

Direct Potable Reuse Guidance

1/10/23 DWAWG Meeting
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Overview of Presentation

- TCEQ's new regulatory guidance document
- SB 905 from 87th Legislative Session
- Definitions of various types of reuse
- TCEQ approach to regulating Direct Potable Reuse (DPR) projects
- DPR guidance: what it covers
 - Steps of DPR Approval Process
- Why a Case-by-Case Approach Works
- "DPR Triangle"

RG-634



RG-634 • November 2022
TCEQ Water Supply Division

Direct Potable Reuse for Public Water Systems

Introduction

Senate Bill 905 from the 87th Legislative Regular Session required the Texas Commission on Environmental Quality (TCEQ) to develop a regulatory guidance manual outlining agency rules that apply to direct potable reuse. This guidance manual explains how direct potable reuse (DPR) is regulated in Texas and what is required for a public water system to receive approval of a DPR project.

The State of Texas Health and Safety Code 341.0391 defines DPR as “the introduction of treated reclaimed municipal wastewater either: directly into a public water system; or into a raw water supply immediately before the water enters a drinking water treatment plant”

TCEQ must ensure that public water supply projects comply with applicable federal and state laws, regulations, rules, guidelines, and design criteria to produce safe drinking water. Public health protection requires that microbiological and chemical

Senate Bill 905

S.B. No. 905

1 AN ACT

2 relating to guidance on the regulations applicable to the potable
3 reuse of wastewater.

4 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

5 SECTION 1. Subchapter C, Chapter 341, Health and Safety
6 Code, is amended by adding Section 341.0391 to read as follows:

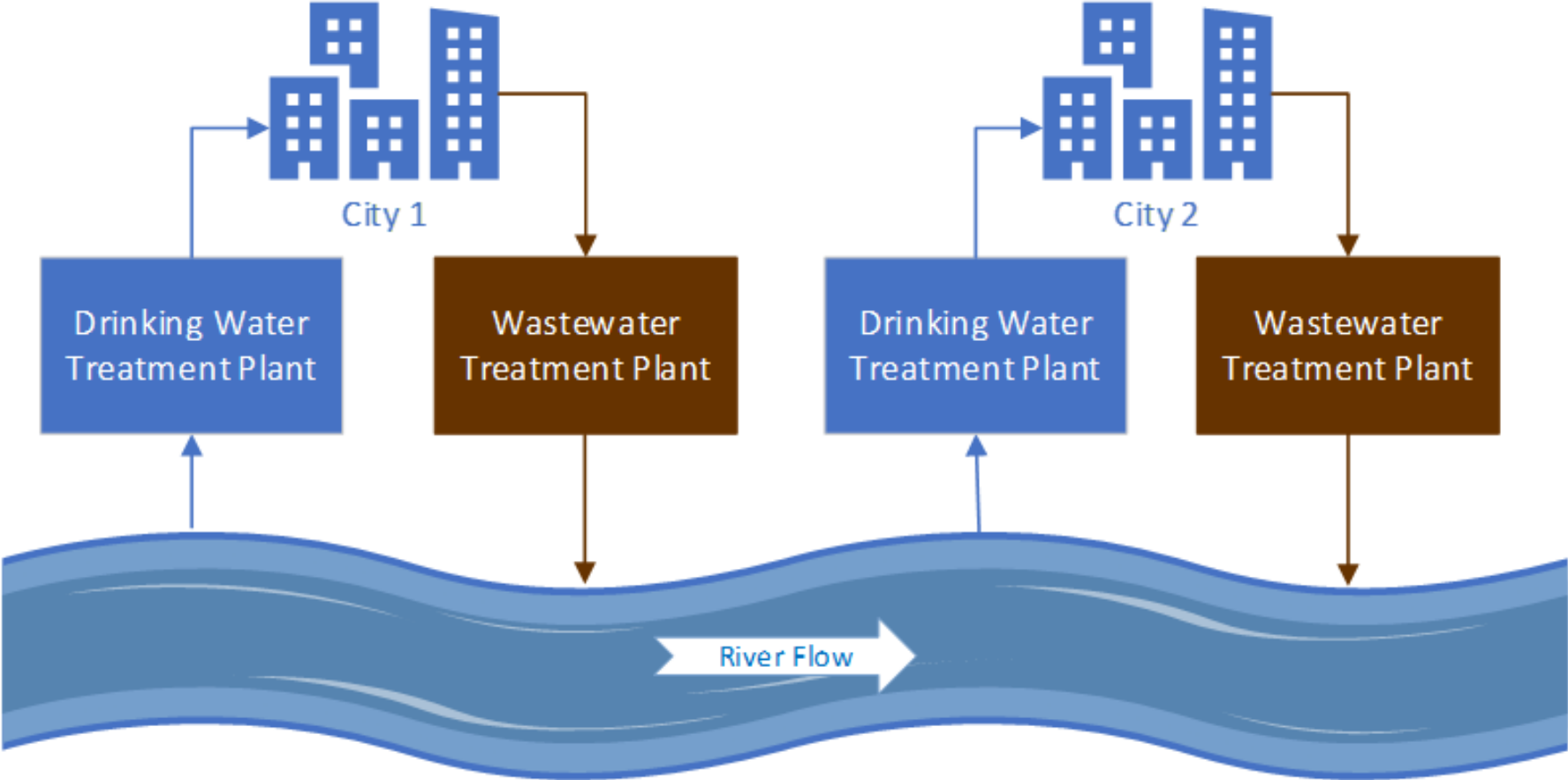
7 Sec. 341.0391. DIRECT POTABLE REUSE GUIDANCE. (a) In this
8 section, "direct potable reuse" means the introduction of treated
9 reclaimed municipal wastewater either:

