CHAPTER 1

INTRODUCTION

1.1	GENERAL INFORMATION	1
1.1.	.1 GENERAL TERMS	1
A	A. Terms	1
E	B. Abbreviations	
(C. Utility Master Plan References	
1.1.		
1.1.		
	A. Engineering Plan Review	
_	B. Rights-of-Way	
(C. Construction	
1.2	AUTHORIZATION	7
1.2.	2.1 CITY ENGINEER	7
1.3	PURPOSES	7
1.3	3.1 ENGINEERING STANDARDS	7
1.4	POLICIES RELATED TO DEVELOPMENT IMPROVEMENTS	8
1.4	1.1 CITY'S POLICIES	8
A	A. Street Improvement Policy	8
_	B. Storm Drainage Policy	
	C. Water Line Extension Policy	
	D. Sewer Line Extension Policy	
E	E. Site Development Policy	10
1.5	ORDER OF PRECEDENCE	10
1.6	DEFINITIONS AND ABBREVIATIONS	10
1.7	PENALTIES	11
1.8	APPEAL PROCEDURES	11
1.8.	3.1 GENERAL INFORMATION	11
	A. Provisions	

1.1 GENERAL INFORMATION

1.1.1 GENERAL TERMS

A. Terms

Unless otherwise specifically defined for use in a given Chapter, the following terms shall have the following meaning throughout the EDS&PM.

- 1. City shall mean the City of Goodyear
- 2. Council shall mean the Mayor and Council of the City of Goodyear
- 3. Development Standards shall mean:
 - a. the City of Goodyear Subdivision Regulations,
 - b. the City of Goodyear Zoning Ordinance,
 - c. the Engineering Standards,
 - d. the City of Goodyear Flood Prevention Regulations,
 - e. the City of Goodyear General Plan,
 - f. other applicable City of Goodyear Codes or Ordinances,
 - g. any applicable Zoning Conditions,
 - h. any applicable Development Agreements,
 - i. any applicable Development Master Plans, and
 - j. all other applicable federal, state, and local laws, ordinances, codes, rules, regulations, policies, and guidelines, including by way of example, but not limitation:
 - (1) regulations established by the Maricopa County Flood Control District relating to the construction or prevention of construction of streets in lands established as being subject to periodic inundation;
 - regulations established by the ADOT relating to provisions for safety of entrance upon and departure from abutting state highways;
 - (3) regulations established by the ADHS and MCDHS relating to the provision of domestic water supply and sanitary sewage disposal;
 - (4) regulations established by the ADWR, and the MCESD governing development in Maricopa County.
- 4. City Engineer shall mean the City Engineer or his/her designee.

- 5. Complete Set of Engineering Construction Plans shall mean all applicable improvement plans, reports, studies, addendums, and other documents necessary for the City to approve all improvement plans and to issue of improvement permits for a specific development as determined by the City Engineer.
- 6. Construction shall mean the erection, construction, installation, alteration, demolition, of any improvement and / or change to any improvement.
- 7. Development(s) shall mean a specific project for which a developer desires to construct improvements necessary to support a structure, utility, or other facility. A development may be part of a larger development or may function as a standalone project.
- 8. Developer shall mean the property owner, person, firm, company, party, and / or agency that is engaged in and is financially responsible for the construction of improvements in a development.
- 9. Engineering Standards shall mean the EDS&PM.
- 10. Improvement(s) shall mean any construction, temporary construction, or maintenance work performed on properties within the City limits that constructs or otherwise modifies Grading, Drainage, Water, Sewer, Reclaimed Water, Irrigation, Paving, Concrete, Landscaping, Storm Water Management Systems, Vehicular Circulation, Pedestrian Circulation, Floodplains, Signing, Striping, Street Lighting, Traffic Signals, Dry Utilities, and/or construction of temporary facilities. Plans developed to demonstrate how improvements shall be constructed are referred to as improvement plans or construction plans.
- 11. Individual means person(s), partnership, limited liability partnership, limited liability company, corporation or any other legal entity.
- 12. MAG Uniform Standard Details and Standard Specifications means the standards adopted by the City in Article 9-6 of the Goodyear City Code.
- 13. UBC means all of the technical codes adopted by the City in Article 9-1 of the Goodyear City Code.

