EDC Update Project

City Council Study Session – November 29, 2022

CITY OF NORMAN, OK

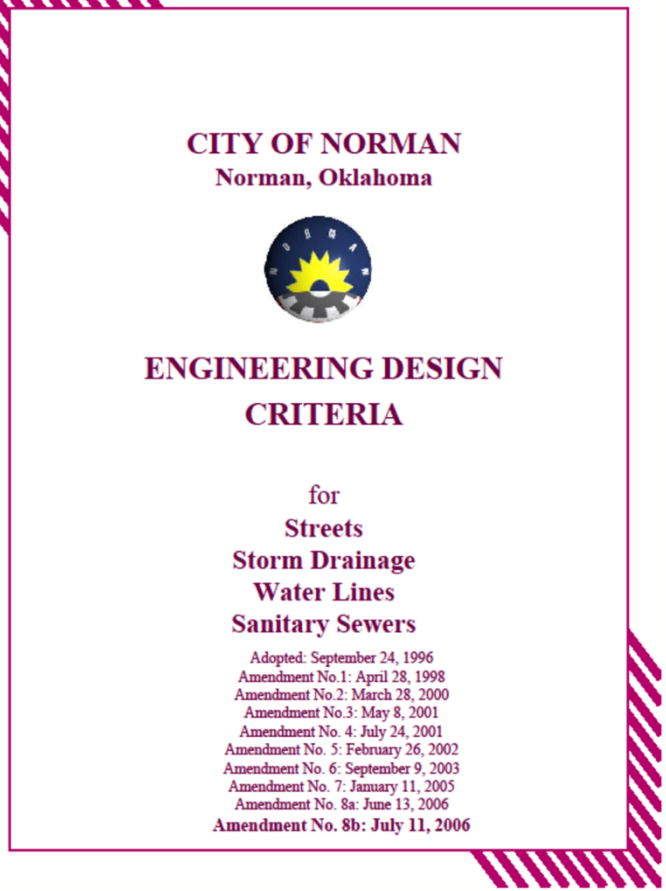
AGENDA

- Background
- Project Approach
- EDC Highlights
- Discussion
- Next Steps

Background

BACKGROUND

Discussing two documents


CITY OF NORMAN
Norman, Oklahoma

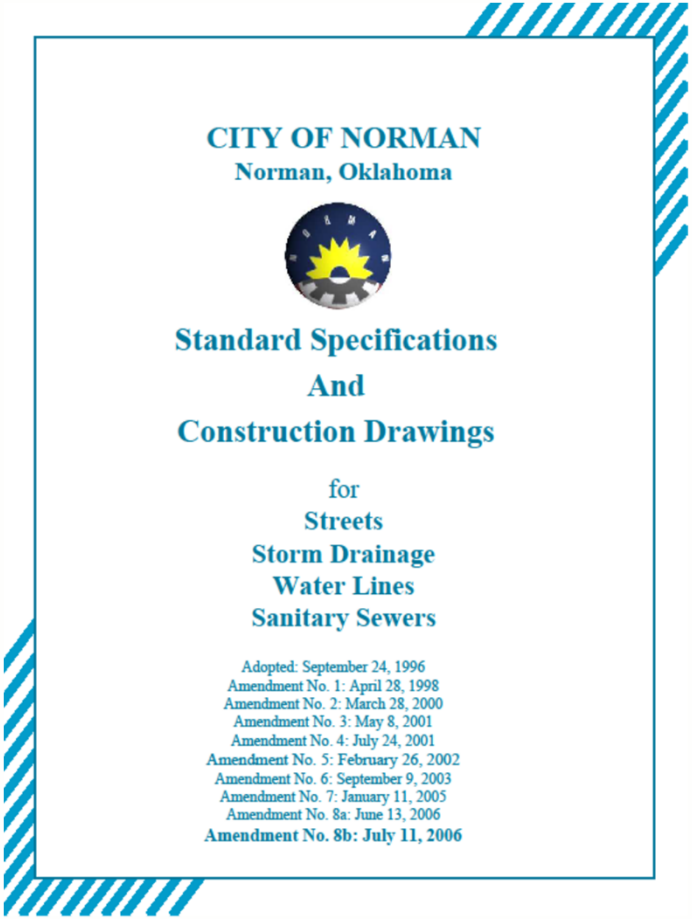
ENGINEERING DESIGN CRITERIA

for
Streets
Storm Drainage
Water Lines
Sanitary Sewers

Adopted: September 24, 1996
Amendment No.1: April 28, 1998
Amendment No.2: March 28, 2000
Amendment No.3: May 8, 2001
Amendment No. 4: July 24, 2001
Amendment No. 5: February 26, 2002
Amendment No. 6: September 9, 2003
Amendment No. 7: January 11, 2005
Amendment No. 8a: June 13, 2006
Amendment No. 8b: July 11, 2006