10 (1) directly into a public water system; or

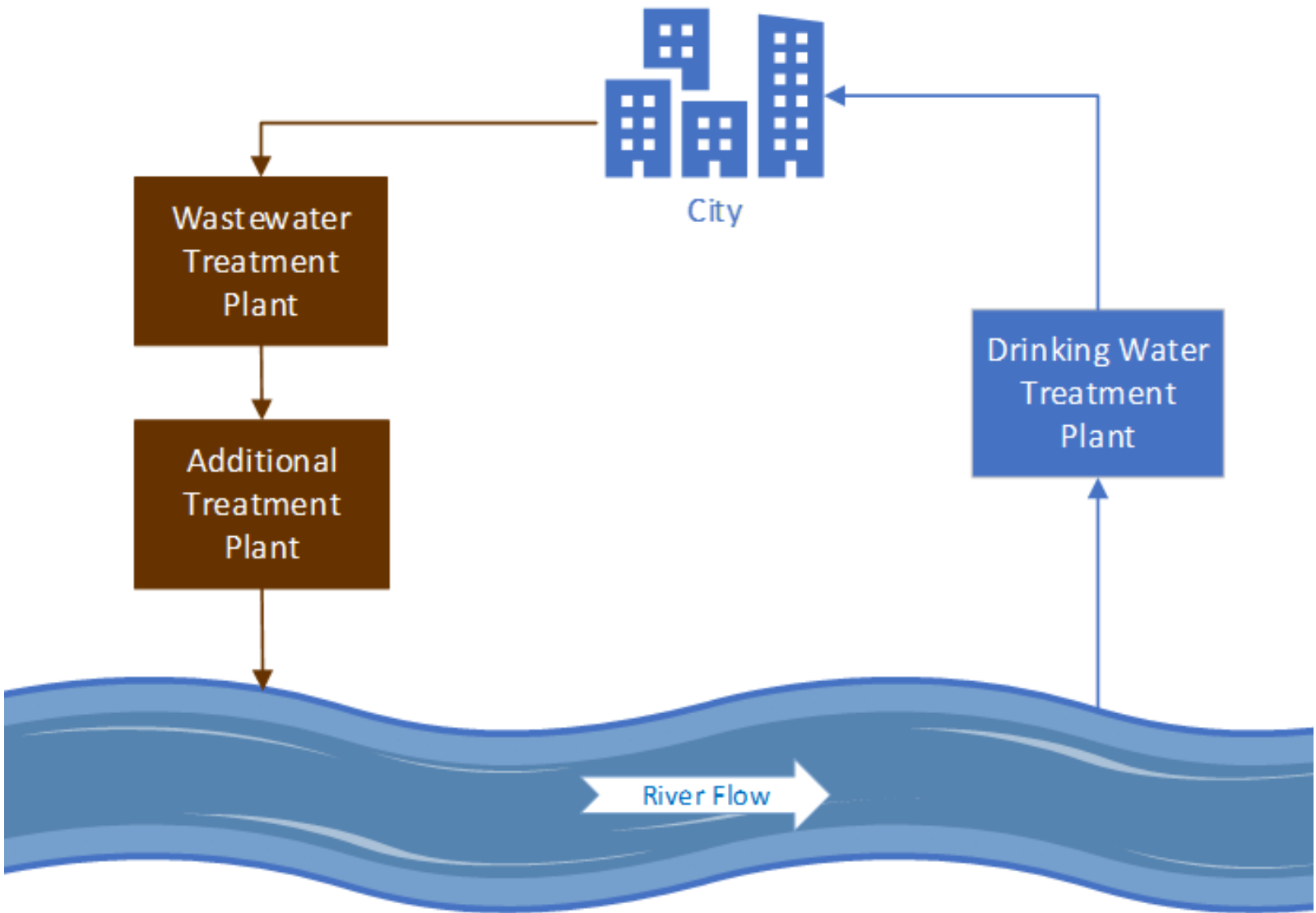
11 (2) into a raw water supply immediately before the
12 water enters a drinking water treatment plant.

