

California's Sustainable Groundwater Management Act (SGMA)

"A central feature of these bills is the recognition that groundwater management in California is best accomplished locally."

Governor Jerry Brown, September 2014



DWR SGMA Assistance



Financial Assistance

- Prop 1

Planning Assistance

*- Facilitation
- GSA Support*

Technical Assistance

*- Statewide Datasets, Analysis, and Tools
- Best Management Practices
- Water Available for Replenishment Report*

Engagement and Advisory Role

**DWR
Evaluation of
GSPs**

**Sustainable
Groundwater
Management**

Regulatory Role

Data and Tools

New Data, Tools, and Reports Webpage

1. Download Data

2. Groundwater Tools

➤ Interactive Maps

➤ Modeling Tools

3. Maps and Reports

➤ SGMA BMPs

➤ Statewide GW Maps



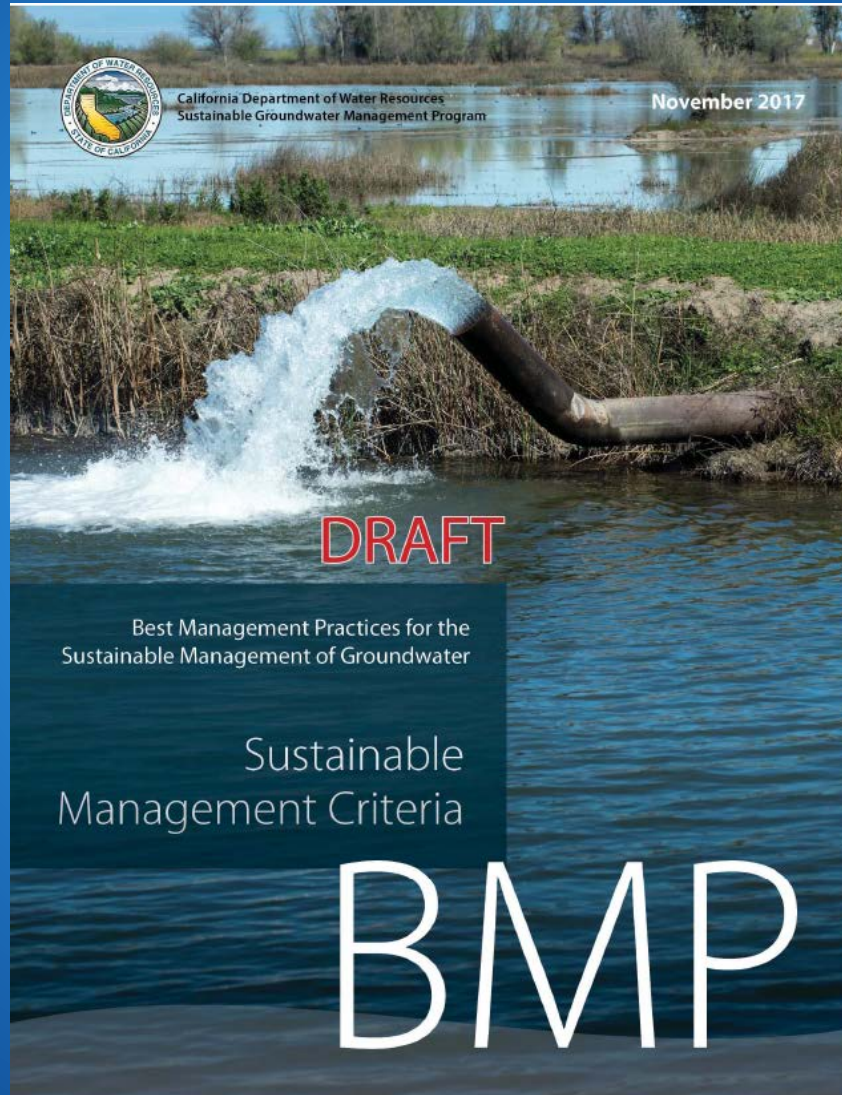
The screenshot shows the 'Data, Tools, and Reports' webpage for Sustainable Groundwater Management (SGM). The header features the SGM logo and a background image of a water pump. The main content area is divided into sections: 'Data, Tools, and Reports Factsheet', 'Download Data' (with links to DWR's SGMA Portal, DWR's Water Data Library, and CASGEM), 'Groundwater Tools' (with links to Interactive Maps, Water Management Planning Tool, Groundwater Basin Boundary Assessment Tool, and Disadvantaged Communities (DAC) Mapping Tool), 'Modeling' (with links to Modeling Code and Modeling Applications), and 'Maps and Reports' (with a link to a variety of regional to statewide maps and reports). A right sidebar contains a 'GROUNDWATER HOME' section with links to 'SUSTAINABLE GROUNDWATER MANAGEMENT' and various reports and tools like 'Adjudicated Basin Reporting', 'Alternative Submittals', 'Basin Boundary Modifications', 'BBAT - Basin Boundary Assessment Tool', 'BBMRS - Basin Boundary Modification Request System', 'Best Management Practices', 'Public Comments', 'Critically Overdrafted Basins', 'Communication and Outreach', 'Advisory Groups', 'Calendar', 'Subscribe for Email Updates', 'Groundwater Sustainability Agencies', 'GSA Notices and Map', 'Withdrawals and Opt-Out Notices', 'Groundwater Sustainability Plan Regulations', 'Initial Notifications', 'Initial Basin Prioritization', and 'Water Available For Replenishment'.

