewers will discuss the revised plans with the engineer and/or applicant. At that time, if all comments have been addressed, each reviewer may approve the plans for their respective departments.

Note: Revised plans must be uploaded on the permit portal no later than the Monday prior to the scheduled DRT Meeting. If revised plans are not submitted by the end of that day, the DRT Meeting for the project will be automatically postponed to the following Thursday, pending submittal of the revised plans.

The City reserves the right to extend the review period for large or complex projects. In such cases, the City may elect to allocate additional time for review and will inform the applicant of the review schedule within 7 days of a complete submittal. For projects that could meet this criteria, the applicant is encouraged to conduct a pre-application meeting to review the project scope prior to submittal, at which time the magnitude and complexity of the project

can be better determined. The remainder of the DRT process flow will be as described herein and illustrated in Figure 1.1 Development Review Process Flowchart.

If, at the first meeting, all comments are addressed to the satisfaction of the DRT then the Applicant will receive ***Approval***. If the Applicant has not addressed all comments to the satisfaction of the DRT, three (3) other actions are possible.

Conditional Approval
A conditional approval may be granted in cases where the remaining issues are few and will not require substantial review time or significant coordination with other departments. If a conditional approval is granted, it is the Applicant's responsibility to address each of the remaining issues to the satisfaction of the respective departments. Generally, once revised plans are submitted, the applicant can expect a response within seven (7) days.

Continuance
A continuance may be granted (or requested by the Applicant. n there are more than a few outstanding issues and/or the outstanding issues are significant in nature. A continuance may be to a date certain but not to exceed six (6) months from the date of the initial meeting.

Denial
A denial may be issued in situations where outstanding issues are very significant and will require a substantial amount of review time by staff. A denial may also be issued if a continuance beyond six (6) months from the date of submittal is effectuated. If a denial is issued, the Applicant must resubmit plans to the DRT and begin the process again, including the payment of all applicable fees.

1.3.4.2 Pre-construction Meeting
Upon receiving DRT approval and submitting the final plans, the project may be scheduled for a Pre-construction Meeting. To schedule a Pre-construction Meeting, the Applicant should contact the Engineering Services Inspections Manager. The Applicant is responsible for ensuring that representatives for the following parties are present at the Pre-construction Meeting:

1. The general contractor
2. The contractor(s) performing the site, paving, and utility work for public infrastructure
3. The engineer of record

For developments constructing public or private streets, the geotechnical consultant and paving contractor should also be present. Representatives from other City Departments will be in attendance at the Pre-construction Meeting as well as representatives from various private utility companies when appropriate. The owner is also encouraged to attend. Typically, a Pre-construction Meeting can be scheduled to occur within one (1) week of the request.

1.3.4.3 DRT Submittal Requirements
Initial DRT application submittals should be made online using the Auburn Permit Portal. The portal can be accessed by directing a web browser to

https://webgis.auburnalabama.org/permits. Alternatively, a link to the portal can be found on the DRT page of the City of Auburn's web site.

In general, most files should be submitted in PDF format. However, some documents may be better suited as Excel or Word files and may be uploaded in their native formats.

Note: A comment response letter should accompany all resubmittals containing a narrative response to address each DRT comment. Additionally, all revised plans should utilize revisions clouds to easily identify the modifications.

Hard copies are not required, nor recommended, for the initial DRT submittal. If the applicant is unable to produce a full digital submittal through the web portal, the City should be contacted about submitting hard copies.

All applications to the DRT are required to contain the following items:

Initial Submittal:

ALWAYS REQUIRED

- PDFs of the engineering plans sheets
- Checklist for Site or Subdivision Construction Plans
- Site Plan Sufficiency Checklist (for Site Development applications)
- A copy of the deed(s)
- Authorization to Act as Applicant Form
- LID/GI Review Form

REQUIRED WHEN APPLICABLE

- DRT Application (only required if not submitting via the Permit Portal)
- Drainage Analysis Report, stamped by engineer (include Drainage Checklist)
- Comment response letter (to accompany revised plan submittals)
- A copy of relevant permits (ADEM, USACE, ALDOT, etc.)
- A copy of signed, off-site easements or agreements, if applicable
- Electrical plans for any required pedestrian lighting
- Traffic Impact Study
- Pump Station Design Worksheet
- Fire Flow Calculations
- Development Water and Sewer Service Application
- Backflow Protection Information Form
- Grease Trap Sizing Calculation Data Sheet
- Stormwater Quality Review Tool

Final Submittals:

- One (1) hard-copy of the final, approved engineering construction plans (signed and sealed)
- PDFs of the final, approved engineering plans (uploaded to the Permit Portal)
- Final, approved versions of any other documents that were revised from the initial submittal

1.3.4.4 DRT Forms and Checklists

The DRT submittal will not be considered complete unless the appropriate checklists are attached, completed-in-full, and stamped and signed by a licensed professional engineer in the State of Alabama. It is also important to note that the checklists are not intended to be all-inclusive. Therefore, the completeness of each checklist does not alleviate the obligation of the designer to meet all City codes, regulations, ordinances, and specifications. The forms and checklists are provided to expedite the review process and provide staff with the basic project information. Not all forms are required for all projects as indicated in the individual form description.

The following checklists and/or worksheets have been made part of this Manual and are attached in Appendix B.

- *Site Development Plans Engineering Checklist (Appendix B-1)* – This checklist must be submitted with every set of engineering construction plans for site developments (conditional & permitted use projects). The checklist must be filled out entirely and stamped by a licensed professional engineer in the State of Alabama.
- *Subdivision Construction Plans Engineering Checklist (Appendix B-2)* - This checklist must be submitted with every set of engineering construction plans for subdivision improvements. The checklist must be filled out entirely and stamped by a licensed professional engineer in the State of Alabama.
- *Site Plan Sufficiency Checklist (Appendix B-3)* – This checklist is to assist in review by the Planning Department and must be submitted with the site plan.
- *Stormwater Drainage Checklist (Appendix B-4)* – This checklist must be submitted for all projects requiring stormwater detention.
- *Stormwater Drainage Forms (Appendix B-5)*
    - Gutter Spread Table
    - Pipe Design Table
    - Pre-Development Conditions Worksheet
    - Post-Development Conditions Worksheet
    - Basin/Sub-Basin Peak Discharge Summary Table
    - Total Peak Discharge Summary Table

The following forms and worksheets can be found on the City website and/or within the WRM Design and Construction Manual.

- *Sediment Basin Design Data Sheet* –The Sediment Basin Design Data Sheet is required to be submitted for any project that will utilize sediment basins.
- *Pump Station Design Worksheet* - This worksheet shall be submitted for any development that proposes to utilize a sanitary sewer pump station.
- *Backflow Protection Information Form* – This form shall be submitted electronically for any development that proposes to connect to the AWWB water distribution system.
- *Development Water and Sewer Services Application* – This application form is required to be submitted electronically for any project proposing to utilize water from the AWWB or sewer service from the City.
- *Grease Trap Sizing Calculation Data Sheet* – This form is required to be submitted electronically for any development utilizing a grease trap.