September 1996 –
Originally adopted by Council

July 2006 –
Last of 9 amendments adopted by Council


CITY OF NORMAN
Norman, Oklahoma

Standard Specifications
And
Construction Drawings

for
Streets
Storm Drainage
Water Lines
Sanitary Sewers

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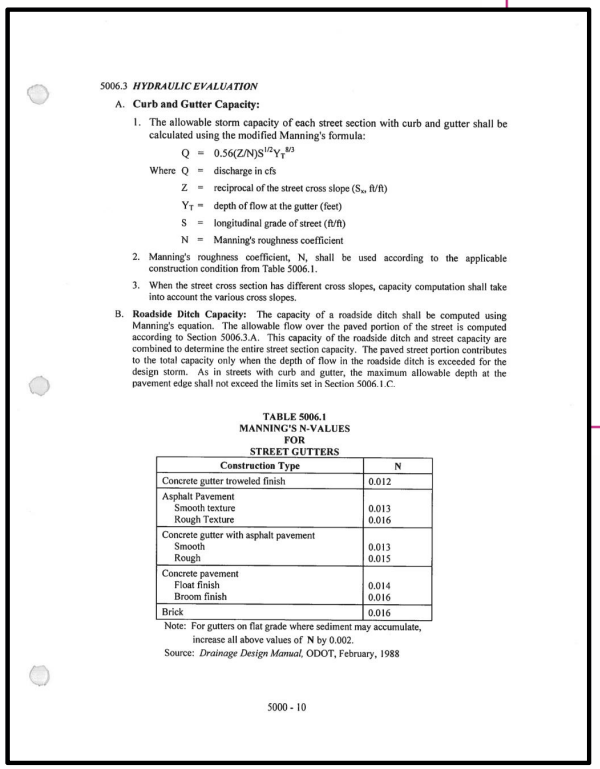
BACKGROUND

What is an EDC?

Provides guidance to developers and design professionals regarding the design of all public infrastructure including:

- roadways,
- storm sewer systems,
- drainage,
- erosion control,
- waterlines and
- sanitary sewer lines.



5006.3 *HYDRAULIC EVALUATION*

A. **Curb and Gutter Capacity:**

1. The allowable storm capacity of each street section with curb and gutter shall be calculated using the modified Manning's formula:

$$Q = 0.56(Z/N)S^{1/2}Y_T^{8/3}$$

Where Q = discharge in cfs
Z = reciprocal of the street cross slope (S_w, ft/ft)
Y_T = depth of flow at the gutter (feet)
S = longitudinal grade of street (ft/ft)
N = Manning's roughness coefficient

2. Manning's roughness coefficient, N, shall be used according to the applicable construction condition from Table 5006.1.

3. When the street cross section has different cross slopes, capacity computation shall take into account the various cross slopes.

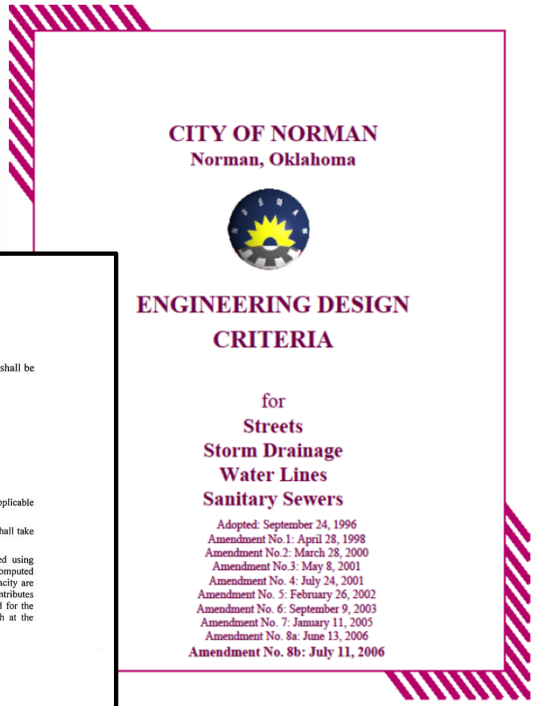
B. **Roadside Ditch Capacity:** The capacity of a roadside ditch shall be computed using Manning's equation. The allowable flow over the paved portion of the street is computed according to Section 5006.3.A. This capacity of the roadside ditch and street capacity are combined to determine the entire street section capacity. The paved street portion contributes to the total capacity only when the depth of flow in the roadside ditch is exceeded for the design storm. As in streets with curb and gutter, the maximum allowable depth at the pavement edge shall not exceed the limits set in Section 5006.1.C.