http://www.water.ca.gov/groundwater/sgm/data_tools_reports.cfm

Local Technical Assistance

- Technical Assistance Website coming soon
- Data Contributing to GSP
 - Stream Gauging
 - Transducers in wells

Sustainable Management Criteria



Groundwater Sustainability Plans



*Undesirable Results:
Significant and unreasonable...*

Lowering of
Groundwater
Levels

Reduction of
Groundwater
Storage

Seawater
Intrusion

Water Quality
Degradation

Land
Subsidence

Depletions of
Surface Water

GSP Regulations Plan Contents

1. Administrative Information 3. Sustainable Management Criteria

- § 354.4. General Information
- § 354.6. Agency Information
- § 354.8. Description of Plan Area
- § 354.10. Notice & Communication

- § 354.24. Sustainability Goal
- § 354.26. Undesirable Results
- § 354.28. Minimum Thresholds
- § 354.30. Measurable Objectives

2. Basin Setting

- § 354.14. Hydrogeologic Conceptual Model
- § 354.16. Groundwater Conditions
- § 354.18. Water Budget
- § 354.20. Management Areas

4. Monitoring Networks

- § 354.34. Monitoring Network
- § 354.36. Representative Monitoring
- § 354.38. Assessment & Improvement
- § 354.40. Reporting Monitoring Data to the Department

5. Projects and Management Actions

- § 354.44. Projects & Management Actions

Undesirable Results

Significant and Unreasonable



Lowering
GW Levels



Reduction
of Storage



Seawater
Intrusion



Degraded
Quality



Land
Subsidence



Surface Water
Depletion



Sustainable Management Criteria

- Set by GSAs
- Must be quantitative and define conditions under which sustainable groundwater management occurs in the basin
- Based on information developed for *Administrative Information* and *Basin Setting*
- Supported by *Monitoring Networks*
- Achieved by *Projects and Management Actions*



Sustainable Management Criteria

1. Minimum Thresholds
2. Undesirable Results
3. Measurable Objective
4. Sustainability Goal

Minimum Threshold Metrics

- Statewide Framework -

Sustainability Indicators



Lowering
GW Levels



Reduction
of Storage



Seawater
Intrusion



Degraded
Quality

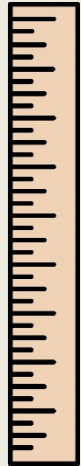
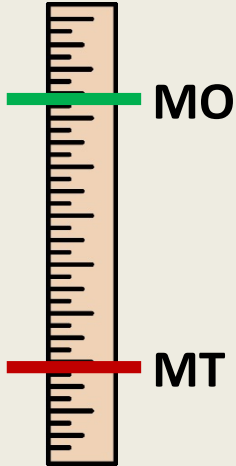