B. Abbreviations

Unless otherwise specifically defined for use in a given Chapter, the following abbreviations shall have the following meaning throughout the EDS&PM.

AAC Arizona Administrative Code

AASHTO American Association of State Highway and Transportation Officials

ABC Aggregate Base Course

ABPA American Backflow Prevention Association

AC Asphalt Concrete or Alternating Current as the context dictates

ACP Asbestos Cement Pipe

ADA Americans with Disabilities Act

ADEQ Arizona Department of Environmental Quality

ADHS Arizona Department of Health Services
ADOT Arizona Department of Transportation
ADWR Arizona Department of Water Resources
ANSI American National Standards Institute

AOC Approval of Construction APS Arizona Public Service ARS Arizona Revised Statues

ARV Air Relief Valve

ASETT Arizona State Environmental Technology Training

ASTM ASTM International Standards Worldwide

ATC Approval to Construct AWG American Wire Gauge

AWWA American Water Works Association

AZPDES Arizona Pollutant Discharge Elimination System

BID Buckeye Irrigation District
BMP Best Management Practices

BWCDD Buckeye Water Conservation & Drainage District

BWOSP Bullard Wash Open Space Project
CADD Computer-Aided Design and Drafting

CAGRD Central Arizona Groundwater Replenishment District

CC&R Covenants, Conditions, and Restrictions

CCTV Closed-Circuit Television

CD Compact Disc

cfs cubic feet per second

CIP Capital Improvement Project or Clean in Place as the context dictates

CLOMR Conditional Letter of Map Revision
CLSM Controlled Low Strength Material

COG City of Goodyear

CPSC U.S. Consumer Products Safety Commission

CSP Construction Stormwater Permit

DC Directional Control
DIP Ductile Iron Pipe
DU Dwelling Unit
DVD Digital Video Disc

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adopted by Ordinance No. 17-1359 and all amendment thereto

EPA Environmental Protection Agency

FCDMC Flood Control District of Maricopa County

FDC Fire Department Connection

FEMA Federal Emergency Management Agency

FIRM Flood Insurance Rate Maps
GPA General Plan Amendments
gpad gallons per average day
gpcd Gallons per capita per day

gpd gallons per day

gpdu gallons per dwelling unit gpm gallons per minute

HDPE High-Density Polyethylene HOA Homeowners Association

HP Horse Power HTE Permit Number

IAPMO International Association of Plumbing and Mechanical Officials

ID Interior Diameter

IES Illuminating Engineering Society

IMSA International Municipal Signal Association

IPR Indirect Potable Reuse

ITE Institute of Transportation Engineers
ITS Information Transmission System
IWMP Integrated Water Master Plan

LED Light Emitting Diode LOMR Letter of Map Revision

MAG Maricopa Association of Governments
MCAQD Maricopa County Air Quality Department

MCDHS Maricopa County Department of Health Services
MCDOT Maricopa County Department of Transportation
MCESD Maricopa County Environmental Services Department

MS4 Municipal Separate Storm Sewer System

MUTCD Manual on Uniform Traffic Control Devices most recent edition

MWD Maricopa Water District

N/A Not Applicable

NACE National Association of Corrosion Engineers
NAVD88 North America Vertical Datum of 1988
NFPA National Fire Protection Association

NOI Notice of Intent NOT Notice of Termination

NPDES National Pollutant Discharge Elimination System

NSF NSF International

OSHA Occupational Safety and Health Administration

PAD Planned Area Development

PC Point of Curvature PI Point of Intersection

PIPE Piping Industry Progress and Education

psi pressure per square inch
POA Property Owners Association
POTW Publicly Owned Treatment Work

PRV Pressure Relief Valve PT Point of Tangent

PTOE Professional Traffic Operations Engineer

PUE Public Utility Easement
PVC Poly Vinyl Chloride

RAC Rubberized Asphalt Concrete

RID Roosevelt Irrigation District ROC Registrar of Contractors

RGRCP Rubber Gasket Reinforced Concrete Pipe

RPP Reduced Pressure Principle

SCADA Supervisory Control and Data Acquisition

SMFO Single Mode Fiber Optic
SSPC Society for Protective Coatings
SVT Sight Visibility Triangles
SWP Steam Working Pressure