1.3.4.5 Final Approval

All approvals from other boards must be granted prior to receiving a full DRT approval. It is important to note that the approval will expire, unless construction has commenced, within eighteen (18) months following the date of approval. If the conditional use approval or plat expires, the DRT approval subsequently expires. The Applicant must formally request an extension on the DRT application commensurate with the extension of the conditional use or plat approval. Furthermore, any substantial changes that effects the approved engineering plans before DRT expiration may require updated plans be submitted to the DRT and receive approval by the appropriate board.

1.3.4.6 DRT Process Flowchart

In Figure 1.1 is a Development Review Process Flowchart. This flowchart is meant to summarize the processes to be followed by the DRT and the development submittal Applicant.

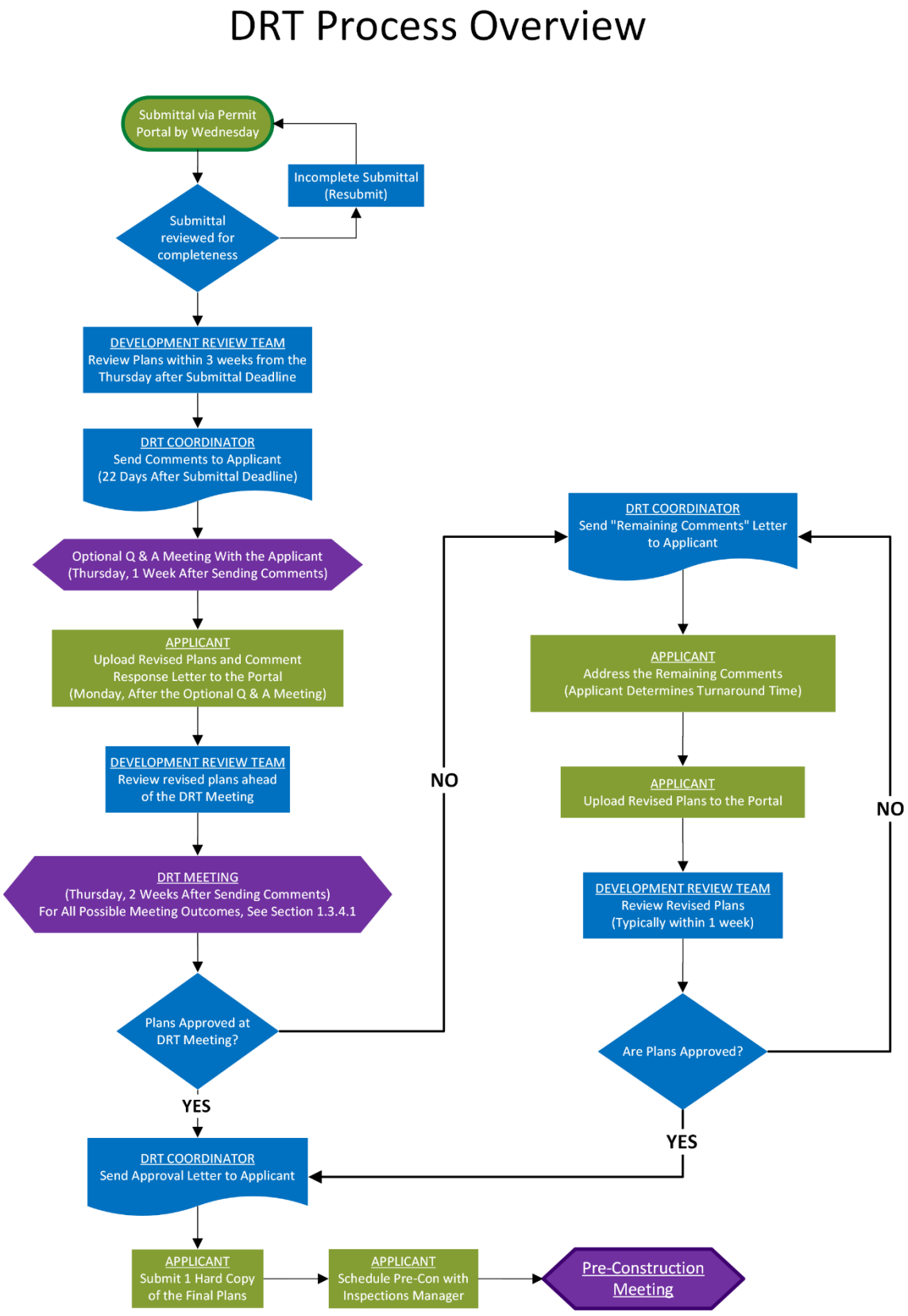

FIGURE 1.1
Development Review Process Flowchart

1.3.5 Permits

Permits are required by the City to assure that proper requirements, conditions and standards are used in design and construction and to assist City Staff in the monitoring of progress and assurance of quality in the constructed project.

There are several departments within the City from which permits are required during specific points in the design and construction process. Pertinent permits that are issued by the City include:

- Demolition Permit (Inspection Services Department)
- Burn Permit (Public Safety Department – Fire Division)
- Erosion and Sedimentation Control Permit (Engineering Services Department)
- Clearing, Grading, and Utility Permit (Engineering Services Department)
- AWWB Water Main Connection Permit (Water Resource Management Department)
- Blasting Permit (Inspection Services Department)
- Zoning Certificate (Planning Department)
- Building Permit (Inspection Services Department)
- Sign Permit (Planning Department)
- COA Sanitary Sewer Connection Permit (Water Resource Management Department)

Each permit is discussed in some detail in the sections to follow. The discussion of each permit is not meant to provide all information regarding that particular permit. The Applicant should refer to the appropriate regulation, ordinance, or code that will describe the permit requirements in more detail.

It is also important to note that performing any work without the required/appropriate permit will result in a stop work order and a potential fine.

1.3.5.1 Demolition Permit

The City requires that a Demolition Permit be acquired to demolish existing structures. The Demolition Permit is issued by the Inspection Services Department.

1.3.5.2 Burn Permit

Burn Permits are issued by the Public Safety Department – Fire Division. For information on Burn Permits, please contact the Fire Department.

1.3.5.3 Erosion and Sedimentation Control Permit

The Erosion and Sedimentation Control Permit is administered by the Engineering Services Department. It will be issued prior to the Clearing, Grading and Utility Permit. However, in order to obtain the Erosion and Sedimentation Control Permit, Erosion and Sediment Control plans must be submitted to and approved by the DRT. All DRT submittal requirements still apply and the review is subject to the same dates and deadlines as any other required DRT submittal. The Erosion and Sedimentation Control Permit allows the

Applicant to perform limited clearing of site vegetation required to install Best Management Practice (BMP) measures around the proposed site.

Prior to issuance of the Erosion and Sedimentation Control Permit, a copy of an approved NPDES Permit from ADEM must be provided to the City, when required. Additionally, a Corps of Engineers Permit may also be required for the site. In those cases as well, the City must be provided with a copy of that permit before issuance of the Erosion and Sedimentation Control Permit.