Land
Subsidence



Surface Water
Depletion

Metrics



Groundwater
Elevation

Total
Volume

Isocontour
of Chloride

Degraded
Quality

Rate & Extent
of Subsidence

Rate or Volume of
SW Depletions

***Groundwater Elevations - can be used for multiple minimum thresholds**

MO = Measurable Objective

MT = Minimum Threshold



1. Minimum Thresholds

- Point at a representative monitoring site where conditions could become significant and unreasonable
- Develop for each sustainability indicator

-or-

Use representative groundwater level for one or more sustainability indicator(s) (supported by a demonstration that the proxy is a reasonable substitute)

- Extent: representative monitoring sites



2. Undesirable Results

- The quantitative combination of minimum threshold exceedances that constitute a significant and unreasonable condition
- Extent: basin-wide definition, based on minimum threshold exceedances at GSA-specified spatial scales

3. Measurable Objective (and Interim Milestones)



- Quantitative objectives that take into account a reasonable margin of operational flexibility
- Interim milestones are set every five years
- MO is achieved in 20 years
- Extent: same network of representative monitoring sites used for minimum thresholds

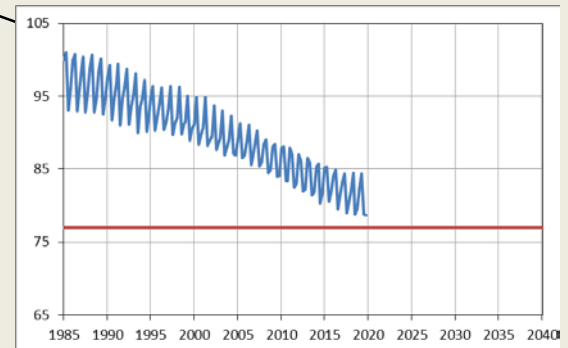
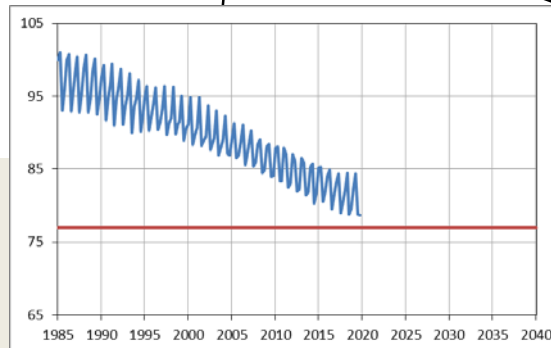
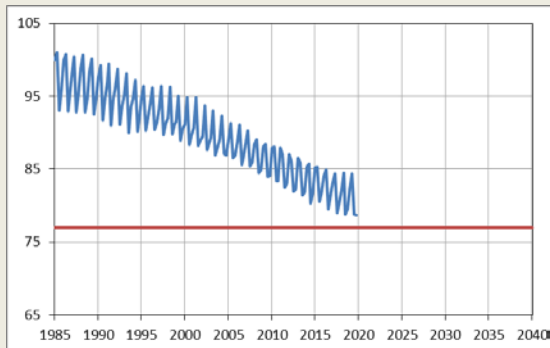
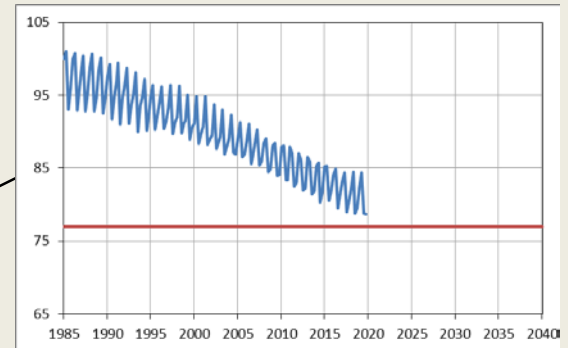
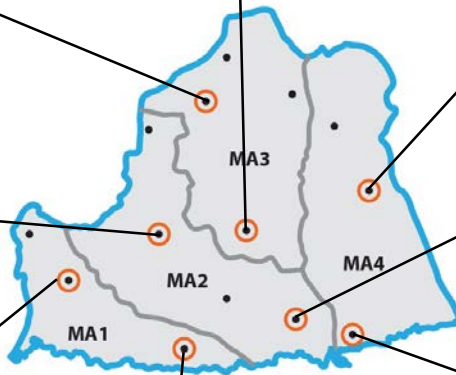
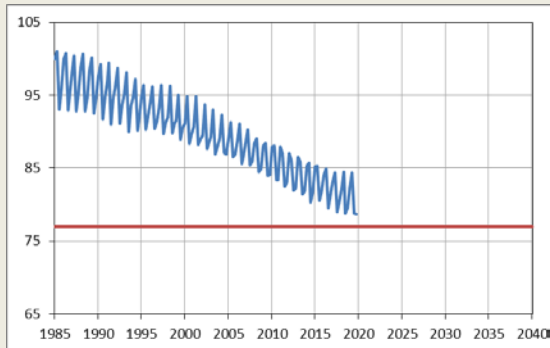
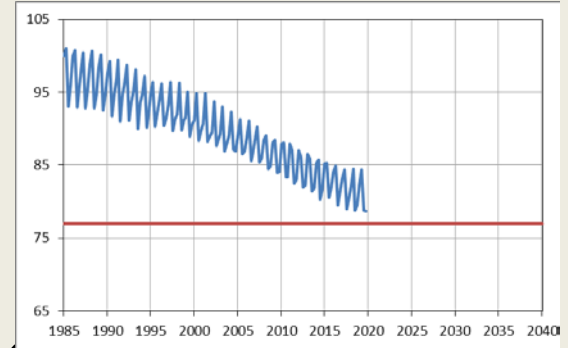
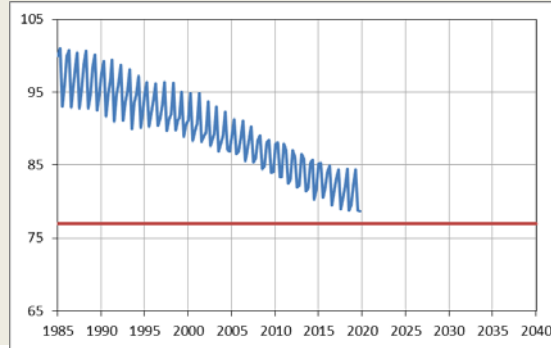
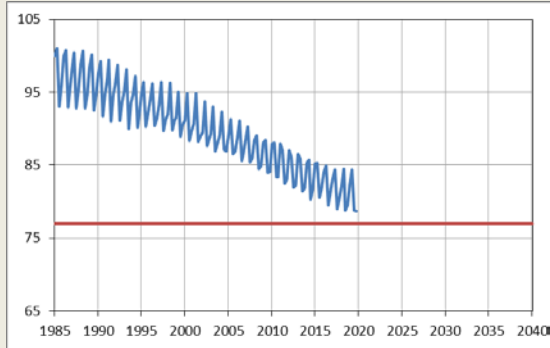