TABLE 5006.1
MANNING'S N-VALUES
FOR
STREET GUTTERS

Construction Type	N
Concrete gutter troweled finish	0.012
Asphalt Pavement	
Smooth texture	0.013
Rough Texture	0.016
Concrete gutter with asphalt pavement	
Smooth	0.013
Rough	0.015
Concrete pavement	
Float finish	0.014
Broom finish	0.016
Brick	0.016

Note: For gutters on flat grade where sediment may accumulate, increase all above values of **N** by 0.002.
Source: *Drainage Design Manual*, ODOT, February, 1988

5000 - 10

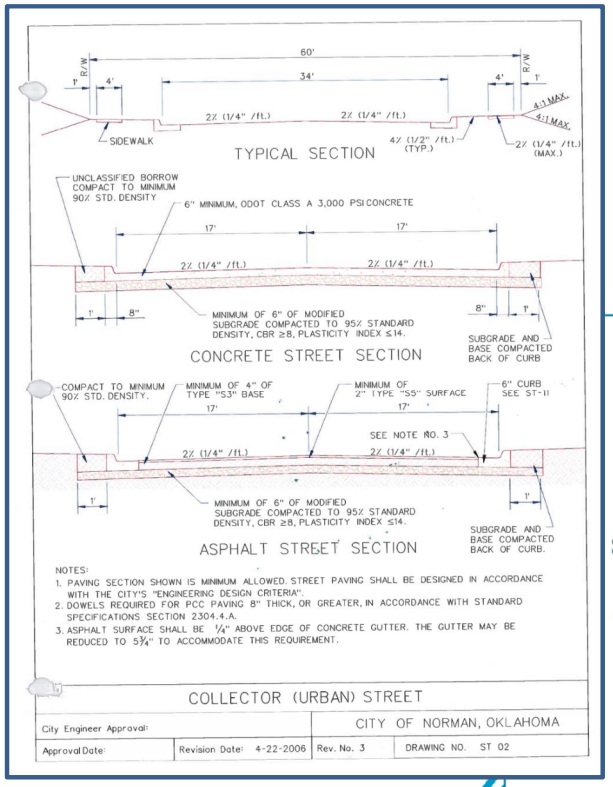


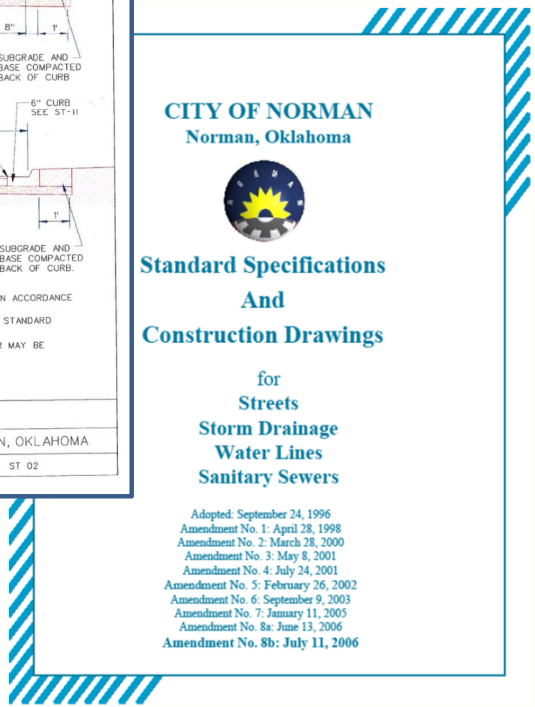
BACKGROUND

What is a Standard Specifications and Construction Drawings?

The Standard Specifications provide the guidance for contractual agreements and the construction of all public infrastructure.

Construction Drawings provide standard details for the construction and repair of public infrastructure.

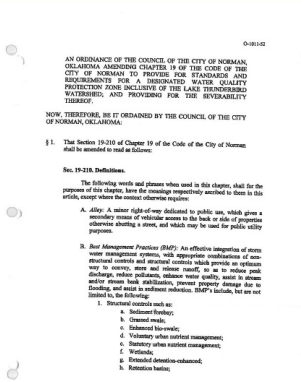




BACKGROUND

Since the 2006 amendment the following items have changed or been added

- Water Quality Protection Zone (WQPZ) with Low Impact Development Manual
- Public Rights of Way Accessibility Guidelines (PROWAG)
- Comprehensive Transportation Plan (CTP)
- Complete Streets Manual
- Updates to stormwater modeling technology
- New construction materials
- Revised construction methods
- Updated State permits



AN ORDINANCE OF THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA AMENDING CHAPTER 19 OF THE CODE OF THE CITY OF NORMAN TO PROVIDE FOR STANDARDS AND REQUIREMENTS FOR A DESIGNATED WATER QUALITY PROTECTION ZONE INCLUSIVE OF THE LAKE THUNDERBIRD WATERSHED; AND PROVIDING FOR THE SEVERABILITY THEREOF.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA:

§ 1. That Section 19-210 of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

Sec. 19-210. Definitions.

