# Summary of BMP Savings Calculator Example Results

SB X7 7 U4 Technical Subcommittee

20 September 2010

**Richard A. Mills**

**California State Water Resources Control Board**

# Presentation Overview

- Summary of Calculations using David Mitchell's Draft BMP Savings Calculator

# Components of Calculator

- BMPs
  - 1.2 Water loss control
  - 1.3 Metering
  - 3.1 Residential assistance
  - 3.2 Residential landscape
  - 4 CII
  - 5.2 Landscape budgets
- Residential & CII toilets
- Residential washers & showerheads

# 12 Water Suppliers Tested

- San Francisco Bay – 2
- Central Coast – 2
- Sacramento River – 3
- South Coast - 5

# San Francisco Bay

| Supplier | 2005 Base-line | Targets & % Reduction | | |
|---|---|---|---|---|
| | | Calculator | Method 1 | Method 3 |
| City of Palo Alto | 189 | 160<br>15% | 151<br>20% | 124<br>34% |
| Marin MWD | 135 | 117<br>13% | 108<br>20% | 124<br>8% |

# Central Coast

| Supplier | 2005 Base-line | Targets & % Reduction | | |
|---|---|---|---|---|
| | | Calculator | Method 1 | Method 3 |
| San Luis Obispo | 129 | 115<br>11% | 103<br>20% | 117<br>9% |
| City of Carpenteria | 275 | 235<br>15% | 220<br>20% | 117<br>58% |

# Sacramento River

| Supplier | 2005 Base-line | Targets & % Reduction | | |
|---|---|---|---|---|
| | | Calculator | Method 1 | Method 3 |
| City of Folsom | 324 | 228<br>30% | 259<br>20% | 167<br>48% |
| Placer CWA - Retail | 270 | 232<br>14% | 216<br>20% | 167<br>38% |
| City of Davis | 206 | 185<br>10% | 165<br>20% | 167<br>19% |

# South Coast

| Supplier | 2005 Base-line | Targets & % Reduction | | |
|---|---|---|---|---|
| | | Calculator | Method 1 | Method 3 |
| City of Corona | 224 | 216<br>11% | 195<br>20% | 142<br>42% |
| Walnut Valley WD | 194 | 175<br>10% | 156<br>20% | 142<br>27% |
| City of Santa Monica | 144 | 126<br>13% | 115<br>20% | 142<br>2% |
| City of Oxnard | 128 | 108<br>16% | 103<br>20% | 142<br>-10% |
| Helix WD | 133 | 117<br>12% | 106<br>20% | 142<br>-6% |

# CII Toilet & Urinal Savings

- Targets in Previous Tables
  - CII toilet & urinal savings in 10% CII reduction
- Removing CII toilet & urinal savings from CII reduction
  - Calculate separately – adds 1 to 2% savings

# Consistency in Model Use

- 5 Suppliers calculated by both David Mitchell & Anil Bamezai
- 4 within 0.5 GPCD target
- 1 at 2.6 GPCD difference (City of Palo Alto)