4. Sustainability Goal

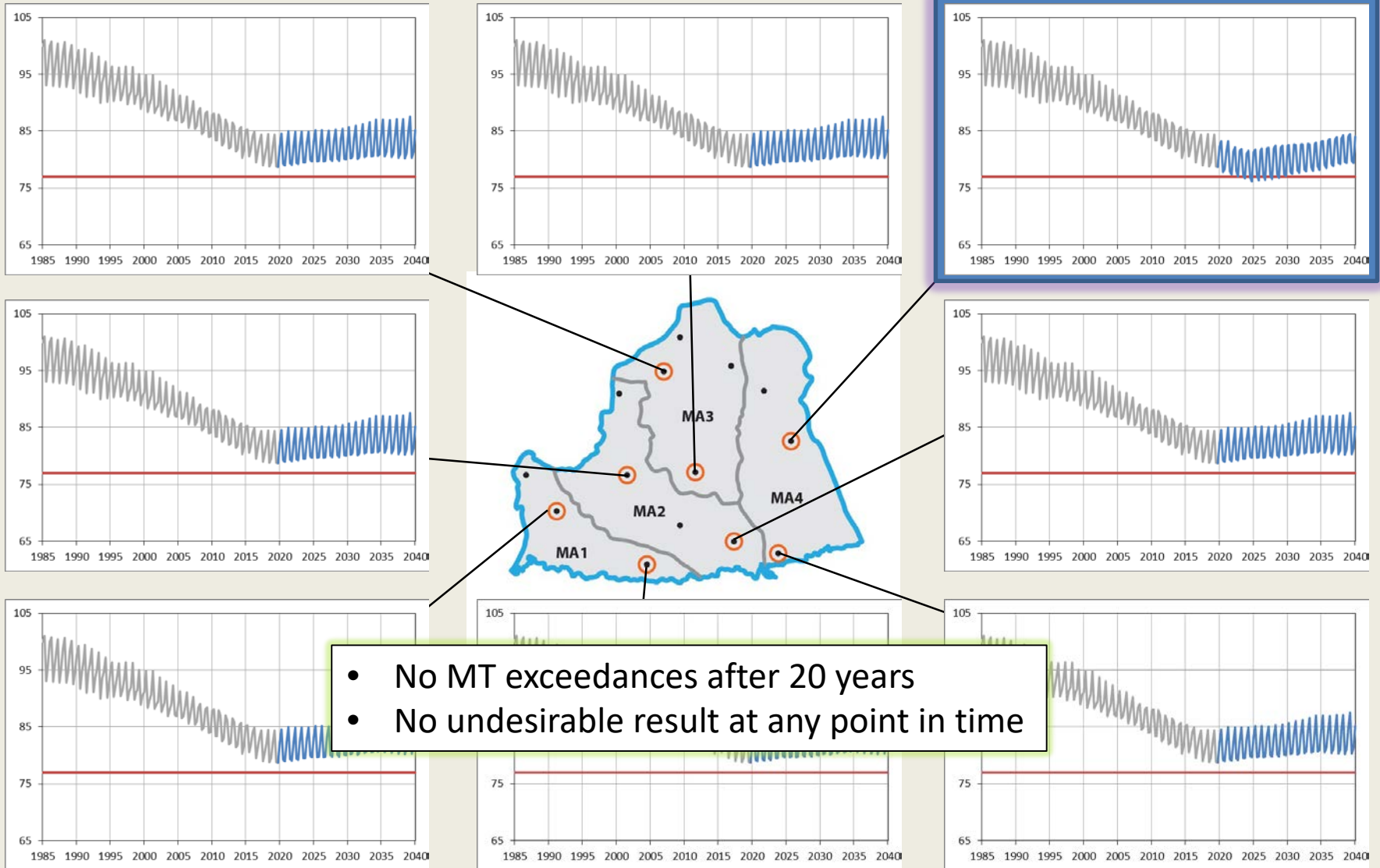
- The sustainability goal states:
 - The objectives and desired conditions of the groundwater basin,
 - Measures the GSA(s) will take to get to that desired condition, and
 - How the measures planned will lead to success
- Ultimately, must result in elimination and avoidance of undesirable results
- Extent: single, basin-wide goal