SWPPP Stormwater Pollution Prevention Plan

THW Thermoplastic Heat & Water Resistant Insulated Wire

TIA Traffic Impact Analysis
UL Underwriters Laboratories
UPC Uniform Plumbing Code
UPS Uninterrupted Power Supply
USC University of Southern California

USF Underground Stormwater Storage Facilities

VAC Volts Alternating Currents

VCP Vitrified Clay Pipe VFD Variable Frequency Drive XHHW Cross-Linked High Heat Water

ZONE AO FEMA Designated Flood Hazard Zone Requiring Flood Insurance

C. Utility Master Plan References

References in the EDS&PM to the City's water master plan or City's master water plan relating to water infrastructure requirements shall mean: the 2007 Integrated Water Master Plan prepared by Black and Veatch adopted by the Goodyear City Council on June 23, 2008 Volumes 1 and 2

References in the EDS&PM to the City's wastewater master plan relating to any wastewater infrastructure requirements shall mean: the 2007 Integrated Water Master Plan prepared by Black and Veatch adopted by the Goodyear City Council on June 23, 2008 Volumes 1 and 3

References in the EDS&PM to the City's reclaimed water master plan relating to any reclaimed water infrastructure requirements shall mean: the 2007 Integrated Water Master Plan prepared by Black and Veatch adopted by the Goodyear City Council on June 23, 2008 Volumes 1 and 4

1.1.2 IMPROVEMENTS

Improvements constructed within the City of Goodyear shall comply with all requirements of the Engineering Standards and Development Standards. Preliminary and final design plans shall be prepared in accordance with these standards unless specific variances have been approved by the City.

1.1.3 CONSTRUCTION

All construction shall be performed in accordance with the construction plans approved by the City.

A. Engineering Plan Review

Once the plans and reports for the development have been prepared, they shall be submitted to the City's Engineering Department. From there, they will be distributed to the appropriate City departments for their review and comment. Comments will be compiled and consolidated by the Engineering Department and returned to the Applicant. All such comments shall be incorporated into the plans and reports by the Applicant for resubmittal.

B. Rights-of-Way

The acquisition and dedication of new street rights-of-way and/or utility easements shall be coordinated through the City. Deeds containing legal descriptions and scale drawing for these rights-of-way, easements and/or parcels prepared by an Arizona registered professional engineer or Arizona registered land surveyor shall be submitted to the City for approval and recording.

C. Construction

Construction permits are required for all construction within the City. Any contractor found working on a project without an official set of approved plans and permit shall discontinue work excluding any work required to bring the site to a safe condition. The site shall be immediately restored to the satisfaction of the City which may include temporary protection devices placed which will be the responsibility of the contractor performing the unauthorized work. Prior to the issuance of a permit the developer shall provide the appropriate financial assurance for the construction of the improvements.

D. General Notes for Improvements and Landscaped Areas to be Maintained by City

The references in the General Notes for Landscaped Areas and Improvements that are to be maintained by the City applies only to areas that the City owns or is required by ordinance, law, or regulation, to maintain.

1.2 AUTHORIZATION

1.2.1 CITY ENGINEER

The City Engineer is hereby authorized and directed to enforce the requirements of the Engineering Standards, the requirement as set forth in Chapter 15 of the Goodyear City Code as such regulations relate to Improvements as defined therein, and any and all other requirements for which the City Engineer has been delegated responsibility. Pursuant to this grant of authority, the City Engineer shall have the authority to render interpretations of the Engineering Standards and all other regulations, including regulations in Chapter 15 related to Improvements, for which the City Engineer has been delegated responsibility.

The City Engineer shall receive applications, review construction documents and issue permits for the construction of all improvements identified in the Engineering Standards.

The City Engineer shall have the authority to take all actions necessary to ensure compliance with the Engineering Standards, which includes the right to enter premises at reasonable times to inspect and/or perform other actions provided for in the Engineering Standards.

