

## **Workgroup 2: Metrics & Trends**

### **Legislative Tasks**

Part of the legislative mandate to Water Conservation Advisory Council focused on how conservation progress is measured over time. Specifically the group is tasked to monitor trends in water conservation implementation, to monitor target and goal guidelines for water conservation and to be considered by the board and commission.

Gallons per capital per day (GPCD) is a method used in Texas to measure water usage by water suppliers. The Texas Water Development Board calculates a Municipal GPCD number each year that reflects usage for urban areas. Uses of GPCD include: tracking historical trends in water usage and planning for water supply as population increases.

There has not been a standard methodology used by water suppliers to measure GPCD within their service boundaries. The different GPCD figures reported annually by water suppliers and by TWDB create confusion regarding progress in urban conservation. The tendency of the media or individuals to use Municipal GPCD as a way to compare communities on their conservation efforts is also problematic when the metric is not defined. The Council determined that a focus to standardize GPCD methodology for Texas was priority.

The Council also agreed that GPCD will not be the only metric used for monitoring water conservation progress nor the only measurement used to create targets and goal guidelines. Additional metrics will be needed to track efforts in water usage categories less influenced by regional population. Therefore, a standard GPCD method will be one important starting point for this workgroup, but not the final product.

A series of tasks were outlined by the workgroup in order to complete the GPCD methodology task:

1. Define water usage categories starting from total water produced
2. Determine which water usage categories are appropriate for GPCD tracking
3. Set aside other water usage categories for tracking by different metrics
4. Determine how population within a water supply area can be accurately estimated.
5. Outline steps involved in calculating GPCD metrics
6. Propose an initial reporting format for GPCD and other basic data from water suppliers.

### **Summary of Progress**

#### **1. Defined Water Usage Categories**

There has been a great deal of progress in outlining water usage categories. A subworkgroup developed an initial spreadsheet that has been reviewed by several

interested parties. Feedback from these individuals will be reviewed in another subworkgroup meeting to finalize a flow chart and definitions of each usage category.

## **2. Which Categories Used for GPCD**

Municipal water suppliers are the primary focus of this analysis. The categories within municipal that are most clearly impacted by population changes include:

- Residential
- Multi-Family
- Public/Recreational
- Commercial\*

\*Commercial consumption is a category which will probably be tracked both by a GPCD metric and by other metrics as they are developed. The population of a community is in part supported by office buildings, service industries, restaurants, stadiums and other commercial entities in this category. However, there are also non-population factors which also impact water consumption in this category. As programs are developed for subsets of this category, reporting on it will become more sophisticated.

## **3. Setting Aside Other Categories**

Categories where total water consumption should be reported while metrics are being developed include:

- Institutional
- Industrial
- Outside Sales
- Agriculture
- Unaccounted for Water
- Reuse Direct or Indirect/ Recycled Effluent

## **4. Population Estimate**

There is general agreement that population estimation is complex and imperfect. However, having a reasonable method for estimating current population that is shared by water suppliers is a critical component of accurate GPCD reporting. If different methodologies are used, it is entirely possible to have results that vary by as much as 5-10%. Such a difference can result in an entirely different GPCD report for each year by different regions.

There is also consensus that it is important that a reasonable population estimate be established that can be used by water supply boundaries. This allows better mechanisms for tracking progress of programs as they are implemented by water suppliers. Being able to follow a variety of defined areas will also allow water

suppliers to refine their goals based on what may be very different demographics within their service area.

A sub workgroup met in order to review the challenges of defining a methodology and to develop a plan to proceed. This group included representatives from the TWDB, the Water Conservation Advisory Council, and the State Demographer. Conclusions from this meeting included:

- It would not be possible to refine a population estimation method by June 25<sup>th</sup>, but a work plan could be developed.
- Focus should be on current population estimates. Commuting populations and tourism populations can be refined in the future.
- A starting point for population estimation must begin with data available to every community. Census data fits this need.
- A beginning person to meter ratio can be established using Census data, but for a variety of reasons this ratio may not hold as accurate as time passes between census counts.
- Additional “logic checks” on population estimates from the person to meter ratio can be added to determine if the population estimate may be accurate. The State Demographer, Karl Eschbach, agreed to work with the Water Advisory Council workgroup to refine these logic checks.
- Going through a process of completing this estimate with logic checks with several large water suppliers would help refine the methodology.
- The group determined that it would seek volunteer water suppliers to work through a methodology that can be agreed upon and then standardized for use by the TWDB in the future.