13 (b) The commission shall develop and make available to the
14 public a regulatory guidance manual to explain commission rules
15 that apply to direct potable reuse.

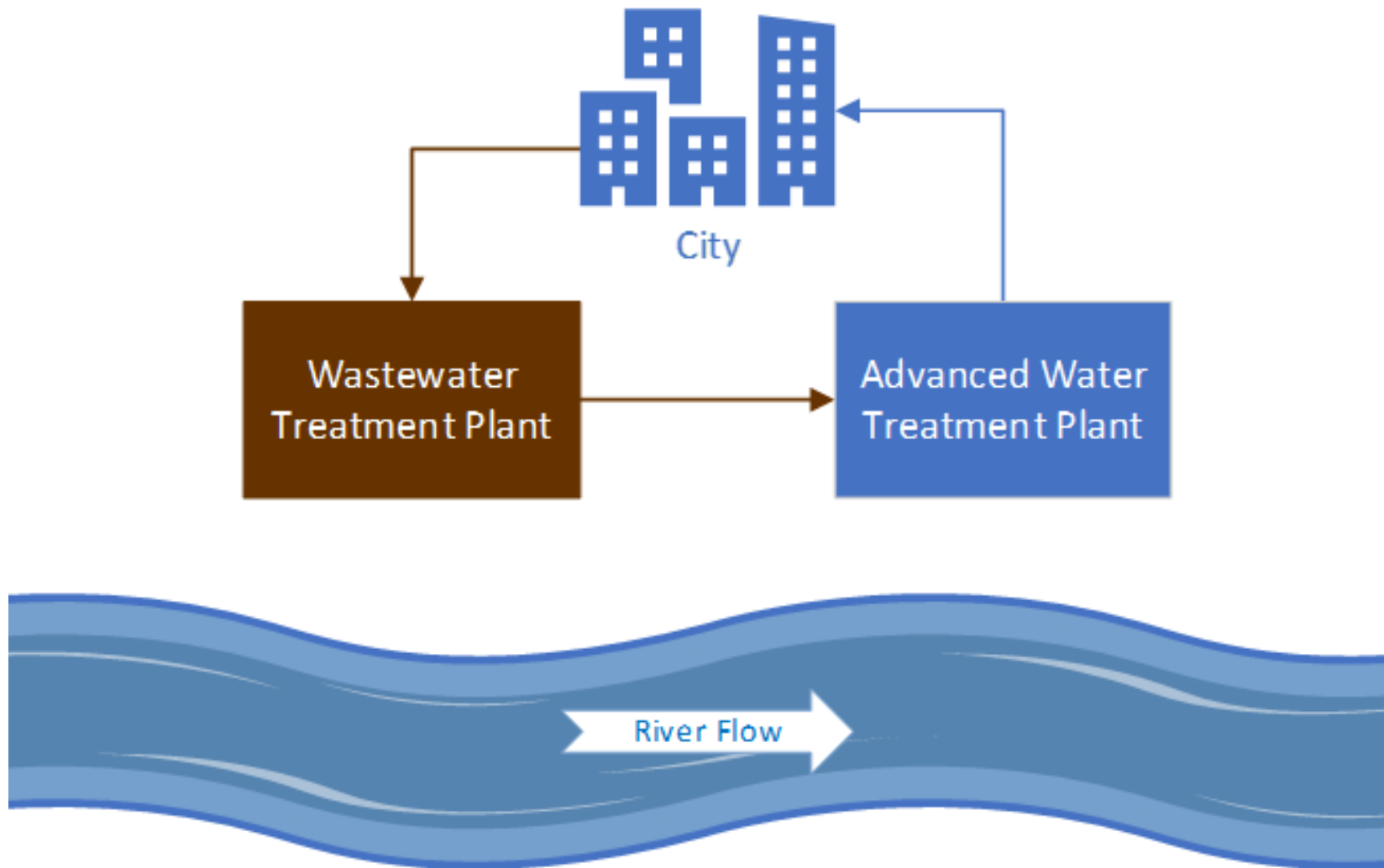
De Facto Reuse



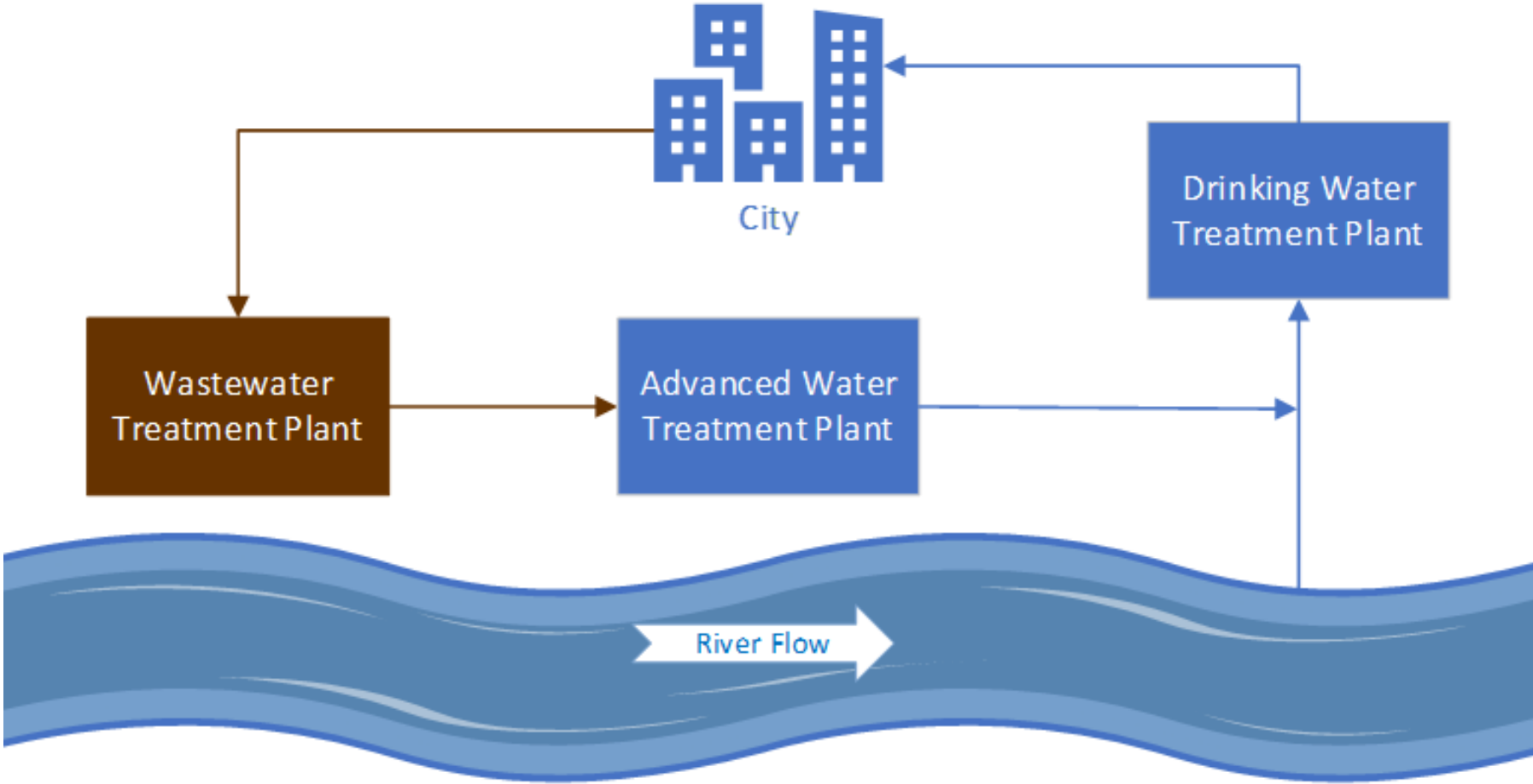
Indirect Potable Reuse



Direct Potable Reuse - Scenario 1



Direct Potable Reuse – Scenario 2



TCEQ's Approach to DPR

- TCEQ's current DPR approval process results in issuing authorizations that are tailored for a specific plant design and unique source water quality. Since minimum treatment requirements are based on the wastewater effluent characterization, each DPR plant can be designed to meet the specific quality of the source water.
- If federal and state finished drinking water standards can be met, TCEQ can approve the proposed plant design. This process ensures public health is protected and avoids unnecessary "overdesign" of the plant.