The following words and phrases when used in this chapter, shall for the purposes of this chapter, have the meanings respectively ascribed to them in this article, except where the context otherwise requires:

A. *Alley:* A minor right-of-way dedicated to public use, which gives a secondary means of vehicular access to the back or side of properties otherwise abutting a street, and which may be used for public utility purposes.

B. *Best Management Practices (BMP):* An effective integration of storm water management systems, with appropriate combinations of non-structural controls and structural controls which provide an optimum way to convey, store and release runoff, so as to reduce peak discharge, reduce pollutants, enhance water quality, assist in ... and/or stream bank stabilization, prevent property damage due to flooding, and assist in sediment reduction. BMP's include, but are not limited to, the following:

1. Structural controls such as:
   a. Sediment forebay;
   b. Grassed swale;
   c. Enhanced bio-swale;
   d. Voluntary urban nutrient management;
   e. Statutory urban nutrient management;
   f. Wetlands;
   g. Extended detention-enhanced;
   h. Retention basin;

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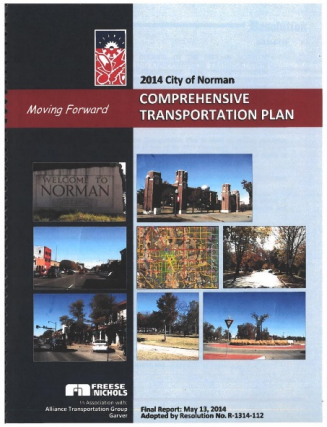


BACKGROUND

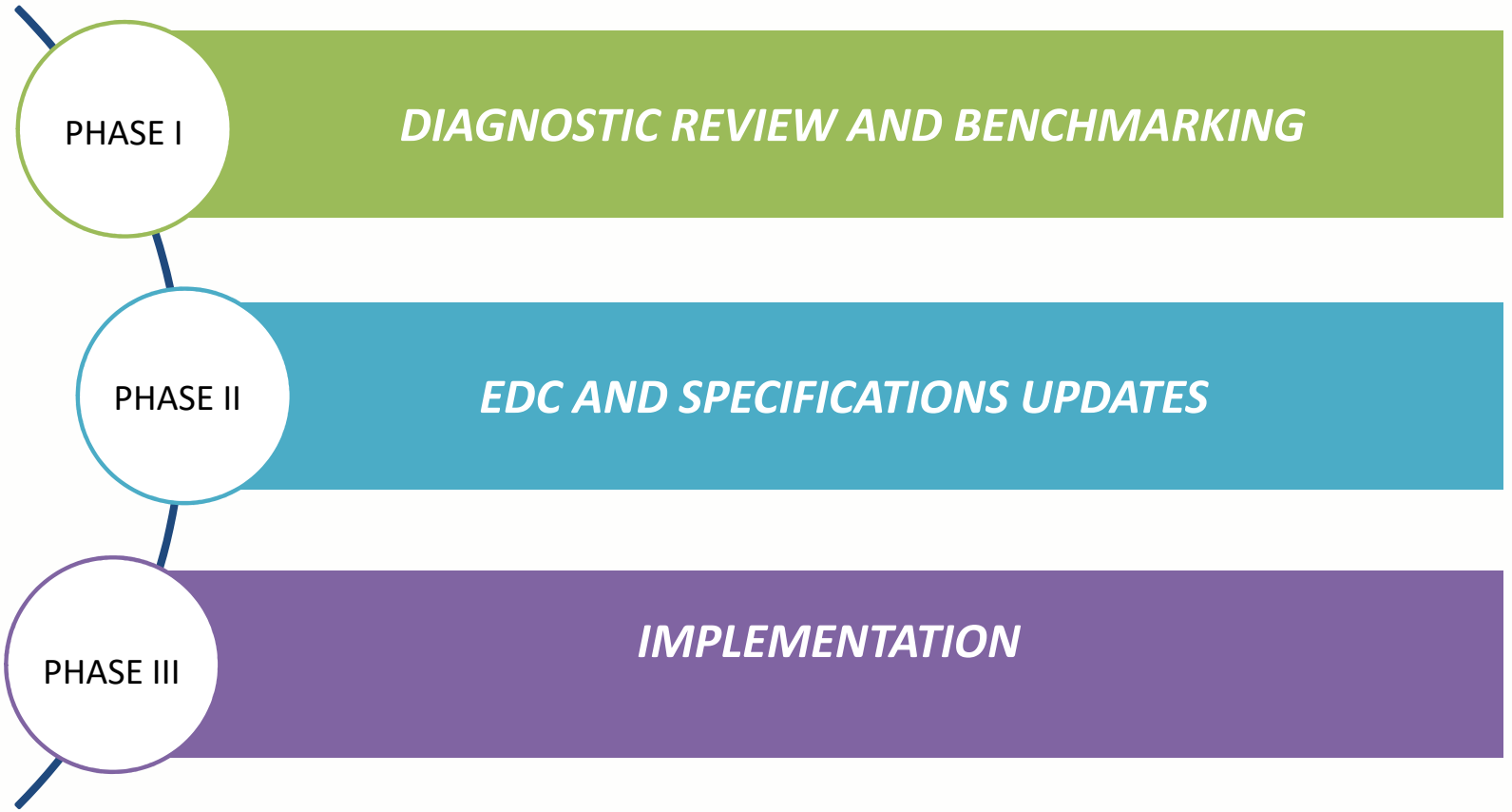
- Comprehensive Transportation Plan (2014) recommendations:
  - Update Engineering Design Criteria (EDC) and Construction Standard Specifications and Construction Drawings
- City Council goal (2017) – incentivize “green building codes”
- Council Community Planning and Transportation Committee (CPTC) (2017-2019)
  - Exploring incentive programs
  - Green building practices
  - Green infrastructure / Low impact development (GI/LID)
  - Parking for new developments
- Private sector expressed interest
  - Incentives to use Sustainable Design Techniques (LID)
- July 1, 2019 – Funding for EDC Update included in the FYE 2020 Capital Improvements Program (CIP) budget
- February 20, 2020 - Contract with Freese and Nichols approved by Council