On large or complex projects, a Pre-construction Meeting may be required to specifically address BMP installation. This type of Pre-construction Meeting does not take the place of the final Pre-construction Meeting after receiving a full, engineering plan approval. Upon approval of the BMP plans and the Pre-construction Meeting being held, if required, an Erosion and Sedimentation Control Permit may be issued.

NOTE: No other permits will be issued until full construction plans have been granted approval. A complete submittal for the issuance of concurrent permits can be achieved through the DRT process.

1.3.5.4 Clearing, Grading, and Utility Permit

The Clearing, Grading, and Utility Permits are administered by the Engineering Services Department. This permit allows the developer to clear site vegetation, begin grading operations and install required site utilities. Clearing, Grading, and Utility Permits may be obtained only after the DRT has approved the engineering plans.

A Clearing, Grading, and Utility Permit will not be issued until after the Pre-construction Meeting has been conducted and soil proctor information has been submitted to the Engineering Services Department.

Upon installation of all site BMP's, the developer must contact the Engineering Services Department and request a field inspection before proceeding with clearing, grading and utility installation. If the inspector determines that all site BMP's have been installed according to the approved Erosion and Sedimentation Control plan, the developer may obtain a Clearing, Grading, and Utility Permit.

1.3.5.5 AWWB Water Main Connection Permit

The Water Works Board of the City (AWWB) requires a permit for all connections made to existing water mains inside the AWWB distribution system. These permits are administered by the WRM Department on behalf of the AWWB. Applicants must notify the WRM Department of the proposed connection at least 48 hours prior to installation and shall submit a plan sheet detailing the connection if plans were not submitted through the DRT.

All connections made to the AWWB distribution system shall be coordinated with and done in the presence of a representative of the AWWB or City Inspector. The AWWB representative or City Inspector shall be certified as an Alabama Grade I Water Operator to inspect the system connection. The Water Main Connection Permit will be provided to the appropriate AWWB representative or City inspector by the WRM Department upon approval for the authorization of the connection. Additional information regarding the

AWWB Water Main Connection Permit application and details associated with the permit and connection can be found in Section 2.4.4 of the WRM Design and Construction Manual.

Due to the potential health hazard that exists as a result of contamination to the potable water system from improper system connections, only authorized connections will be allowed to the AWWB distribution system. Persons making unauthorized connections to the AWWB's distribution system shall be subject to prosecution for theft of service in accordance with Alabama Criminal Code Section 13A-8-10 to 10.3 and for tampering with a public water system in accordance with Section 1432 of the Federal Safe Drinking Water Act.

1.3.5.6 Blasting Permit

The City requires a permit for blasting on any proposed project within the City. These permits are administered by the Inspection Services Department. Applicants must notify the Communications Division and Inspection Services Department about the place and time the blasting will occur. Before issuing the permit, Inspection Services Department will perform a license check to determine that the blasting company is a licensed company within the State of Alabama. The Applicant is advised to consult the City Standard Specifications for information regarding blasting. All blasting will be done in accordance with the laws of the State of Alabama and the International Fire Code, latest edition, adopted by the City of Auburn City Council.

1.3.5.7 Zoning Certificate

The Zoning Ordinance sets forth the regulations and requirements for a Zoning Certificate, which must be granted before any development permitted by the Zoning Ordinance, including accessory and temporary uses, may be established or an existing building altered with respect to its use. The Inspection Services Department will not issue a Building Permit unless the DRT and the Planning Department has granted the developer approved site plans and a Zoning Certificate.

All applications for Zoning Certificates shall be filed with the Planning Director.

Following site plan and/or conditional use approval, an Applicant shall have eighteen (18) months from the date of approval to obtain necessary certificate and permits and begin construction. In addition, an Applicant shall have ninety (90) days from the date of issuance of a Zoning Certificate to begin construction. The beginning of construction is defined as the date on which a Building Permit is issued by the City for the construction, renovation, modification, or other work required.

1.3.5.8 Building Permit

Building Permits issued by the City are administered by the Inspection Services Department. The Inspection Services Department will not issue a Building Permit unless the DRT and the Planning Department has granted the developer approved site plans and a Zoning Certificate. The approved site plans are valid for an eighteen (18) month time period and within that period the developer may obtain the Zoning Certificate and the Building Permit.

The Applicant is allowed to submit plans and specifications to the Inspection Services Department and the DRT concurrently to begin the permitting process. Again, no Building Permit will be issued until the issuance of the Zoning Certificate and the proposed site plan has been approved and is on file in the office of the Inspection Services Department.

Building Permits are discussed in more detail in the Zoning Ordinance. It is also important to note that there are additional permits that may be required by the City after the Building Permit has been issued:

- Electrical Permit
- Plumbing Permit
- Mechanical Permit

These permits will be issued only after the Building Permit has been approved.

1.3.5.9 Sign Permit

The City requires that all signs be permitted prior to installation. In order for a Sign Permit to be processed, a site plan showing the sign location and a scaled drawing are required. For additional information regarding Sign Permits, please refer to the Zoning Ordinance.

1.3.5.10 Sanitary Sewer Connection Permit

The City requires a permit for all connections made to an existing sanitary sewer main within the City's sanitary sewer collection system. These permits are administered by the WRM Department on behalf of the COA. Applicants must notify the WRM Department of the proposed connection at least 48 hours prior to installation and shall submit a plan sheet detailing the connection if plans were not submitted through the DRT.

All connections made to the City's sanitary sewer collection system shall be coordinated and done by a licensed and bonded General Contractor carrying the designation of MU-(S) – Sewer projects on their State General Contractors License. The sanitary sewer connection shall be done in the presence of a WRM Department representative of the City or a City inspector. The Sanitary Sewer Connection Permit will be provided to the appropriate WRM representative or City inspector by the WRM Department upon approval for the authorization of the connection. Additional information regarding the WRM Sewer Connection Permit application and details associated with the permit and connection can be found in Section 3.4.3 of the WRM Design and Construction Manual.

Because of the potential environmental and health hazards that exist as a result of a septic leak from improper sanitary sewer collection system connections, only authorized connections will be allowed to the City's sanitary sewer collection system. Persons making an unauthorized connection to the City's sanitary sewer collection system shall be subject to prosecution for theft of service in accordance with Alabama Criminal Code Section 13A-8-10 to 10.3.

1.3.5.11 Other Permits

While it is not the responsibility of this Manual or the City to inform each development Applicant of all permits that may be required in other areas; it is important to note that other governmental agencies may require additional permits under their respective jurisdictions. The Applicant may be required to obtain various permits from County, State and Federal

agencies for a particular project. It is the responsibility of the Applicant to determine any and all permits that may be required for a particular development.