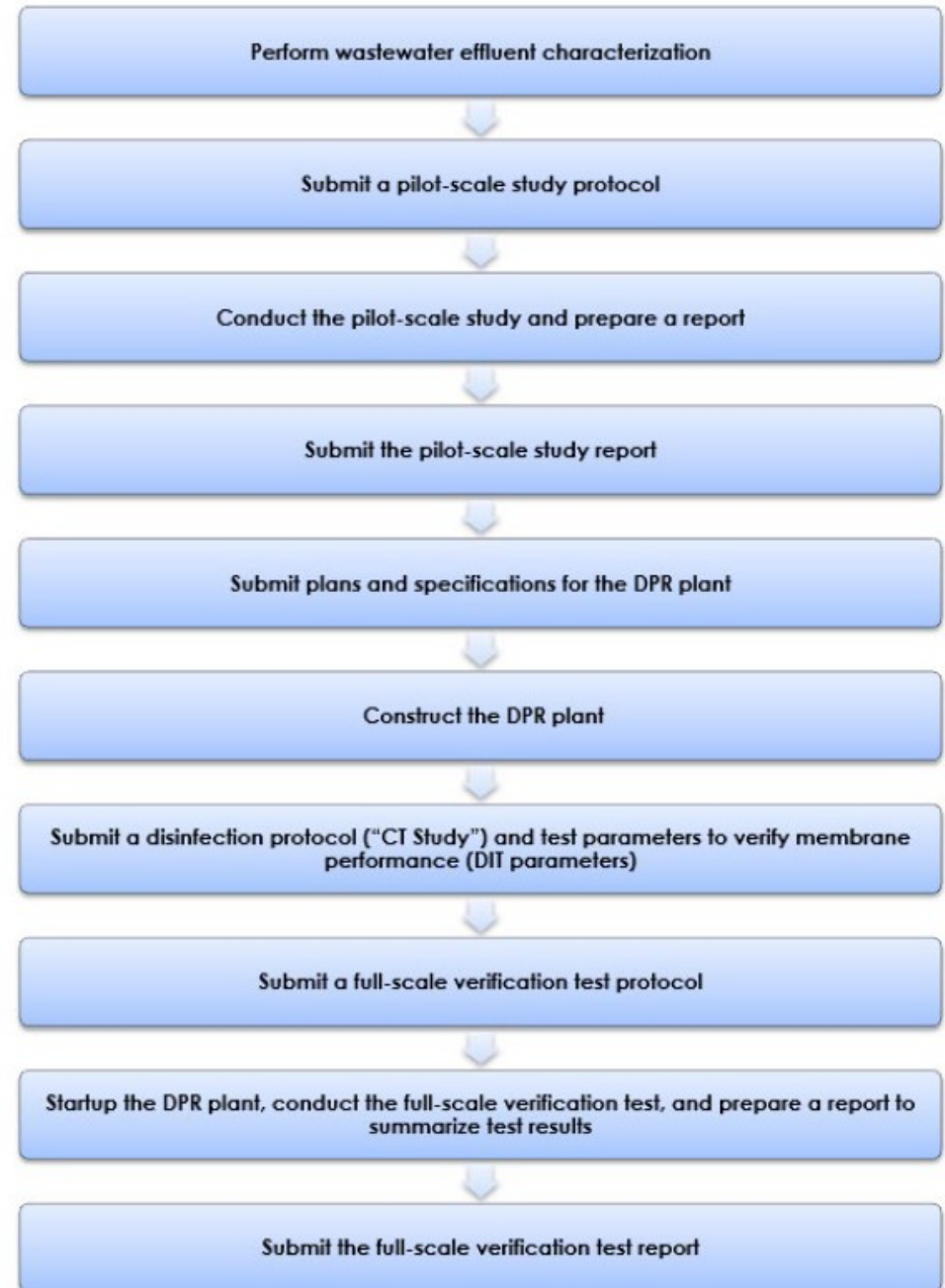
What RG-634 Covers

- Overview of Treatment Requirements
 - Minimum required pathogen removal/inactivation
 - Minimum required chemical treatment
- Operator Requirements
 - At DPR Plant
 - At wastewater treatment plant supplying the source water
- Additional Permitting Requirements for Programs other than the Water Supply Division
 - Water Quality Division
 - Wastewater permits and reclaimed water authorizations
 - Pretreatment Program
 - Water Availability Division

What RG-634 Covers Cont.

- Other considerations, such as community involvement, DPR Plant costs, and supplemental water source
- Treatment Plant Design Considerations
- Steps in the Process for DPR Approval

DPR Approval Process



Why a Case-by-Case Approach Works

- Flexible:
 - Allowed a city of over 100,000 people with no other options from running out of water during the previous drought
- Allows customized treatment, monitoring and operations for each PWS's situation
 - Example: using existing equipment
- Allows innovation in new projects based on research
- Pilot studies and full-scale verification provide water quality results before the water is sent to customers

DPR Triangle

- TCEQ looks at the proposed treatment process, monitoring and operations of each DPR treatment unit to set requirements



- Providing more treatment than required (i.e. greater safety factor) may result in less required monitoring
- The sides of the triangle may change; but the “safety” in the middle will remain the same for each DPR facility.

Contact Information

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