1.3 PURPOSES

1.3.1 ENGINEERING STANDARDS

The purpose of this Engineering Standards is to provide developers and their designers the planning and designing requirements of public and private infrastructure within the City and to provide an enhanced quality of life for Goodyear citizens and visitors. Design concepts and specific technical data are outlined, but are not intended to supersede sound engineering judgment. All plans are to be prepared with these concepts in mind and will be reviewed accordingly.

These standards are divided into individual sections which cover specific elements of the design and development review process. It begins with general information followed by specific technical details. Updates will be published and made available periodically. Pending updates, new standards, forms, checklists, approved material lists, and exhibits are available on the City's web site (www.goodyearaz.gov).

The Engineering Standards are intended to be used in conjunction with the City Subdivision Regulations, Zoning Ordinance, Floodplain Ordinance, Grading Ordinance and other applicable City Ordinances and Standards of other agencies that may have jurisdiction.

1.4 POLICIES RELATED TO DEVELOPMENT IMPROVEMENTS

1.4.1 CITY'S POLICIES

The following sections outline the City's policies related to various improvements associated with the development process. They are by nature general in scope. Reference should be made to the appropriate sections within the balance of these standards for specific details.

A. Street Improvement Policy

- 1. All developments within the City shall provide an interior street system adequate to insure that all parcels and/or facilities within the development shall have reasonable access to the balance of the public street system. Further, they shall provide legal and physical access into the development for public service and/or emergency operations.
- All access improvements, both public and private, shall be in compliance with the Engineering Standards and the street standards (contained in Chapter 15 of the City Code - Subdivision Regulations). All streets shall be of such width and structural strength as to provide safe and unrestricted access.
- 3. In a single-family residential development, it is the intent of the City that the local residential street system be designed in conformance with current street classifications. There shall be minimal direct access from the local residential street system to the collector streets and very limited to no access to the arterial streets.
- 4. When the development occurs adjacent to a boundary street, it is the City's policy that it shall be the responsibility of the developer to dedicate the right-of-way and construct improvements along their frontage to the ultimate half width of the street. Improvements shall be constructed to the ultimate grade and alignment for the said boundary street. This may include removal and replacement of the existing street surface to the centerline and beyond if that structure or street geometrics are inadequate to meet the current design standards and the adjustment of any utility found to be located at an unacceptable depth in relation to the new street grade profile. Half street only improvements will not be allowed to be constructed for local streets, and half street only improvements on other street classifications must be approved by the Engineering Department. Street lighting, landscaping, burial of overhead utilities, and improvements to irrigation facilities will be required, at the sole or substantial expense of the developer.

B. Storm Drainage Policy

- It is the City's policy that all developments within the City shall provide sufficient retention so as to minimize the adverse impact of that development on adjacent, upstream, or downstream properties.
 To that end, all developments shall provide sufficient on-site retention to contain, at the least, the runoff generated by a 100-year 6-hour storm falling on the property. A stormwater retention waiver may be submitted if the conditions in Section 3.3.5.I apply.
 - 2. Further, it is the City's policy that all developments shall provide adequate drainage facilities so as to convey runoff, generated both on and off the project, around or through the project in such a manner as to insure that the structures will be free from flooding and that there is reasonable access for emergency and public service vehicles. The developer shall install storm drain pipes, channels, retention basins and/or other physical improvements necessary to achieve this result.
 - 3. It is the City's policy that all developments shall comply with the NPDES Stormwater Requirements for construction sites, ADEQ, AZPDES Stormwater Requirements for Construction, City of Goodyear Storm Water Pollution Elimination Ordinance Article 16-7, The City of Goodyear Storm Water Management Plan, and related documents. See section 3 of this manual for information related to storm water pollution prevention plans.
 - 4. The Drainage Design Manual for Maricopa County; Hydrology, shall be utilized to determine peak discharge volumes for design purposes and Hydraulics is to be utilized as a basis for design guidance and criteria. The Drainage Design Manual for Maricopa County; Erosion Control, or subsequent guidance, shall be used to select appropriate Dust and Erosion Control BMP for use during construction activities except for provisions required in this manual or other City adopted documents.