PROJECT OBJECTIVES

- Comprehensive update of the 25-year-old EDC, Standard Specifications and Construction Drawings
- Consolidation of multiple, disconnected manuals into one easily-accessible, modern manual
- Addition of Norman Green Stormwater Infrastructure (GSI) manual to EDC
- Incorporation of Complete Streets Policy in EDC
- Update Traffic Impact Analysis (TIA) guidelines
- Incorporation of PROWAG in EDC
- Incorporation of WQPZ policy and practices in EDC
- Correlation of EDC with CTP

Project Approach

PROJECT APPROACH



STAFF AND COMMUNITY ENGAGEMENT

Considered vital to success of project

Staff Advisory Committee
- 10 staff members representing
  - Parks and Recreation
  - Planning
  - Public Works
  - Utilities

Stakeholder Committee
- 25 members representing
  - Developers,
  - Home builders
  - Consultants
  - Community members
  - Contractors
- Expanded to 33 members in Phase II

PROJECT APPROACH

PHASE I

DIAGNOSTIC REVIEW AND BENCHMARKING

- **Document Review**
- **Stakeholder Interviews**
- **Community Benchmarking**
- **Diagnostic Report**

PHASE I MILESTONES

PHASE I ENGAGEMENT

June 22, 2020 Meeting with Stakeholders

- Introduce the project
- Overview of the draft Diagnostic Report
- Questions and answers
- Opportunity for open discussion.

Draft Diagnostic Report – Stakeholder Review

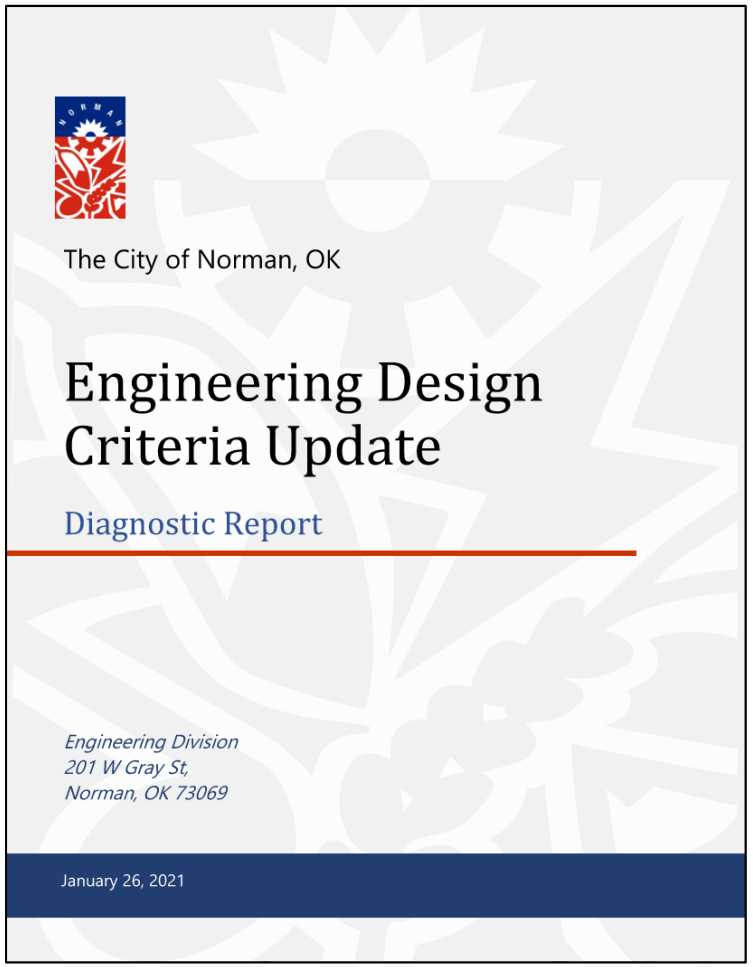
- December 9, 2020 - December 21, 2020

Diagnostic Report

66 page document that:

