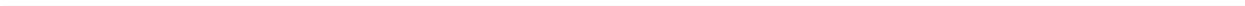


# **CITY UTILITIES DESIGN STANDARDS MANUAL**

**Book 1  
General Requirements (GR)  
GR5 Project Coordination**

September 2017



### GR5.01 Purpose

The purpose of this Chapter is to:

- Ensure consistent project development by defining necessary criteria for compliance during the design process including the preparation of construction documents of proposed improvements to stormwater and/or sanitary sewer collection systems, and/or water distribution system facilities for approval by City Utilities (CUE and/or DVS).
- Supplement the project development criteria and requirements of other City departments and other local, state, and federal agencies.
- Provide direction for preparation of opinions of capital, operation, and maintenance costs.

Information provided in this Chapter does not relieve the design engineer from adhering to proper engineering practices, applicable codes, etc.

Where project development criteria from different sources are in conflict with another, the discrepancy shall be discussed and resolved with the CUE Project Manager or the DVS Program Manager.

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### GR5.02 Services Offered by DVS

1. Information

In most cases, DVS can make available City GIS maps, record drawings, ordinances, rules and regulations, studies, and facility plans.

2. Conceptual Review

The need for conceptual review will be determined on a case-by-case basis, usually based on the project description. It may not always be a formal process and could occur with a simple discussion with the DVS Project Manager for compliance with the City's requirements.

Construction drawings may be submitted to DVS to review readiness prior to a formal submittal.

When required and upon the submittal of sufficient basic information, the DVS Project Manager will review the request.

3. Construction Drawings Approval

The DVS Program Manager will review construction drawings for adherence to the Standards as well as conformance with other City standards and specifications. If the submittals are incomplete or are not in compliance with City standards, the construction drawings will be returned for incorporation of required revisions to the design for resubmittal. When the construction drawings are in compliance, DVS will stamp the plans "Approved" and prepare developer public utility extension contracts and/or other appropriate documents as required.

### GR5.03 Coordination with Other City Departments

During the design process, the stormwater and/or sanitary sewer collection systems, and/or potable water distribution system project may also require reviews and/or permits to be issued by other City departments.

1. CUE Projects

The CUE Project Manager shall confirm who is responsible for the routing of the construction drawings to other City Departments, prior to the first CUE project design submittal. Approval from all other City departments will be coordinated with the CUE Project Manager.

2. DVS Projects

Coordination with other City departments starts at the planning stage of the project and continues throughout the entire project submittal stage.

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### GR5.04 Environmental Assessment

The following environmental factors shall be assessed to delineate a basis for selecting one alternative over another during all stages of project coordination:

- wetlands,
- wildlife habitat,
- historic properties,
- noise,
- water quality,
- trails,
- hazardous materials,
- Karst topography,
- air quality,
- floodplain,
- public parks, and
- contaminated materials.

This list is not all inclusive, and does not relieve design engineer of the responsibility to evaluate other items necessary to justify final design recommendations.

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### GR5.05 Sustainable Infrastructure Design and Implementation

In an effort to reduce the peak hydraulic and pollutant load during wet weather events and the ever increasing regulatory control of stormwater management, City Utilities encourages the use of designs that promote ground infiltration, filtering, evaporation, and detention of runoff close to its source. The Stormwater Book of the Standards provides sustainable infrastructure design criteria for City projects.

### GR5.06 Utility Coordination

The design of all projects shall be researched and coordinated with all utilities and/or appropriate agencies actively involved in the provision of services within the proposed project area.

Utility coordination efforts/responsibilities for City Utilities projects shall include, but are not necessarily limited to the following:

- Obtain, examine, and evaluate current public and private utility records for information needed in project planning and design;
- Identify and evaluate potential conflicts with other proposed projects in the immediate area;
- Research City's available documents pertaining to existing stormwater and sanitary sewer collection systems, potable water distribution system, and transportation facilities in the vicinity of the proposed project including: existing mapping, record drawings, City and County GIS data, and other pertinent information;
- Obtain maps of regulated drains from the County Surveyor's Office;
- Obtain plat information from the Allen County Recorder's Office;
- Request in-field location of facilities prior to surveying by calling 811 or 1-800-382-5544.
- Verify location of underground infrastructure with the appropriate private utility companies after surveying; and
- For subsurface utility engineering verification, refer to [Chapter GR8 - Subsurface Investigation](#).

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### GR5.07 General Submittal Requirements

For most City Utilities Engineering projects, the design will be developed in four submittal stages, each of which requires approval from the Project Manager to proceed to the next stage. Some projects may not require all four submittal stages. The CUE Project Manager shall agree before any of the submittal stages are omitted.