C. Water Line Extension Policy

It is the City's policy that all developments within the City shall have an adequate and secure source of potable water. To that end the City has developed a comprehensive program for supplying municipal water. Therefore, unless specifically excepted in writing by the City Engineer or those within another service area, all developments within the City shall be serviced by the City's potable water system. Further, the developer shall extend said system to and through the development as necessary to insure adequate supply to the development. If deemed necessary and appropriate, the developer shall extend the water distribution system to the extremities of the project so as to insure that more distant potential users shall have reasonable access to the City's water system.

D. Sewer Line Extension Policy

It is the City's policy that, unless specifically excepted in writing by the City Engineer or those within another service area, all developments within the City shall provide for the discharge of domestic and other liquid waste into the municipal sewerage system. All developers shall be required to extend to and through their project a sewage collection system of a size sufficient to dispose of these wastes to the public system. When deemed appropriate and necessary, the developer shall extend the main trunk and/or collector lines to the upstream extremities of the project so as to provide reasonable access for potential upstream users to the City system.

E. Site Development Policy

It is the City's policy that all developments within the City shall be designed and constructed in such manner as to provide a safe and pleasant environment for the current and future citizens of Goodyear. To that end, the appropriate standards have been established for site development to include: Public and/or private access for general and special uses; public water and sewerage systems; on-site and off-site drainage; landscaping; storm retention; street lighting and public utilities as may be required. The site and structures are to be constructed in accordance with the Subdivision Regulations and/or Zoning Ordinance, the current adopted UBC, MAG Uniform Standard Details and Standard Specifications, and the Engineering Standards, as appropriate. Other standards may be approved on a case by case basis.

1.5 ORDER OF PRECEDENCE

It is not intended by these standards to repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws or ordinances except those specifically repealed with private agreement, or with restrictive covenants running with the land to which the City is a party. Where the Engineering Standards impose a greater restriction on land, buildings, or structures than is imposed or required by such existing provisions of law, ordinance, contract, or deed, the provisions of the Engineering Standards shall prevail.

1.6 DEFINITIONS AND ABBREVIATIONS

Some of the words, abbreviations, or phrases used in these standards that have not been defined herein are defined in the City of Goodyear Subdivision Regulations, the City of Goodyear Flood Prevention Regulations, the City of Goodyear Zoning Ordinance, the City of Goodyear Administrative Policy Manual, and/or the MAG Uniform Standard Specifications and Details for Public Works Construction and in such cases those definitions apply. All other words or phrases shall be interpreted per the generally accepted meaning in the civil engineering industry.

1.7 PENALTIES

Any person or Enterprise found guilty of violating any provisions of the Engineering Standards shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not to exceed \$2,500 for an individual and not more than \$20,000 for an enterprise or by imprisonment for a period of not to exceed six months, or by both such fine and imprisonment. Each day that a violation, continues shall be a separate offense punishable as hereinabove described. The term *ENTERPRISE* as used in this subsection shall mean any corporation, partnership, association, labor union or other entity or any group of persons associated in part although not a legal entity.

1.8 APPEAL PROCEDURES

1.8.1 GENERAL INFORMATION

Persons aggrieved by any order, decision, or determinations relative to the application and interpretation of the Engineering Standards shall be entitled to appeal such order, decision or determination by filing a written notice of such appeal with the City Engineer within ten business days of the date the order, decision or determination was issued. The following procedures shall govern appeals filed pursuant to this provision:

A. Provisions

- 1. The appeal shall be heard by a Hearing Officer retained by the City whose authority shall be limited to determining whether the order, decision, or determination being appealed complies with the Engineering Standards. The Hearing Officer shall have no authority to waive the requirements of the Engineering Standards.
- 2. The party filing the appeal bears the burden of proof.
 - a. The party challenging interpretation(s) of the Engineering Standards and/or Subdivision Regulations by the City Engineer bears the burden of proving that the interpretation is clearly contrary to legislative intent or that it is without rational basis.
 - b. The party challenging factual determination(s) of the City Engineer bears the burden of proving that no reasonable person could have reached the City Engineer's determination.
- 3. Hearings on an appeal shall be scheduled as soon as practicable following the receipt of the Notice of Appeal.
- 4. Parties to an appeal shall have the right to be represented by counsel or to proceed without counsel, to submit evidence and to cross-examine witnesses.
- 5. Each party shall serve on the opposing party and the Hearing Officer, a List of Exhibits which includes a description of each exhibit the