- Identified issues to be updated in the EDC, Standard Specifications and Construction Drawings
- Recommended solutions for items identified
- Benchmarking related to Sustainable Stormwater Development programs

Every section was reviewed



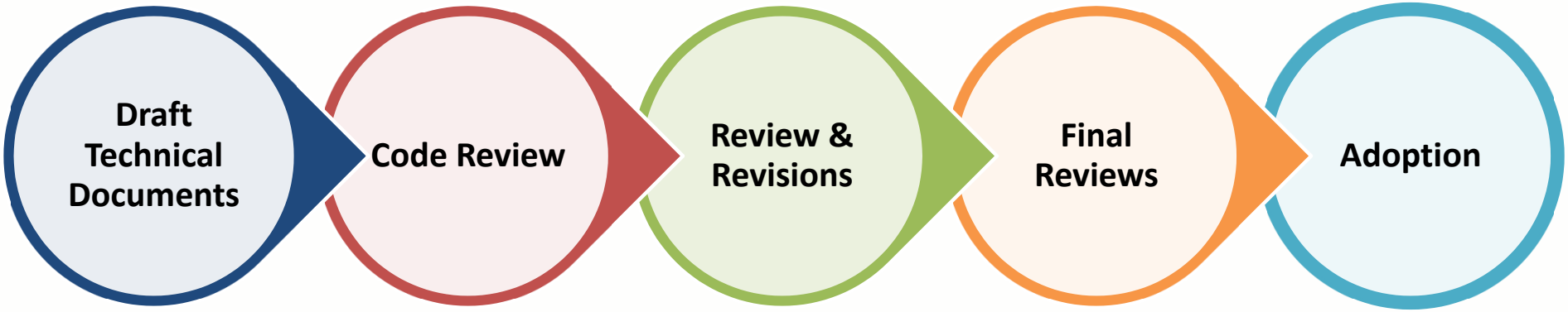
PROJECT APPROACH

PHASE II

EDC, Specifications, Construction Details and Code Recommendations

- Technical Documents
- Advisory Committee Review
- Stakeholder Engagement
- Code Recommendations

PHASE II MILESTONES



May 2021-
June 2022

May 2021-
June 2022

June 2022-
September 2022

September 2022-
December 2022

PHASE II ENGAGEMENT

Phase II Kick-off Meeting (in-person)

- May 6, 2021
- 19 stakeholders attended
- Stakeholder list expanded to 33
- Subcommittees focused on specific topics

Subcommittee Meetings

- Sustainable Development – 7 meetings
- Drainage (Stormwater) – 3 meetings
- Streets – 4 meetings
- Utilities – 2 meetings

Additional consultation with City staff representing each topic throughout the EDC development process

PHASE II ENGAGEMENT

Committee meetings and EDC Drafting
- May 2021 through June 2022

Staff review
- June – September 2022

Distribution to Stakeholders – September 29, 2022

Stakeholder Meeting – October 6, 2022

Project Website (open comment period)
- October 6 - present

HIGHLIGHTS


General
Utilities
Streets
Stormwater
Sustainable Development
Development Regulations

HIGHLIGHTS

General

Section 1000
GENERAL

- General formatting and punctuation updates
- Consolidated Definitions section (EDC)
- Updated references to adopted codes, plans, and studies

HIGHLIGHTS

Utilities

Section 2000
WATER LINES

- Updated to reflect current practices and materials
- Revised installation of lines in subdivisions

HIGHLIGHTS

Utilities

Section 3000
SANITARY SEWER

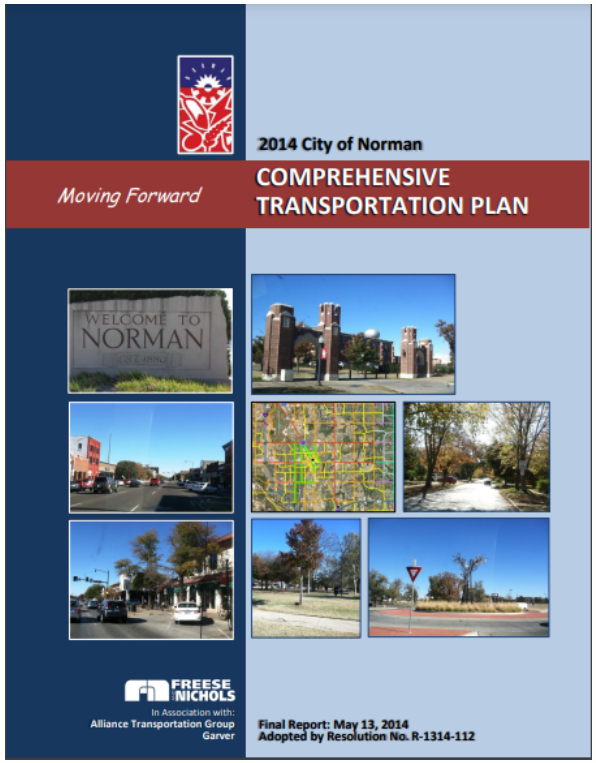
- Updated to reflect current practices and materials
- Revised location of lines in subdivisions