1.4 PROJECT COMPLETION REQUIREMENTS – CONSTRUCTION

1.4.1 Approved Plans and Revisions

Construction shall not begin without approved construction plans conforming to all applicable design standards in this Manual. Any changes in the design after the approval of the plans must be resubmitted to the Engineering Services Department Plans Review Engineer. The Engineering Services Department Plans Review Engineer will distribute the plans to the appropriate Department for review and approval. During construction, if changes are required, construction in the area of the changes shall halt until such time as the plans have been revised, submitted, and approved.

1.4.2 Materials

The materials required to be used for construction shall be as required by the City Standard Specifications located at https://www.auburnal.gov/engineering-services/publications/. The City may require detailed submittal information for any product being installed. Any product found not to be in compliance with the City Standard Specifications shall be removed and replaced at the developer's expense.

1.4.2.1 Submittals

After approved plans have been issued and prior to construction beginning on public infrastructure, a material submittal package shall be provided to the City for review and approval. The material submittal package shall include all product specifications and material data sheets for public infrastructure that are to be installed during construction, and are to be owned and operated by the AWWB and/or the City. Submittal packages shall be provided to the Engineering Services Inspection Division Manager or the Project Manager. Submittals shall not be provided for infrastructure that is to be owned and operated by other private or public owners or entities.

All material submittals shall clearly detail all necessary product information as applicable including, but not limited to; product ID, dimensions, type, material, construction, strength or rating, graphical schematic, picture or sketch, standard technical specifications, or any other attribute critical to the design and function of the appurtenance. Material submittals for concrete structures such as manholes, vaults, or wet wells shall clearly detail all dimensions, reinforcement, layout of affected appurtenances, hatch or cover specifications, and associated fabrication manufacturer.

Material submittal packages shall be submitted digitally in PDF format. A separate PDF file should be used for each type of submittal package (drainage, water, sanitary sewer, etc). The first page of each PDF should list all included material submittals in the package.

The City will review and approve, conditionally approve (as noted), or reject the material submittals for the specific proposed application in accordance with the requirements detailed in this Manual, and the City Standard Specifications. A digitally-stamped copy of the submittal package will be returned to the developer and contractor.

It is the responsibility of the contractor to be familiar with the standard requirements of the AWWB and the City Standard Specifications prior to submittal. All rejected material submittals shall be resubmitted as required and approved prior to the commencement of construction.

1.4.3 Installation Requirements

Installation and construction shall follow the manufacturers' recommendations and the City Standard Specifications. Where a discrepancy exists between the manufacturers' recommendations and the City Standard Specifications, the more stringent of the requirements shall apply.

1.4.4 Inspection and Testing

The City will assign an inspector for the project. This inspector will be responsible for the inspection of the construction. The inspector shall be present for all water and sewer connections and testing procedures. Testing of the street construction shall follow the City Standard Specifications, Section 10 for Streets. Testing of the sanitary sewer system shall follow the City Standard Specifications, Section 12 for Sanitary Sewer Systems. Testing and disinfection of the water mains and appurtenances shall follow the City Standard Specifications, Section 14 for Water Mains and Appurtenances. All testing and disinfection procedures shall be coordinated with the inspector. The City Standard Specifications shall govern testing requirements for infrastructure not listed above. For developments within the territorial jurisdiction area, the Engineer of Record must conduct inspections of the construction of the subdivision and certify to the City and County, in writing, the compliance with the approved engineering plans regulating the development.

1.4.5 Contacts

During construction activities, the first point of contact for the developer or contractor with the City for project related issues or questions shall be the assigned inspector. Where further technical assistance or clarification is required, the inspector will contact the appropriate Department. Any direction received from the City authorizing changes in design or construction methods from the approved plans or the City Standard Specifications shall be at a minimum acquired in writing. Verbal approval shall not be an acceptable authorization to deviate from the approved plans or standards. Changes in the approved design will typically require revision to the plans to be submitted and approved.

All water and sewer locate requests shall be called into Alabama One Call at 1-800-292-8525.

1.5 PROJECT COMPLETION REQUIREMENTS – AS-BUILT DRAWINGS

As-built drawings are required to be submitted for any development where infrastructure such as water mains and services, sanitary sewer mains and services, and/or storm sewer structures are installed and where any ownership and maintenance of said infrastructure is to be administered by the City or the AWWB. The as-built drawings shall provide precise locations and elevations for all installed infrastructure for the entire approved development phase(s) including any offsite infrastructure or infrastructure in subsequent phases or developments that provide service for the particular development phase(s) seeking approval. The as-built drawings shall be submitted and approved, and a Preliminary Acceptance letter provided to the owner, prior to a Building Permit being issued for Single-Family Residential Projects (fee-simple or condo) and prior to the Certificate of Occupancy for Commercial or Multi-family Residential Projects. Review and inspections associated with the as-built submittal will be completed within 10 business days after receipt of a complete submittal package, including all required digital and hard copies. Within 10 days of the as-built submittal, the applicant will receive either a notification with any outstanding issues noted during the review or a Preliminary Acceptance letter if no issues are noted. In no case will the AWWB set a water meter or activate a water account for a development that has not submitted a complete set of as-built drawings. The City or the AWWB may waive the as-built requirement for small developments that are not installing more than 100 feet of publicly maintained water, sanitary sewer, or storm sewer mains.

1.5.1 Surveying

As-built drawings shall be surveyed and certified by a licensed professional land surveyor (PLS) in the State of Alabama. All coordinates shall conform to the Alabama East State Plane (0101) Coordinate system referenced to the North American Datum (NAD) 83 (2011) EPOCH 2010, for horizontal control, the North American Vertical Datum (NAVD) 88 (CONUS) for vertical control, and the National Geodetic Survey (NGS) GEOID12A (CONUS) model. All measurements must be recorded in US survey feet (Northing and Easting) to the nearest one hundredth of a foot.

As-built drawing features may be surveyed using traditional surveying methods or Real Time Kinematic (RTK) corrected Global Position System (GPS) methods. When utilizing GPS surveying methods, the survey shall reference the following Alabama Department of Transportation (ALDOT) Continuously Operating Reference Station (CORS):

CORS Name:	ALAU
IP Address:	205.172.52.26
Port Number(s):	14302

More information regarding the ALDOT CORS Network can be found at the following website: http://aldotcors.dot.state.al.us. In addition to the ALAU CORS station reference, each as-built drawing submittal shall reference a minimum of two control points physically located on the project site. These controls may be property corners, right-of-way monuments, and site control (ferrous only). Any GPS or traditional surveys that do not reference the

ALDOT CORS shall reference a minimum of two control points set by the City of Auburn. The surveyor shall contact the WRM Department to have the appropriate control points set for the development.

It shall be the responsibility of the developer and/or his agent(s) to maintain these control points throughout the duration of the project. Any required replacement of the project controls shall be at the developer's expense. The required digital submittals discussed in Section 1.5.3 shall show all project control points in order for the submittal to be considered complete. A copy of the survey raw data verifying how the control was set is also required with the final digital submittal.