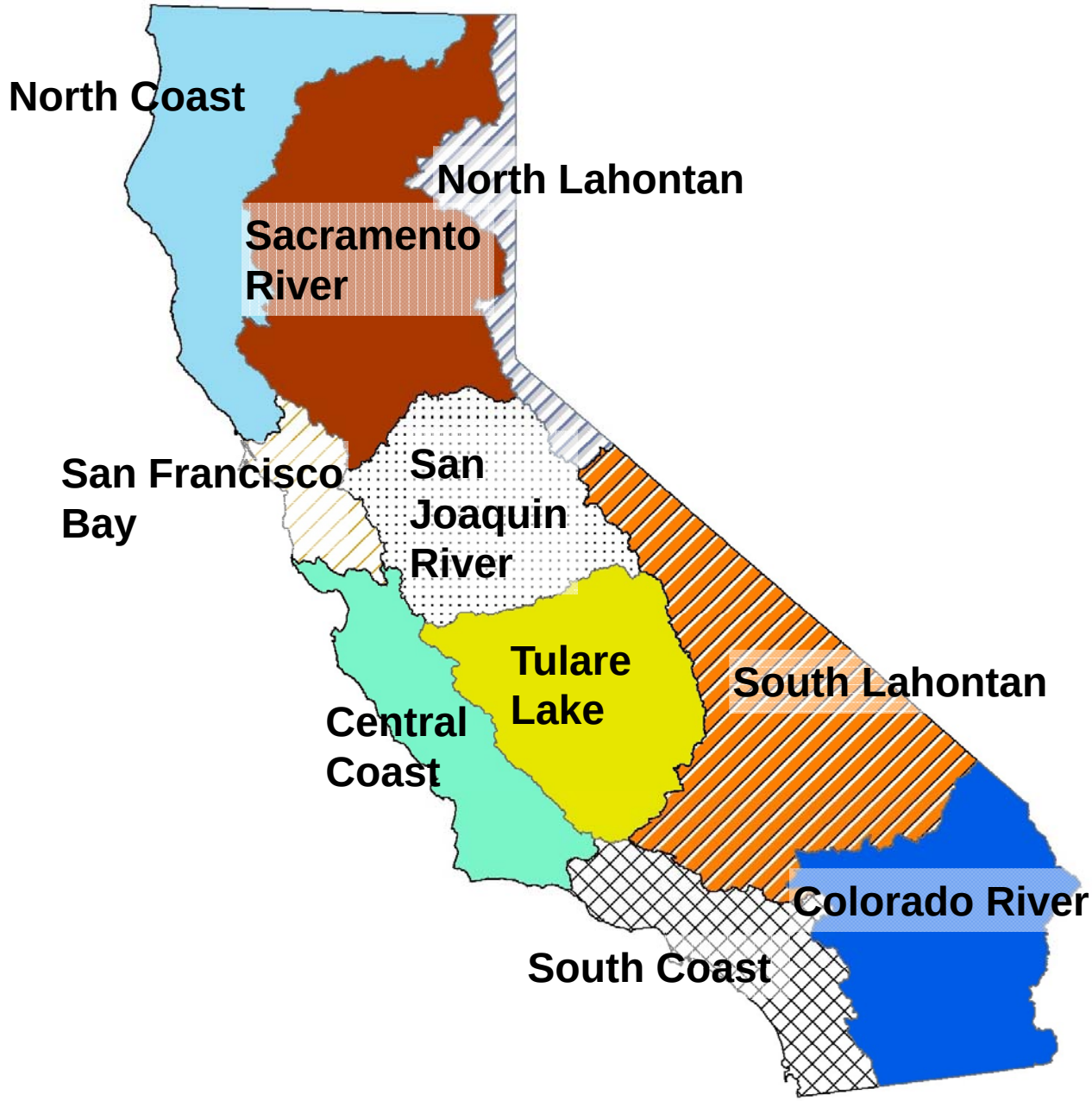
# Adjustment/Scaling Factor

- For 12 suppliers tested, an additional 11 GPCD reduction for all suppliers needed to get average 20% reduction

