

## **REGIONAL WATER QUALITY PROTECTION PLAN**

### **Stakeholder Committee Goal Statement:**

“Develop an implement-able Regional Water Quality Management Plan that preserves and protects resources and manages activities within the planning region so that existing and future land use, land management, and development activities maintains or enhances the existing water quality of the groundwater within the Barton Springs Segment of the Edwards Aquifer or the surface water in the contributing portion of the watersheds within the planning region, for the purpose of maintaining the existing beneficial uses of those waters by people and the environment.”

### **Objectives necessary to accomplish the goal:**

#### **Objective 1**

*How do we define “Water Quality” for this project?*

1. Develop a working definition of water quality for the planning region which can be utilized during the development of the regional plan.

#### **Strategy to Achieve Objective 1**

- Use the definition of “Water Quality” adopted by the project Executive Committee:

*Water quality being defined for this project as: "The condition of water, as affected by chemical, physical, biological and habitat factors, and its hydrological regime, for use as public and private drinking water supplies, for protection and propagation of the Barton Springs Salamander, and for aesthetic and recreational use within the contributing area and aquifer boundary for the Barton Springs segment of the Edwards Aquifer".*

- Supplement the common definition of “Environment” to include the earthen media, water, air, flora and fauna in the planning region.

#### **Objective 2**

*What Causes Water Quality Problems?*

2. Identify activities within the planning region that have had or could have a short term or long term adverse impact on water quality in the Barton Springs Segment of the Edwards Aquifer or in the contributing watersheds within the planning region.

#### **Strategy to Achieve Objective 2**

- Use existing rules, regulations, published studies and generally accepted engineering and scientific standards to list short term and long term activities that have been shown to adversely impact water quality.
- Rank short term and long term activities with respect to their potential impact on water quality within the planning region.

### **Objective 3**

*What Standards do we Apply?*

3. Identify standards that can be used to define baseline water quality, including: (1) existing regulatory standards for drinking water; (2) current analysis of groundwater quality in the Barton Springs Segment of the Edwards Aquifer; (3) current surface water quality in the contributing watersheds within the planning region; (4) scientifically-based thresholds for adverse impacts to human health and the environment; and, (5) existing hydrologic flow regimes.

### **Strategies to Achieve Objective 3**

- Review existing groundwater, surface water and drinking water regulations to determine applicable water quality parameters and their corresponding limits.
- Review existing groundwater, surface water and drinking water evaluations to determine any available historical and current levels for the identified water quality parameters.
- Review technical literature to determine any regulatory agency approved scientifically based water quality parameter thresholds for adverse impact to human health and the environment.
- Review technical literature to determine any peer-reviewed scientifically based water quality parameter thresholds for adverse impact to human health and the environment.
- Review technical literature to identify methods for determining existing stormwater runoff rates and volumes.

### **Objective 4**

*Who Can Act?*

4. Identify entities capable of implementing, monitoring, and enforcing water quality protection measures within the planning area, as well as any existing legal and institutional constraints on these entities, and develop procedures to educate and inform the public of voluntary measures they can implement.

### **Strategies to Achieve Objective 4**

- Review existing legislation and legal authority for existing entities in the planning region and determine their existing powers to regulate activities affecting water quality.
- Review options for implementing water quality plans among existing local political subdivisions, determine areas of gaps/overlaps and recommend solutions to fill the gaps and clarify areas of overlap.
- Recommend options for establishing legal authority to implement any new water quality protection measures not currently authorized, including possibly establishing a new entity or entities, or expanding the authorities of existing entities.

- Develop a communication strategy to educate and inform the public of voluntary measures they can implement.

### **Objective 5**

*What Measures are Already in Place?*

5. Identify existing water quality plans and regulations currently in effect in the planning region including any parameters used to measure the success of those plans and regulations, identify any significant deficiencies in these plans and regulations, and identify proposed solutions for these deficiencies.

### **Strategies to Achieve Objective 5**

- Review existing water quality plans and regulations which include parameters used to measure the success of water quality protection measures.
- Using existing rules, regulations, published studies and generally accepted engineering and scientific standards list what can be considered existing structural and non-structural Best Management Practices (BMP's) for the protection of water quality. As part of this evaluation an assessment of the success rate and cost of operations and maintenance of the BMP's will be performed.
- Using existing rules, regulations, published studies and generally accepted engineering and scientific standards develop monitoring standards for measuring water quality within the Edwards Aquifer and Barton Creek Watershed, as defined in the objectives.

### **Objective 6**

*What New Measures, Policies and Initiatives are Needed?*

6. Identify new structural and non-structural water quality protection measures to maintain or enhance the existing groundwater or surface water quality, as defined above, including any parameters used to measure the success of those protection measures.