All points collected using GPS surveying methods (including control points) shall be submitted with the degree of accuracy listed for each survey point. Coordinates and measurements that are provided using GPS technologies shall be classified as either Critical (C) or Noncritical (NC) in terms of the degree of accuracy required for those survey points. Critical coordinates and measurements shall generally be considered as any points used for establishing control (horizontal and vertical) or for purposes of attaining vertical positioning of sanitary or storm sewer rim and invert elevations (including pump stations), or where horizontal or vertical tolerance of the specific feature is minimal. All Critical coordinates and measurements shall be provided with a degree of accuracy of no greater than +/- 0.05 feet horizontal and +/- 0.10 feet vertical with a minimum observation time of 180 epochs. All other GPS coordinates and measurements (horizontal and vertical) shall be considered Noncritical and shall in no case exceed a degree of accuracy of +/- 0.10 feet horizontal and +/- 0.20 feet vertical with a minimum observation time of 30 epochs. All GPS survey points shall be collected with a maximum Position Dilution of Precision (PDOP) value of no greater than 2.00.

In order for the as-built survey to be considered complete for a development, all the following surveyed features, coordinates, and information shall be included, where applicable:

1. Water Distribution Features
    a. Water main location, finished grade elevation, size, and material (one (1) coordinate provided every one hundred (100) feet minimum along straight sections of pipe, every 40 feet minimum where pipe is being deflected, and at all bends and fittings along the main). Note: Main locations should be marked by the contractor during installation with a 2-inch vertical PVC pipe at all bends, fittings, elevation transitions, and at a minimum of every 100 feet in accordance with the standard specifications. (NC). In lieu of installing the vertical PVC pipe for features to be located, survey shots can be made on the exposed feature during installation.
    b. Water valve location (center of valve box cover), cover elevation, size, and type. (NC). For butterfly valves, a shot shall be taken on the valve box cover and the main adjacent to the valve box cover. Note: Valve location shots are not to be counted as the main line shots referenced in 1.5.1.1.a.
    c. Fire hydrant location, finished grade elevation, manufacturer, and year (surveyed in front of the hydrant steamer nozzle at the finished grade elevation).

d. Service line location, finished grade elevation, and size (typically at a meter box or meter vault at the edge of the easement or right-of-way). Approximate location of main line connection shall be field verified and provided on the as-built drawings.

e. Blow-off and air release valve location (center of cover), elevation, size, and manufacturer.

2. Waste Water Collection Features

a. Sewer manhole location, size, material, rim elevation (center of cover), and bottom elevation (center of manhole invert).

b. All main line invert elevations entering or exiting a manhole including proper connectivity to the appropriate manhole Object ID's (service line connection elevations are not required). "Memphis tee" drop connections in a manhole shall only be recorded for the highest vertical connection.

c. Sewer gravity main location, size, and material at all manholes.

d. Service line location and size (typically at a clean out or stub out at the edge of the easement or right-of-way). Approximate location of main line or manhole connection shall be field verified and provided on the as-built drawings.

e. Grease trap location (approximate center), elevation, and size.

f. Pump station site plan, which shall graphically display all pertinent features of an installed pump station site including but not limited to: property boundary, finished grade contours, fence boundary, gates, access road, water service, yard hydrant, concrete slabs, wet well and valve vault perimeter, wet well and valve vault hatch, standby diesel pump, electrical control panel, utility pole, telemetry pole, wet well vent, quick connection piping, force main piping, gravity main piping, manholes, drainage and storm sewer features, streams and applicable buffers, and any other appurtenance or notable feature within the pump station site. Also, the site plan and survey data shall include all the following elevations: wet well rim, wet well floor, valve vault rim, valve vault floor, liquid level floats, onsite gravity inverts, and manhole rims.

g. Sewer force main location, finished grade elevation, size, and material [one (1) coordinate provided every one hundred (100) feet minimum].

h. Sewer force main valve location (center of valve box), finished grade elevation, size, and type (i.e. plug, gate, etc).

i. Sewer force main air release valve location (center of cover), elevation, size, and manufacturer.

j. Horizontal and vertical force main bend location, finished grade elevation, size, and degree.

3. Storm Water Features

As-built drawings are required for all new City maintained stormwater infrastructure. As-built drawings are also required for any modifications to existing City maintained

infrastructure. Modifications include structure type, main size, rim elevation, and material.

a. Storm sewer manhole/inlet location, rim elevation (center of cover), type, and condition, outlet structure. (C).

b. Storm sewer headwall location at pipe terminus, type, presence of rip rap, outlet treatment, and condition. (C).

c. All invert elevations entering or exiting the manhole/inlet or headwall including proper connectivity to the appropriate manhole/inlet or headwall Object ID's. (C).

d. Storm sewer main size, shape, material, and condition. (C).

4. Decorative Pedestrian Lighting

a. Pedestrian light location, bulb type, pole description, and color.

b. Conduit between poles, conduit between junction boxes, and conduit to the panel.

c. Empty conduit for future use by City of Auburn.

5. The PLS certification shall be provided on each as-built plan sheet and shall state:

"I _____, A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF ALABAMA, CERTIFY BY TESTAMENT OF AFFIXED SEAL AND SIGNATURE THAT THE AS-BUILT MEASUREMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS SURVEYED IN THE FIELD UNDER MY DIRECTION ON _____, 20__.

_____, PLS No._____

1.5.2 Engineering

As-built drawings shall be certified by the engineer of record responsible for the design of the project infrastructure and utilities or a licensed professional engineer in the State of Alabama with sufficient knowledge of the project. The engineer is responsible for reviewing the installed items for compliance with the approved construction plans and with the Design Standards detailed in this Manual.

Any deviations from the approved construction plans shall be clearly shown in bold type and line weight, with the original design shown and crossed out. The original design shall not be erased on the as-built drawings. In no case will hand drawn "red line" construction plans be accepted for as-built drawings.

The completed as-built drawings shall include the following information:

1. Title block.
2. North arrow.
3. Graphic scale.
4. Overall plan view of the project.

5. Horizontal and vertical coordinates of all established survey control points.
6. Horizontal and vertical coordinates of all sanitary and storm sewer manholes and inverts.
7. All applicable bearings, distances, pipe sizes, slopes, materials, etc.
8. All applicable property line and easement information.
9. The engineer of record certification shall be provided on each as-built plan sheet and shall state:

   "I _____, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ALABAMA, CERTIFY BY TESTAMENT OF AFFIXED SEAL AND SIGNATURE THAT THE INFORMATION PROVIDED BY _____, REGISTERED LAND SURVEYOR No. _____ AND SHOWN ON THIS AS-BUILT PLAN HAS BEEN REVIEWED FOR COMPLIANCE WITH THE APPLICABLE ENGINEERING DESIGN STANDARDS OF THE CITY OF AUBURN AND/OR THE WATER WORKS BOARD OF THE CITY OF AUBURN AND DOES COMPLY WITH THOSE STANDARDS TO THE BEST OF MY KNOWLEDGE AND BELIEF.