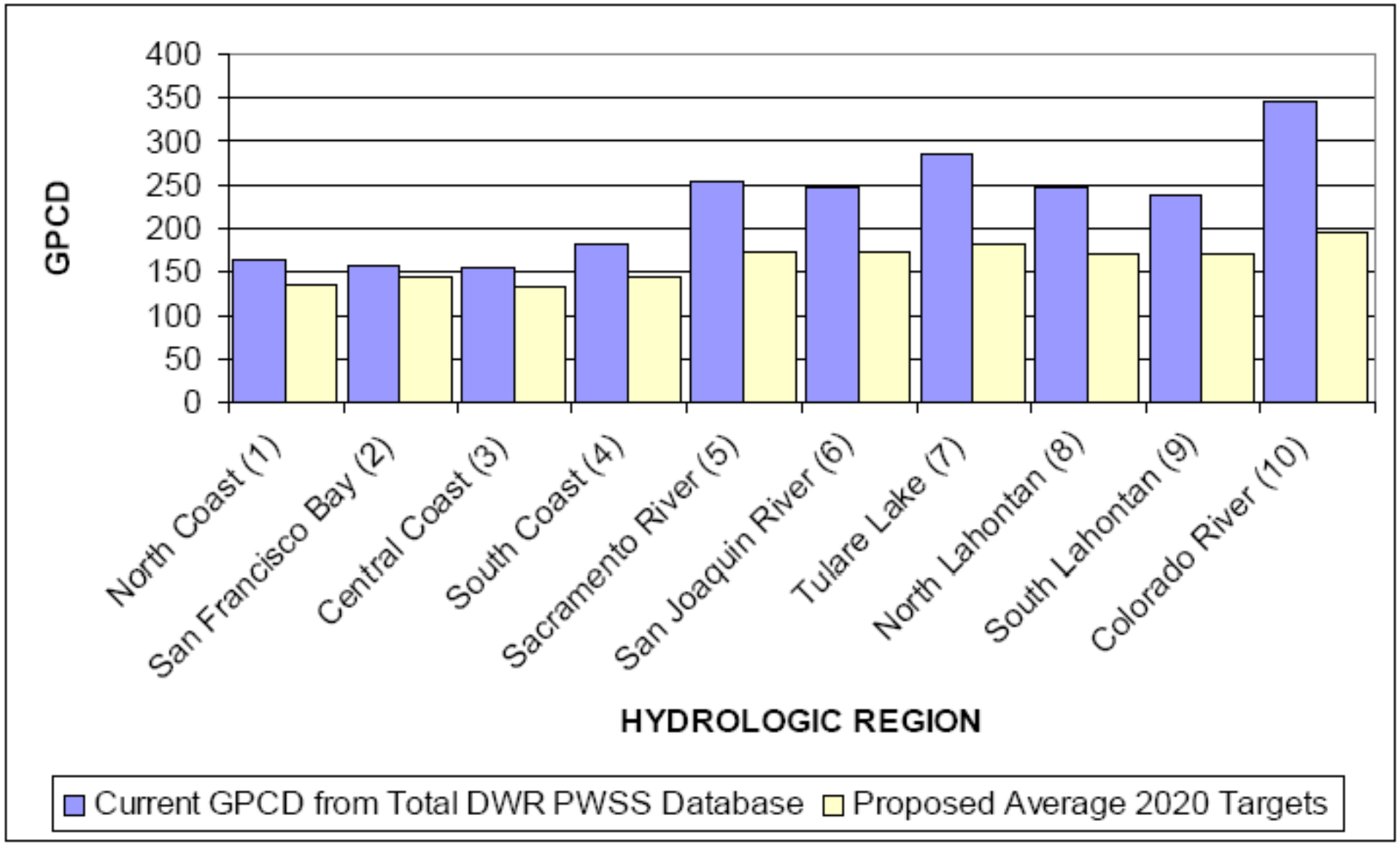
# Concerns

- Only 1 supplier over 20% reduction
  - Possible factor – only 3 suppliers in high use regions with small population
- How to determine adjustment factor if calculator does not mimic 20x2020 Water Conservation Plan results
  - Need better sampling
- Validity of many assumptions in calculator
  - Latitude of suppliers to fill in assumptions may undermine credibility

# 10 Hydrologic Regions



# Baseline GPCD by Region

| Region | Population Weighted Average 1995-2005 |
|---|---|
| North Coast | 165 |
| San Francisco Bay | 157 |
| Central Coast | 154 |
| South Coast | 180 |
| Sacramento River | 253 |
| San Joaquin River | 248 |
| Tulare Lake | 285 |
| North Lahontan | 248 |
| South Lahontan | 237 |
| Colorado River | 346 |

# Targets by Region