### **Strategies to Achieve Objective 6**

- Using published studies and generally accepted engineering and scientific standards, list additional structural BMP's (i.e. engineered devices, constructed features, etc.) for the protection of water quality. As part of this evaluation an assessment of the success rate and cost of operations and maintenance of the structural BMP's will be performed.
- Using published studies and generally accepted engineering and scientific standards, list additional non-structural BMP's (i.e. administrative controls, zoning/development requirements, open space preservation, etc.) for the protection of water quality. As part of this evaluation an assessment of the success rate and cost of operations and maintenance of the non-structural BMP's will be performed.

- Identify alternative sponsors and methods of financing for land preserve acquisitions, developing capital improvements, monitoring and operations and maintenance to meet water quality parameters.
- Using published studies and generally accepted engineering and scientific standards, develop recommendations for the control of additional stormwater runoff rates and volumes resulting from development activities.
- Using published studies and generally accepted engineering and scientific standards, develop recommendations for alternative sources and uses of water for consumptive purposes, to reduce the need for additional water sources in the region.
- Using published studies and generally accepted engineering and scientific standards, develop recommendations for the preservation of open space.
- Develop recommendations for parameters to be used to measure the success of new water quality protection measures.

### **Objective 7**

*What is our Strategy for Action?*

7. Identify a strategy to: (1) enforce existing water quality protection measures; (2) implement the identified solutions for existing deficient water quality protection measures; (3) implement the identified new water quality protection measures; (4) monitor and assess the effectiveness of the water quality protection measures; and, (5) revise current and future water quality protection measures assessed to be ineffective.

### **Strategy to Achieve Objective 7**

- Using the previously developed assessment of the existing water quality protection measures, recommend procedures to adequately enforce existing water quality protection measures
- Using the previously developed assessment of any areas where existing water quality protection measures are deficient, recommend changes to those measures, and procedures to adequately enforce the proposed solutions.
- Using the previously developed list of additional structural and non-structural BMPs, recommend specific implementation measures and procedures to adequately enforce the implementation measures.
- Identify general public policies that influence water quality.
- Using the previously developed list of critical water quality parameters (including existing limits and other scientifically based thresholds), recommend specific monitoring measures, identify legal mechanisms for performing the monitoring, recommend the process to evaluate the monitoring data and assess the effectiveness of the water quality protection measures.
- Based on the recommended procedures for assessing the effectiveness of water quality protection measures, recommend procedures for revising and updating any water quality protection measures deemed to be ineffective.

## **Areas of Focus for the Plan**

*This presentation of “Areas of Focus” for the regional plan is for the purposes of discussion. These “Areas of Focus” are not intended to be inclusive or exclusive. In addition, some of the items under each “Area of Focus” include examples for illustration purposes that are similarly not intended to be inclusive or exclusive.*

### **Background**

- History
- Definition of planning region
- Description of Stakeholder Process
- Goals/Objectives
- Entities involved

### **What Does the Regional Plan Protect?**

- Hydrology
- Definition of critical parameters
- Scientific basis for critical parameters
- Definition of monitoring and assessment of critical parameters

### **Water Quality Threats**

- Land Development
- Point Source Discharges
- Storm Water Non-Point Source Discharges
- On-site Wastewater Treatment
- Improper Land Management
- Use, Storage and Disposal of Potentially Harmful Materials

### **Watershed Management/Water Quality Protection Measures**

- Open Space Preservation
- Location of development
  - Stream offsets/buffer zones
  - Offsets from critical environmental features/sensitive areas
- Density of development
  - Impervious cover
  - Clustering/low impact footprint
  - Use of semi-pervious cover
  - Mitigation for excess impervious cover
- Nature of development.
  - Residential
  - Commercial/Institutional
  - Industrial
- Land-use restrictions
  - Zoning/Use limitations
  - Preservation of open space
- Management of undeveloped land
  - Agricultural practices
  - Vegetative/forestation practices
  - Preservation of open space for water quality and habitat protection
  - Preservation of open space for mitigation for excess impervious cover

- Preservation of open space for voluntary conservation
- Restrictions on Use, Storage and Disposal of Potentially Harmful Materials
  - Hazardous Materials
  - Wastes
  - Pesticides, Herbicides, Insecticides, Rodenticides
  - Nutrients
- Alternative water sources/uses
  - Rainwater harvesting
  - Wastewater reuse
  - Water Conservation

### ***Public Education/Outreach***

- Awareness of the Regional Plan
- Support of Regional Plan concepts and implementation
- Good Housekeeping

### ***Implementation, Enforcement and Accountability***

- What parameters are to be used to measure and monitor water quality within the project area.
- Who will be responsible for implementing the plan.
- How will this be accomplished(e.g. legal, technical and financial)
- Implementation schedule for the plan

### ***Economic Implications***

- Costs for initial implementation
- Costs for on-going operations and maintenance
- Costs for enforcement and oversight
- Costs of failure and/or inadequacy
- Value of preserved land and land adjacent to preserved land.
- Value of land adjacent to an adversely impacted creek.
- Cost of public facilities to serve development.