   _____, PE No._____

1.5.3 Submittal

As-built drawings shall be submitted directly to the WRM Department at 1501 West Samford Avenue. The WRM Department will distribute the drawings to the necessary Departments of the City for review and approval. The review of the submittal and any subsequent comments should be completed within 10 business days. The drawings shall be reviewed and approved prior to a Building Permit being issued for subdivision projects and prior to Certificate of Occupancy for site plan projects. In no case will the AWWB set a water meter or activate an account for a development that does not have an approved set of as-built drawings. The initial submittal package shall include four (4) hard copies printed on 24 x 36 inch plan sheets as well as one (1) digital copy provided on CD.

The completed as-built drawings shall include the following information:

1. Title block.
2. North arrow.
3. Graphic scale.
4. Overall plan view of the project.
5. Horizontal and vertical coordinates of all established survey control points.
6. Horizontal and vertical coordinates of all sanitary and storm sewer manholes and inverts.
7. All applicable bearings, distances, pipe sizes, slopes, materials, etc.
8. All applicable property line and easement information.
9. The hard copies shall be certified by the PLS and PE on each plan sheet with the applicable notation, signature, and seal.

10. All plan sheets shall be clearly marked in the title block with the notation "AS-BUILT".

The digital copies of the as-built drawings shall be submitted in a format compatible to the City of Auburn software. Each digital copy of the as-built drawings shall include a copy of all as-built plan sheets in both DWG and PDF formats. PDF files shall be a minimum resolution of 300 dpi. Each applicable feature provided in the DWG file shall be located in a separate and clearly labeled layer.

In addition to the drawings, each digital copy shall also include the survey data in tabular form as an Excel (XLS) spreadsheet. The layout of the tabular data shall be in accordance with the standard template spreadsheet provided by the City of Auburn for the appropriate feature being collected. All fields associated with that feature shall be populated as designated or required, and any applicable quality control query errors included in the spreadsheet template shall be addressed prior to submittal. The tabular data required is for features that will be imported into the City's GIS database and is not intended to be all inclusive of the survey collection that may be required to adequately compile the as-built drawing information. Additional feature data may be required on the as-built drawings for graphical display of installed conditions that are not specifically requested as part of the tabular data to be submitted.

Upon approval of the initial submittal package, two (2) final hard copies and one (1) digital copy shall be provided.

1.6 PROJECT COMPLETION REQUIREMENTS – EASEMENTS

1.6.1 Discussion

Easements shall be dedicated for all publicly owned and maintained infrastructure that are not located on public right-of-way or covered by an existing easement. Any easements that are needed for the development shall be dedicated in a manner acceptable to the City either by plat or by document. Specific language for the easement dedication shall be prepared by the City and shall be used for the dedication.

No fences, canopy trees, or any other obstructions shall be allowed in easements without prior approval of the City. Where it can be demonstrated that it is not possible to locate a necessary obstruction outside an easement, the City and/or the AWWB may approve the placement of the obstruction with the execution of a Hold Harmless Agreement as defined in Section 1.7.1 of this Manual. The location of the obstruction within the easement shall be such that the conflict with proposed or existing infrastructure is minimized to the maximum extent practical. Approval from the City shall be acquired prior to the placement of any necessary obstruction in an easement. Obstructions placed in easements without prior approval shall be removed, as directed, at no cost to the City or the AWWB.

All permanent easements where public infrastructure is installed shall be graded and smoothed to allow sufficient access and use for mowing equipment and maintenance vehicles prior to acceptance by the AWWB or the City. The permanent easement shall be completely cleared of all trees, brush, boulders, and debris. All rocks shall be buried, crushed, or removed from the easement where, in the opinion of the AWWB or the City, they present a hazard for access and use of the easement. Typically, no rock shall remain on the ground surface that is larger than a No. 1 stone classification. All creek and ditch crossings shall also be made accessible for mowing and maintenance equipment as deemed appropriate by the AWWB and the City prior to acceptance of the public infrastructure.

No water or sewer services shall be activated prior to the actual legal dedication of all necessary easements. All testing and water main disinfection procedures may proceed prior to easements being dedicated in order to complete construction, but domestic services will not be provided until the necessary easements are granted.

All easements needed for the development shall be identified during the plan review process. The standard easement width for water, sewer, and storm drain is based on two (2) times the depth of cover (measured from finished grade to the bottom of the pipe or structure), rounded up to the nearest multiple of ten (10) feet, with a minimum easement width of twenty (20) feet. Easements for installation of water and sewer utilities may require additional width to ensure adequate separation between structures and the installed utility is achieved to allow reasonable excavation of the utility without compromising the structures foundation. Generally, a minimum separation of fifteen (15) feet would be acceptable to the City where depths of the utility are less than ten (10) feet; however, the City reserves the right to request additional easement width based on the site specific circumstances of the easement. The engineer of record shall be responsible for evaluating the foundation design and separation

required on a case specific basis and may provide any applicable design information to the City for consideration in determining the required easement widths. The actual easement width shall be calculated based on the actual installed depths. The infrastructure shall be centered in the easement, and shall be verified with the as-built drawings. If it is determined that the water, sewer, or storm drain line was not installed in the previously dedicated easement to allow for the proper maintenance, the easement shall be promptly rededicated in the installed location.

All water and sewer utility and storm drain easements shall be dedicated to the City as Drainage and Utility Easements unless otherwise approved and shall not be combined with any other utility easements (i.e. gas, electric, communications, etc.). City Drainage and Utility Easements are exclusive and are not to be used to install any other non-City owned and maintained utility. An exception to this would be a perpendicular crossing of another utility. Where other utilities must be installed inside a City Drainage and Utility Easement, and where approved by the City, an Easement Encroachment Agreement will be required with the encroaching utility as defined in this Manual in Section 1.7.2 "Easement Encroachment".

1.6.2 Dedication by Document

Easements to be dedicated by document shall include a legal description of the easement area, a surveyed drawing titled 'Exhibit A' showing the easement limits and the installed location of the utility, as well as a vicinity map showing the general location of the property. The legal description and exhibit shall be prepared by a licensed professional land surveyor in the State of Alabama. The legal description, exhibit, and vicinity map for easements shall be submitted to the City for review and approval with the as-built drawings for the development.

After the legal description and exhibit have been submitted and approved, the City will assist the developer in preparing the easement document, and submitting to the City Council for approval. Proof of ownership will be required prior to the recording of the easement document, and must be in a form acceptable to the City Attorney. The actual recording of the document will be coordinated with the City after the review and approval of the easement document by the City Council.

1.6.3 Dedication by Plat

Easements to be dedicated by plat shall be identified during the review process and shall be identified on the Preliminary Plat included in the plans. All plats shall be prepared by a licensed professional land surveyor in the State of Alabama and shall be submitted to the Planning Department to be routed for review and shall be in accordance with all applicable Zoning Ordinances and Subdivision Regulations. All easements shall be shown and clearly labeled on the plat. The easement widths shall be clearly identified and shall be in accordance with the standard easement width requirements based on installed depths.