Example

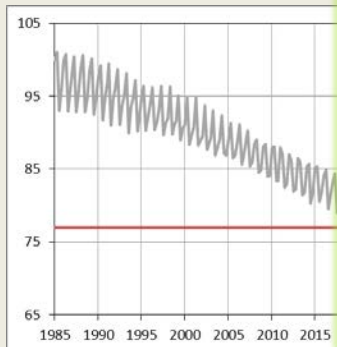
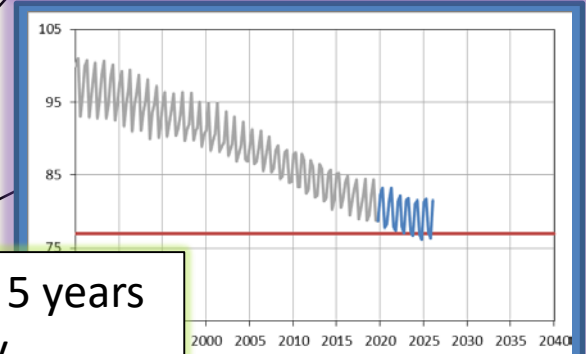
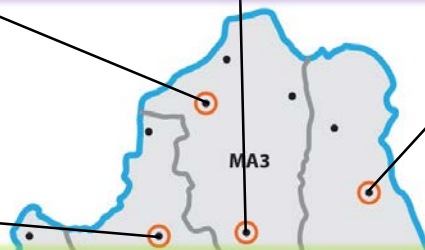
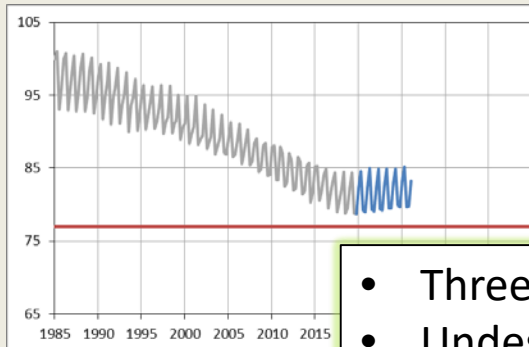
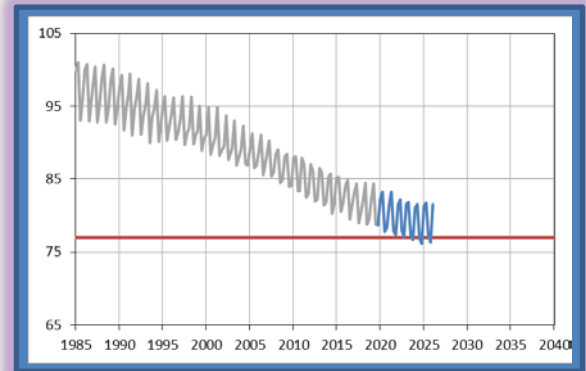
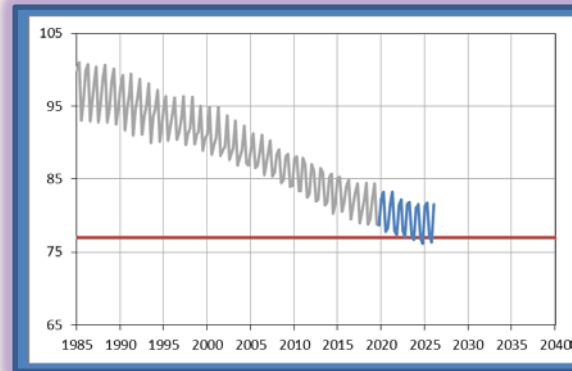
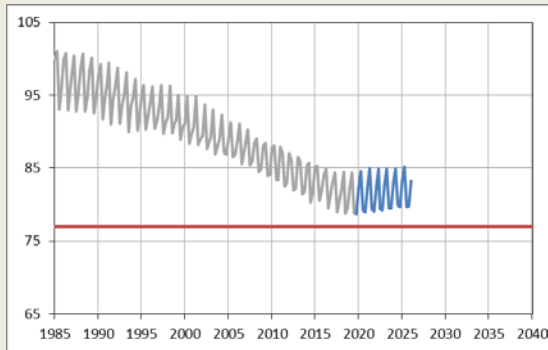
- 8 minimum thresholds (MT) established
- GSA decides that 3 MT exceedances = undesirable result