HIGHLIGHTS

Streets

Section 4000

STREETS



- Align with the Comprehensive Transportation Plan
- Includes Traffic Study Guidelines
- Incorporates Complete Streets
- Identified PROWAG as best practices

HIGHLIGHTS

Stormwater

Section 5000

STORMWATER QUALITY

- Updated modelling programs
- Revised appropriate use of drainage equations
- Included new pipe materials

HIGHLIGHTS

Stormwater

Section 6000

STORMWATER QUALITY

- Updated requirements for latest State Permits

HIGHLIGHTS

Sustainable Development

Section 7000

SUSTAINABLE STORMWATER DEVELOPMENT

- New Section to the EDC
- Replaces the outdated Wichita Stormwater Manual for GSI design
- Voluntary Green Stormwater Infrastructure (GSI) design manual
- Considers modernized designs
- Future consideration to incentivize GSI
- Includes construction and maintenance requirements

HIGHLIGHTS

Sustainable Development

Section 7000

SUSTAINABLE STORMWATER DEVELOPMENT

Manufactured System

Bioretention

Rain Garden

Porous Pavement

HIGHLIGHTS

Development Regulations

Technical Memo

CODE ALIGNMENT

INCENTIVES

CREDIT PROGRAM

Guidance for aligning updated EDC with Development Regulations

- Remove Barriers
- Incentivize Sustainable Stormwater Development