## **5. Outlining Steps for GPCD Metrics**

A basic guide for providing data by water usage category will be developed for the next review date. This will reference the defined water usage categories and their definitions. A proposal for a transition to providing more subsets of data will be made based on community size. It is expected that larger water suppliers may have more sophisticated data available to report on more categories of GPCD than smaller communities.

## **6. Propose Initial Reporting Format**

Several report formats have been suggested for a first conservation trend report. These are attached for review.

## **Key Findings/Recommendations**

1. Data collection by the TWDB is very challenging. Any methodology developed for population estimations and for gathering water consumption data according to subsets will require additional data gathering. Therefore it is suggested that a GIS Analyst and a Planner position be added to TWDB staffing resources in order to provide necessary manpower to get and report good data each year.
2. Water usage categories that have been suggested provide an outline that water suppliers might use in the future with their customer service software for analysis purposes.
3. Initial reports of GPCD may be limited to Residential and Non-Residential if limitations on data make it too difficult for some water suppliers to sort customers by the proposed categories.
4. There is not agreement on whether or not a Total GPCD should be a required reporting.

The metric can be useful for planning future water needs and for reflecting a snapshot in time of the water usage of a regional in ratio to the current population. However, it is a valid concern that Total GPCD can change drastically with addition of industrial customers or with factors such as increased power production in an area. While these water uses are important to reflect in water planning, they are not variable by population. Therefore Total GPCD should not be used to compare different communities regarding whether they are doing well in water conservation efforts.

It is advisable that the Water Conservation Advisory Council acknowledge the Total GPCD metric and create a definition of it in order to standardize reports of it when it is used. It is also a suggestion that the Advisory Council state how this particular metric might be used and why it would be inappropriate to use it for comparative purposes.

Having additional subsets of GPCD along with proposed uses of the metrics may dampen the tendency of some policy makers and media to use Total GPCD as a way to compare communities.

4. An initial population estimate will be used for GPCD by service area. A standard ratio of people to meters may be proposed by each community in the short-term. This will provide a good starting point for GPCD reporting while a TWDB methodology is finalized.

## **Activities Report**

There have been \_\_\_\_ meetings of the Metrics and Trends workgroup by telephone conference call. There have also been two meetings of sub workgroups held at the TWDB offices.

Documents developed include:

- Water Use Categories Flow Chart

- Water Use Categories Definitions Table
- Census Data Starting Methodology for Population
- Draft Conservation Report Card Formats

### **Future Objectives**

1. Obtain high quality data from water suppliers that will establish accurate baselines for water consumption in different categories of users.
2. Standardize ways that consumption data and population data are reported by water suppliers.
3. Have a standard “Conservation Report Card” for each water supplier that becomes increasingly sophisticated as programs, data and metrics evolve.
4. Develop ways to help water suppliers use their “Conservation Report Cards” to target their conservation program plans.
5. Develop guidelines for GPCD targets that can be used by water suppliers to guide goals. Questions these guidelines might address include:
  - a. How to normalize by weather. What is the dry year goal for residential vs. the wet year goal?
  - b. What is a reasonable rate of drop to expect in GPCD categories given a substantial annual investment in conservation?
  - c. How to report on trends that are impacting GPCD trends in different sectors such as a growth in high income housing, additional commercial growth, or a new industry that brings in either tourists or commuters each day.

### **Appendix Documents**

- Water Use Categories Flow Chart
- Water Use Categories Definitions Table
- Census Data Starting Methodology for Population
- Draft Conservation Report Card Formats