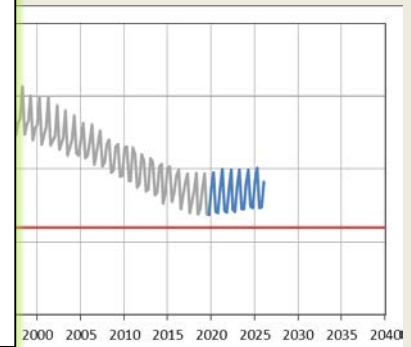
Example – Scenario 1



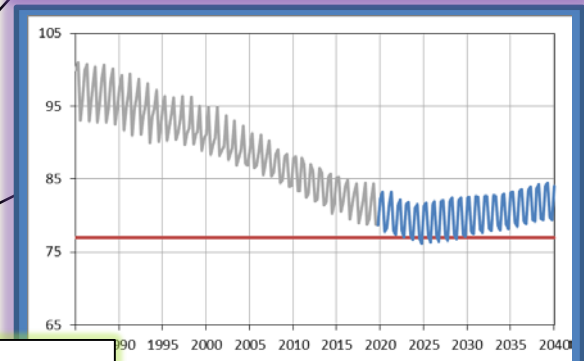
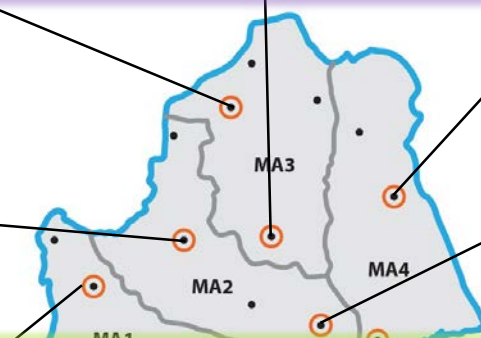
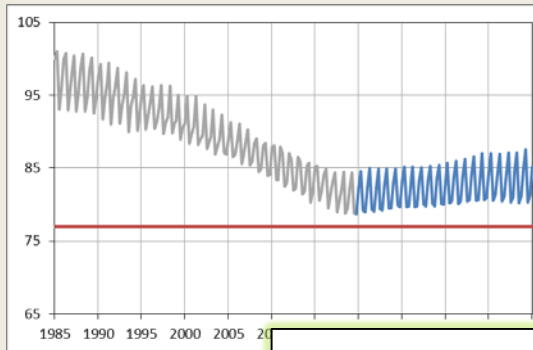
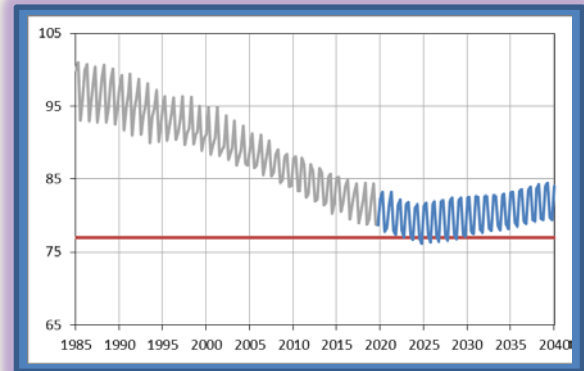
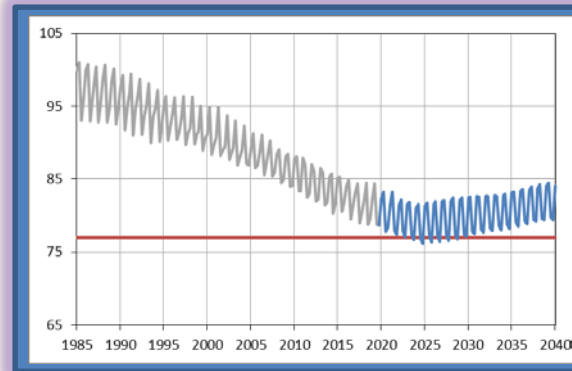
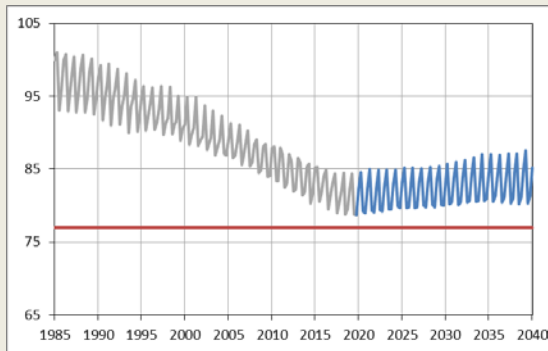
Example – Scenario 2