All easements shown on the Final Plat shall be in the as-built location of the utility and shall be surveyed by a licensed professional land surveyor in the State of Alabama prior to submittal. If the Final Plat is recorded prior to infrastructure being installed, the recorded plat shall be checked against the surveyed as-built drawings by the City prior to acceptance of the utility. If any discrepancies are discovered between the recorded easement and as-built utility locations or installed depths that, according to the City, would hinder the maintenance or

repair of the infrastructure, the developer/owner will be required to revise the plat and easements as necessary prior to preliminary acceptance of the affected water or sewer infrastructure in question.

1.6.4 Easement Language

The easement wording shall be reviewed by the City and the AWWB for approval. All plans and plats shall include the following standard notation:

- "No permanent structures may be constructed or placed on easements. Fences may be erected perpendicularly across the easement provided there is a minimum twelve (12) foot wide access gate installed. If the gate is to be locked there must be a City approved lock installed in conjunction with the owners lock. No trees shall be planted within ten (10) feet of utilities."
- "By placing obstructions within or encroaching onto the easement, the property owner(s) does for itself, its successors, and assigns agree to indemnify, hold harmless and defend the City of Auburn, its officials, representatives, agents, servants and employees from and against all liability and loss which may be sustained as a result of claims, demands, costs or judgments arising out of the location of the obstruction within the easement including its reasonable costs in defending against any such claims and further agrees to release and discharge the City of Auburn from any damages to the obstruction arising from utility maintenance work within the easement or any damages to the obstruction resulting from its placement in the easement."
- By placing any portion of an irrigation system within the easements or right of way, the property owner does for itself , its successors and assigns agrees to hold harmless and defend the City of Auburn, its officials, representatives, agents, servants, and employees from and against all liability and loss which may be sustained as a result of claims, demands, cost or judgments arising out of the location of the obstruction within the easements or right of way including its reasonable cost in defending against any such claims. The property owner further agrees to release and discharge the City of Auburn from any damages to the irrigation system arising from any work or maintenance work within the granted easement or right of way or any damages to the irrigations system resulting from its placement within the easement or right of way. Irrigation systems are limited to only laterals being placed within any easements or right of way.

1.7 PROJECT COMPLETION REQUIREMENTS - AGREEMENTS

1.7.1 Hold Harmless and Indemnity

There may be certain situations where a sign or other obstruction is requested to be placed on or adjacent to a dedicated easement or in the right-of-way that would hinder the maintenance or repair.

The City shall be notified prior to the construction or placement of any such obstruction and will make the determination if the encroachment will be allowed. A plan sheet shall be submitted to the City detailing the obstruction and its relative location to the easement for approval. If the City decides the obstruction or encroachment will be allowed, the owner may be required to enter into a Hold Harmless Agreement with the AWWB and/or the City. The approved plan shall be attached to the Hold Harmless Agreement as 'Exhibit A' and shall be referenced in the agreement.

The exact format and language of this Hold Harmless Agreement will be determined by the City and the AWWB. All costs associated with the Hold Harmless Agreement will be the responsibility of the developer. This would include any legal fees and recording fees for the document. A sample standard Hold Harmless Agreement is provided in Appendix C, but is subject to modification to fit the site specific request and conditions.

1.7.2 Easement Encroachment

There may be certain situations where other utilities that are not owned by the AWWB or the City are requested to be placed on a dedicated easement.

The City shall be notified prior to the construction or placement of any such utility and will make the determination if the encroachment will be allowed. A plan sheet shall be submitted to the City detailing the extents of the encroachment on the easement for approval. If the City decides the utility encroachment will be allowed, the owner of the utility will be required to enter into an Easement Encroachment Agreement with the AWWB and/or the City. The approved plan shall be attached to the Easement Encroachment Agreement as 'Exhibit A' and shall be referenced in the agreement.

The exact format and language of this Easement Encroachment Agreement will be determined by the City and the AWWB. All costs associated with the Easement Encroachment Agreement will be the responsibility of the developer or the owner of the encroaching utility. This would include any legal fees and recording fees for the document. A sample standard Easement Encroachment Agreement is provided in Appendix D, but is subject to modification to fit the site specific request and conditions.

1.8 PROJECT COMPLETION REQUIREMENTS – ACCEPTANCE

1.8.1 Authorities

The AWWB may accept ownership and maintenance of all public water mains, services, and related appurtenances installed for a development up to any metered connection or approved backflow prevention assembly inside the right-of-way or at the edge of an easement that is directly connected to the AWWB distribution system and that was designed, installed and tested in accordance with the applicable standards detailed in this Manual. The AWWB maintains services connected to the AWWB distribution system up to and including the associated meter. It is the customer's responsibility to maintain the service beyond the AWWB's meter. The customer is also responsible for any maintenance associated with an unmetered fire protection system connected to the AWWB's system beginning at the AWWB's isolation valve. The customer's responsibility includes any backflow prevention assembly installed on a service connection, which shall be maintained, tested, and inspected in accordance with the AWWB's Backflow Prevention and Cross-Connection Control Policy.

The Sewer Division may accept ownership and maintenance of all public sanitary sewer gravity mains, pump stations, and force mains installed for a development inside the right-of-way or easement that connects to the City sanitary sewer collection system and that was designed, installed, and tested in accordance with the applicable standards detailed in this Manual.

The Engineering Services Department may accept ownership and maintenance of all public storm drain infrastructure, streets, sidewalks, and bicycles facilities installed for a development inside the right-of-way or easement that was designed, installed, and tested in accordance with the applicable standards detailed in this Manual. The City does not maintain stormwater storage facilities, but will inspect these facilities annually to ensure proper maintenance and operation by the owner.

1.8.2 Preliminary Acceptance

A development will be eligible for preliminary acceptance of public water and sanitary sewer infrastructure by the AWWB and the City upon completion of the following items (in particular order):

1. Submittal and approval of construction plans in accordance with the applicable standards detailed in this Manual for both water and sanitary sewer design.
2. Construction inspection provided by the AWWB or the City or adequately documented in accordance with the City Standard Specifications for water and sewer construction.
3. Successful testing procedures performed and results documented in accordance with the City Standard Specifications for water and sewer testing.
4. Proper disinfection achieved and documented for all water mains and appurtenances installed in accordance with the City Standard Specifications for water main disinfection.

5. As-built drawings submitted and approved in accordance with this Manual for all water and sewer infrastructure.
6. Final inspection by the AWWB and the City for all water and sewer infrastructure and all noted deficiencies corrected. The final inspection shall be scheduled with the Project Inspector, the Water Distribution Manager, and the Sewer Collection System Manager after all applicable testing and disinfection has been successfully completed for the water and sewer infrastructure and as-built drawings have been submitted to the WRM Department. Sewer pump stations shall be inspected in accordance with the requirements in Section 3.5.11.3 of the WRM Design and Construction Manual.
7. All appropriate Drainage and Utility Easements dedicated in accordance with this Manual in Section 1.6 "Project Completion Requirements – Easements" and the Final Plat signed (if being platted).
8. All necessary Hold Harmless Agreements or Easement Encroachment Agreements executed in accordance with this Manual in Section 1.7 "Project Completion Requirements – Agreements".