- party intends to introduce at the hearing during the presentation of the party's case and a copy of each exhibit; a List of Witnesses each party intends to call at the hearing during the presentation of the party's case. Unless modified by the Hearing Officer, the parties' respective List of Witnesses and List of Exhibits shall be served no later than five days before the date of the hearing.
- 6. Hearings may be conducted in an informal manner and without adherence to the rules of evidence required in judicial proceedings. Subject to the provisions herein, the Hearing Officer shall control and dictate the hearing proceedings and his/her responsibilities shall include continuing a hearing as needed, ensuring that testimony, statements, and questions pertain to the appeal; ruling on objections to evidence; setting limits for opening and concluding remarks; calling breaks; and generally coordinating the hearing.
- 7. All hearings shall be recorded.
- 8. All parties to the appeal shall have the opportunity to respond, and present evidence and argument on all relevant issues. All relevant evidence is admissible, but the Hearing Officer may at his/her discretion, exclude certain witnesses or documents even if timely disclosed if he/she finds such evidence to be irrelevant, cumulative, redundant, or overly prejudicial.
- 9. The Hearing Officer may take notice of judicially cognizable facts and of generally recognized technical and/or scientific facts within the City's specialized knowledge. The City's experience, technical competence and specialized knowledge may be used in the evaluation of the evidence.
- 10. Prior to opening statements, the Hearing Officer will specify a time limit to be adhered to by both parties. Opening statements will be presented first by the City's representative and then by the appellant's representative.
- 11. The Hearing Officer shall administer oaths and affirmations to the witnesses prior to allowing their testimony.
- 12. Order of Presentation. The City's representative shall present the City's case first. The appellant shall be entitled to cross-examine any witnesses called by the City and the City shall be entitled to examine on re-direct any of the City's witnesses cross-examined by appellant. After the City has completed the presentation of its case, appellant's representative shall present appellant's case. The City shall be entitled to cross-examine any witnesses called by appellant and appellant shall be entitled to examine on re-direct any witnesses cross-examined by the City. After the appellant has completed its presentation of its case, the City shall be entitled to present rebuttal.

- 13. The Hearing Officer shall be entitled to ask questions of any witness at any time the witness is being questioned and is entitled to recall witnesses as needed.
- 14. Prior to closing remarks, the Hearing Officer will specify a time limit to be adhered to by both parties. Closing remarks will be presented first by the appellant's representative and then by the City's representative.
- 15. The Hearing Officer shall issue a written decision within twenty days after the hearing is concluded. The written decision shall contain a concise explanation of the reasons supporting the decision and shall include findings of fact and conclusions of law underlying the decision. The written decision shall be served on the City Engineer. The City Engineer shall, within ten business days of the date the decision is served on the City Engineer, accept, reject or modify the Hearing Officer's decision. If the City Engineer rejects or modifies the Hearing Officer's decision, the City Engineer shall provide all parties to the appeal and the City Manager a copy of the Hearing Officer's decision with the rejection or modification and a written justification setting forth the reasons for the rejection or modification. The City Manager will review the Hearing Officer's decision, the City Engineer's rejection or modification and the justifications for the rejection or modification and within ten business days of the date such information is received by the City Manager, the City Manager shall either accept the Hearing Officer's decision or accept the City Engineer's rejection or modification. The City Manager shall notify the parties to the appeal in writing of his/her decision and the City Manager's decision shall be final.
- 16. Neither the manner of conducting the hearing nor the failure to adhere to the rules of evidence required in judicial proceedings is grounds for reversing a decision rendered by a Hearing Officer if the evidence supporting the decision is substantial, reliable and probative.