For DVS projects, plans are normally submitted to the Department of Planning Services (DPS), which then delivers the plans to the appropriate City departments and agencies for review and approval. With prior approval from DVS, Stormwater Pollution Prevention Plans (SWPPP) may be submitted directly to DVS prior to submittal of the plans to the DPS.

At a minimum, all submittals shall be in conformance with the criteria for project design development and submittals outlined in the Standards.

### GR5.08 Professional Certification

For all CUE Projects, the design engineer shall be responsible to confirm that all criteria and standards are implemented accurately in the preparation of project documents. For the final design submittal, all plans are to be certified by an Indiana licensed Professional Engineer in accordance with the requirements set forth by the Indiana State Board of Registration for Professional Engineers Statute and Board Rules and the Indiana Code.

Plans for all DVS Projects shall be certified as follows:

- For a potable water construction permit, a licensed Professional Engineer shall prepare the plans and submit them to City Utilities for review;
- For a local sanitary sewer construction permit, a licensed Professional Engineer shall prepare the plans and submit them to City Utilities for review;
- A Professional Surveyor shall certify the survey for all projects;
- SWPPP shall bear the certification of a licensed Professional Engineer or a Professional Surveyor.
- For stormwater collection system design plans, the DVS Project Manager will determine the appropriate/acceptable professional certification.

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### GR5.09 Review and Approval Process

#### 1. CUE Projects

The design drawings will be reviewed at the completion of each design phase by the project manager and other departments within the City affected by and/or having jurisdiction over various components of the project. Design drawings shall be submitted to the project manager who will coordinate the review process. The project manager will compile the review comments and submit them to the design engineer at the specific design submittal review meeting for integration into the project. All comments shall be reconciled and resolutions documented appropriately. The review and approval process will vary depending on the project schedule.

#### 2. DVS Projects

Design drawings shall be submitted to the DPS for review unless otherwise directed. DPS will route plans to DVS. All DVS review comments will be provided directly to applicant for resolution and re-submittal. All changes requested by DVS upon review shall be incorporated and addressed before design approval is granted for the project.

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### GR5.10 Opinions of Probable Project Cost for CUE Projects

A detailed cost estimate of the probable cost of construction for the project shall be provided with each design submittal. The cost estimate shall reflect the design engineer's best estimate of the probable cost to construct the

project described by the drawings and technical specifications. Cost estimates should be based on the same drawings and specifications provided to the CUE Project Manager for review.

A review of the market conditions in the applicable geographic area shall be made when preparing each cost estimate. The following factors shall be considered in preparing each cost estimate:

- the effect of project costs on bidding competition,
- seasonal conditions,
- job site conditions,
- area productivity,
- material cost and availability,
- labor costs, and
- optimum methods of construction.

The final project cost methods of measurements and units shall comply with the Construction Specifications Institute (CSI) Master Format (MF04) technical specifications prepared for the project. The City has developed templates for many general technical specifications. A list of available MF04 technical specification and templates are part of the City website at <http://www.cityoffortwayne.org/utilities/design-and-construction/master-specifications.html>.

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### GR5.11 Life Cycle Cost (LCC)

The CUE Project Manager will determine the necessity of developing a life cycle cost (LCC) analysis for each project. The LCC analysis content includes interest rate, miscellaneous cost elements, etc.; and shall be discussed with the CUE Project Manager prior to the development of any LCC analysis.

A LCC analysis shall be conducted to compare and evaluate the different alternatives considered. Using the LCC economic model provides better assessment of long-term cost effectiveness of projects compared to only using the initial cost of design and construction in making decisions. For best results, the LCC analysis requires that the objectives of the project be clearly defined, assumptions about future conditions be clearly stated, and all reasonable means of accomplishing the defined objectives be evaluated. [Exhibit GR5-1](#) provides a sample calculation for a LCC analysis report.

For analysis of sewer collection system options, refer to [Chapter GR11 – Life Cycle Cost Analysis](#).

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### GR5.12 American with Disabilities Act Accessibility Guidelines (ADAAG)

The design of projects shall include provisions to replace concrete sidewalks and curb ramps adjacent to and affected by the construction of the proposed project with new sidewalk ramps at street intersections, in conformance with ADAAG, latest edition.

During the design phase, the CUE Engineer will be coordinating projects with other City departments. As a result of this coordination, installation of ADA ramps may be required to be added in locations not directly impacted by the

proposed project. In this case, the project drawings shall include design and installation details required for the additional requested ramps.

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**GR5.13 Pedestrian Facilities in the Public Rights-Of Way Accessibility Guidelines (PROWAG)**

The design of projects shall include provisions to improve or maintain pedestrian access routes, and reduce various constraints posed by space limitations. The guidelines apply to permanent, as well as, temporary facilities. When the proposed construction project is altering the existing right-of-way, restore the affected area, in conformance with PROWAG, latest edition.