The WRM Department will issue a written preliminary acceptance letter upon completion of the items covered in this section. Preliminary acceptance is not granted by the City for storm drain or transportation infrastructure.

1.8.3 Final Acceptance

Final acceptance of water and sewer mains and appurtenances will not be granted by the AWWB or the City until such time that all local construction activity for the entire development phase taking place on the right-of-way or easements in which the water and sewer are located is substantially completed, which is including but not limited to; other utilities, storm sewer construction, major grading, sidewalk installation, and roadway preparation, including curb, subbase, base, or binder placement. If more than twelve (12) months has expired from the date of the preliminary acceptance letter, when final acceptance is requested by the developer, a second final inspection shall be scheduled with the Water Distribution Manager and Sewer Collection System Manager prior to final acceptance being issued. Upon substantial completion of construction and successful correction of all noted deficiencies at the time the final acceptance is requested, the WRM Department will issue a written final acceptance letter.

Final acceptance of storm drain and transportation infrastructure will occur after placement of the final wearing surface and subsequent final inspection by the Engineering Services Department. Any deficiencies noted for correction during the final inspection must be completed before final acceptance is granted. Subdivision Completion Bonds will be released after all City and AWWB infrastructure receives final acceptance.

1.9 PROJECT COMPLETION REQUIREMENTS – WARRANTY PERIOD

The developer is responsible for all damages caused to infrastructure within the development due to construction activity as well as any defects in materials and workmanship associated with the installed infrastructure for a period of not less than one (1) year from the date of the City's final written acceptance of the infrastructure, or the signing of the Final Plat, whichever is later.

All improvements have to be inspected and repaired at the time of the placement of the wearing surface. The bond proceeds can be used for the repair and installation of any and all infrastructure that is not completed by the developer.

Due to the health risks associated with contamination of the potable water supply and regulations associated with maintaining a public water distribution system, only AWWB personnel are authorized to operate or work on water mains connected to the AWWB distribution system. As a result, the AWWB will provide all operation, maintenance, repair, and emergency response services after preliminary acceptance has been issued and the service has been activated for public use, including during the warranty period. The City will also provide repair, and emergency response services for sanitary sewer related issues within the development after preliminary acceptance and during the warranty period if not timely and satisfactorily addressed by the developer.

All costs associated with any necessary repairs or emergency response services provided by the AWWB or the City during the preliminary acceptance or warranty periods due to damages caused by construction activity, or defects in materials or workmanship shall be the full responsibility of the developer including all labor, equipment, and materials required to perform the work. The AWWB or the City will invoice the developer for all such costs

1.10 PROJECT COMPLETION REQUIREMENTS – FEES & CHARGES

1.10.1 Discussion

There are multiple fees associated with obtaining water and sewer services from the AWWB and the City. These fees include, but are not limited to, access fees, deposits, tap fees, and meter set fees. All applicable fees for any new development or redevelopment will be due for both water and sewer services, where provided by the AWWB or the City, at the time the Zoning Certificate is issued and prior to the issuance of a Building Permit. All associated fees shall be paid at the Water Revenue Office at 1501 West Samford Avenue. A current rate schedule of all normally applicable water and sewer fees can be found on the City's website.

1.10.2 Water and Sewer Fee Estimates

During the plan review process, the WRM Department may provide an estimate for access fee credits and charges at locations with existing water and/or sewer accounts. The estimate provided will be based on information derived from the plans submitted and the published rates available on the date of the estimate. The rates are subject to change and are not guaranteed by the estimate. The estimate amount provided will not include any tap fees, meter set fees, or deposits that may also be applicable for the project. All required water and sewer fees shall be paid at the Water Revenue Office prior to the issuance of a Building Permit for the development, and will be based on the published rates at the time the fees are collected.

1.11 UPDATES AND WAIVERS TO THE MANUAL

Updates to this Manual will be made periodically as deemed necessary. These updates will be posted to the City's web site, along with a brief overview of any of the changes made, the reason for the change, and a date the changes will go into effect.

1.11.1 Updates

The users of this Manual are encouraged to suggest changes and/or revisions to the Manual. These suggestions will be considered and, if deemed appropriate, a revision will be made to the Manual. It is expected that this will be updated on an annual basis. Any individual who believes that a change is necessary to the Manual is encouraged to submit the suggestion in writing to the City for consideration.

Periodically, as revisions are made to the Manual, the changes will be posted to the City's website. It is the responsibility of the users of this Manual to make certain that they are using the current version.

1.11.2 Project-Specific Waivers

1.11.2.1 Waiver Criteria

The City may make project specific waivers to an existing City standard when any one (1) of the following conditions applies. It should be noted that the City is not required to make a waiver just because one (1) of the conditions below applies, but these are the only circumstances under which a waiver will be considered:

1. The standard is not applicable to the particular situation.
2. Topography, right-of-way (ROW), or other geographical conditions impose undue hardship on the Applicant or extraordinary environmental damage; and an equivalent alternative that can achieve the same design objective is available and does not compromise public safety.
3. A waiver is required to address a specific design or construction problem that will result in an undue hardship to the Applicant with little or no material benefit to the public, if not granted.
4. New technology is available that results in an economic benefit to the project, accomplishes the same design objective, reduces environmental intrusion, and does not compromise public safety.

1.11.2.2 Procedure

For items that meet the Waiver Criteria specified in this Manual in Section 1.11.2.1 "Waiver Criteria", the following procedure applies:

- Waiver request
- City's review and request disposition
- Appeal

The elements of the procedure are discussed in more detail in the following subsections.

Waiver Request:
Any person may request a Waiver to a City standard by submitting a written request to the City Engineer. The written request must state the desired waiver, the reason for the waiver, and a comparison of the waiver to the existing standard. The written request shall be on the "Request for Design and Construction Standard Waiver Form", located in Appendix E, and shall include, at a minimum, the following information:

1. A completed "Request for Design and Construction Standard Waiver" form.
2. A narrative description that includes the following information for each requested waiver:
    a. State what the waiver request is and compare it to the existing City standard.
    b. State the reason for the waiver and describe how it meets the Waiver Criteria specified in this Manual in Section 1.11.2.1 "Waiver Criteria".
3. Reference any relevant industry standards or specifications that support the waiver request.

City's Review and Request Disposition:
The City will review all properly completed forms and take one of the following actions:

- Approve as requested
- Approve with noted conditions
- Deny the request

The City's response will be in writing. A conditional approval or denial of the request will be accompanied with a brief explanation. Any approved Waiver is project-specific and does not constitute a precedent for the modification of a standard.

Appeal:
An Applicant may appeal a denied Waiver request to the Planning Commission or to the AWWB, as applicable, within 30 days from the date of the City's response letter.