Credit-Based System – tools and examples

Next Steps

PUBLIC REVIEW

Council Study Session – November 29, 2022

Stakeholder input - ongoing

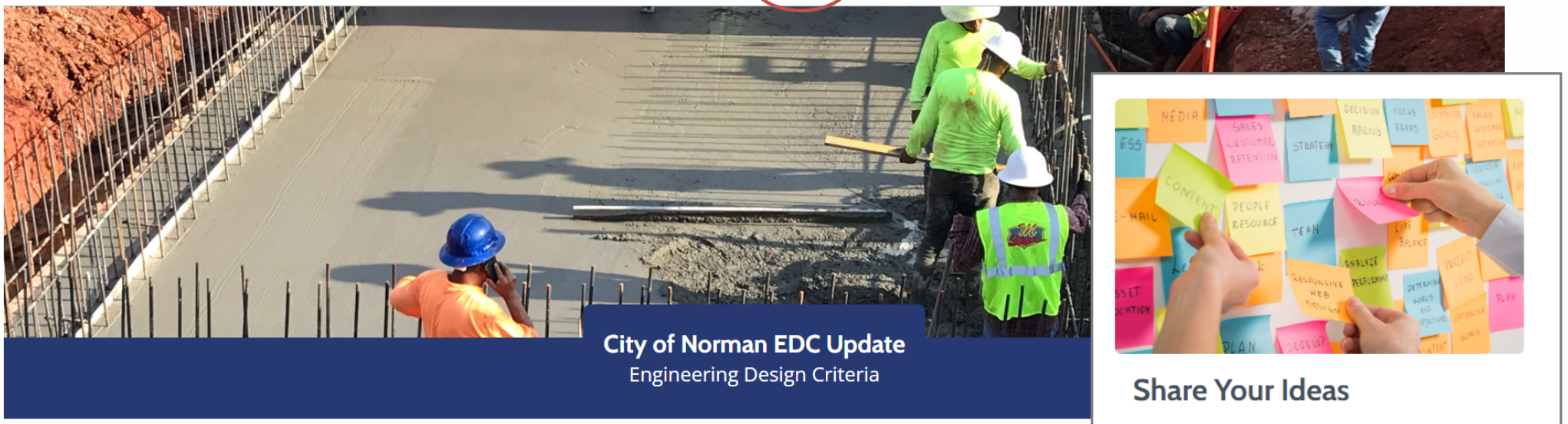
Community Open House

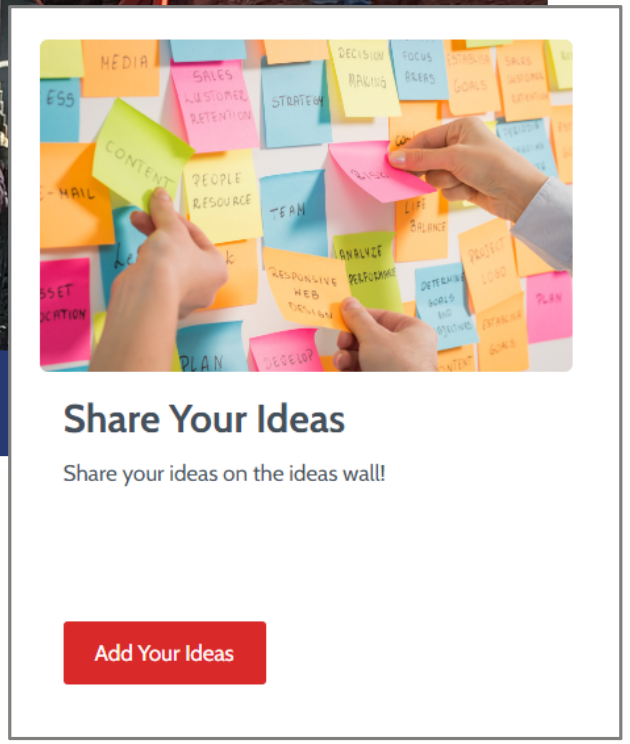
- November 30 – December 15 (Virtual)
- December 7, 2022 (Hybrid / virtual with call-in option)
- December 7, 2022 (In-person)

City Council review and adoption

- January 10, 2023

PROJECT WEBSITE





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PROJECT WEBSITE

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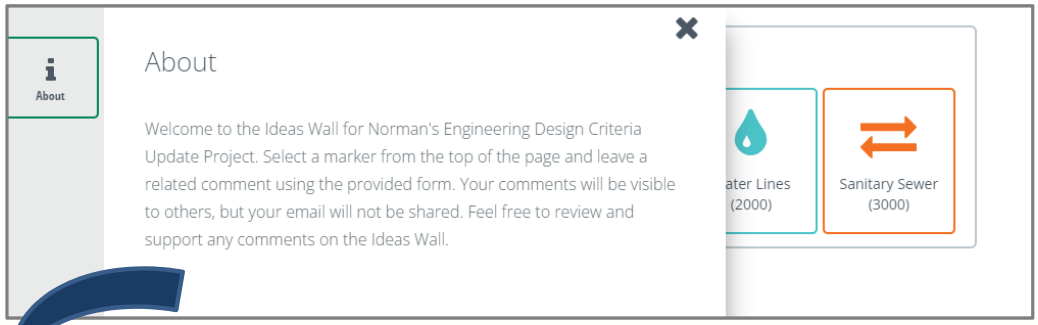

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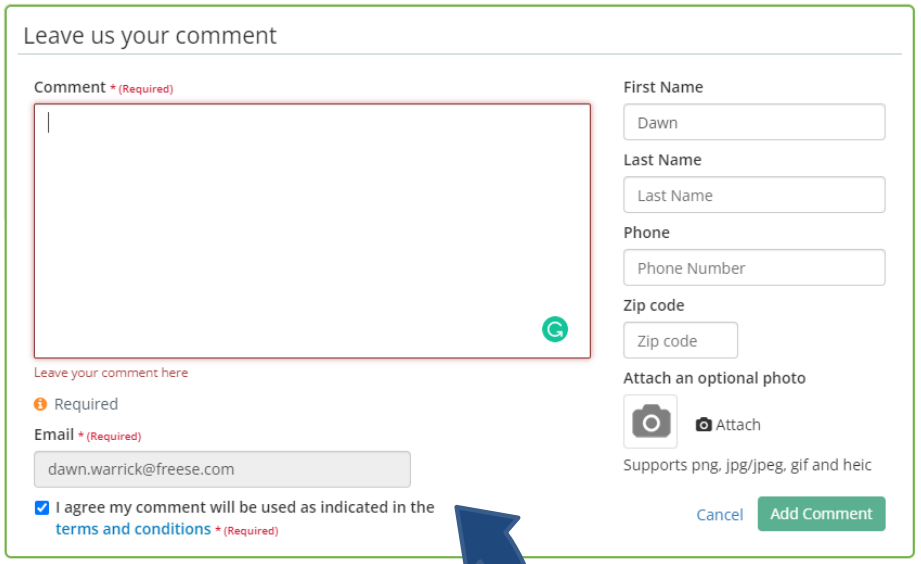

PROJECT APPROACH

PHASE III

IMPLEMENTATION

- **Training resources**
- **Workshops**
- **Checklists**
- **Design Guides**
- **Brochures or other publications**

Follows adoption of the updated EDC
Support roll out of new technical resources and programs
Educational materials for review, inspection, design and construction activities
Materials to inform and educate the public
Final scope must be determined and authorized prior to initiating any Phase III work

Discussion & Questions