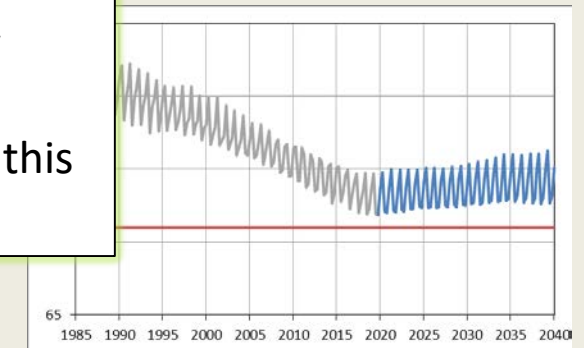
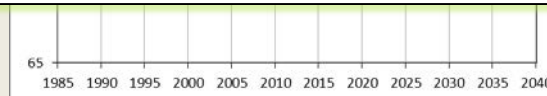
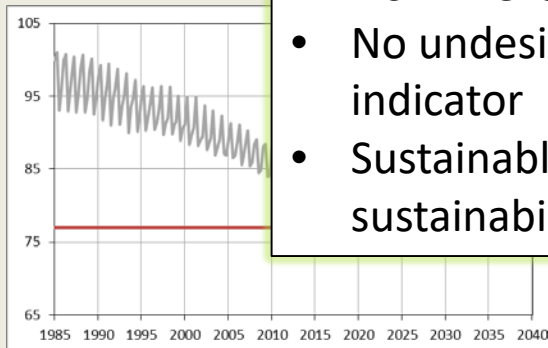
- Three wells with MT exceedances after 5 years
- Undesirable result for this sustainability indicator
- If not planned (i.e., through appropriate interim milestones and measurable objectives) could indicate that sustainable groundwater management is not likely to be achieved
- GSA should address in 5-year update



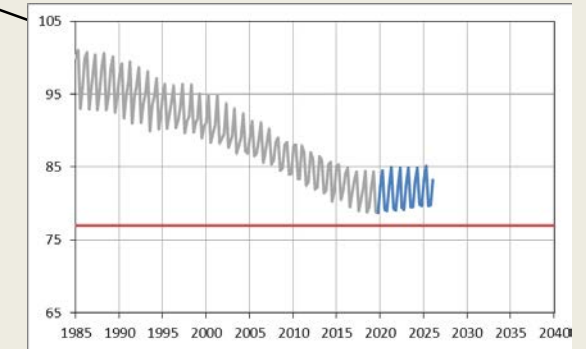
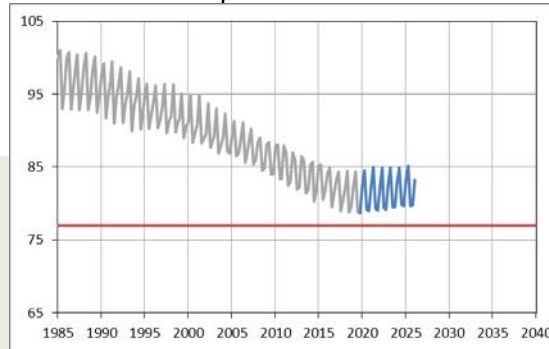
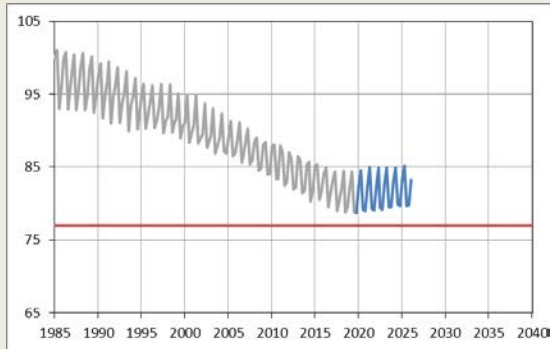
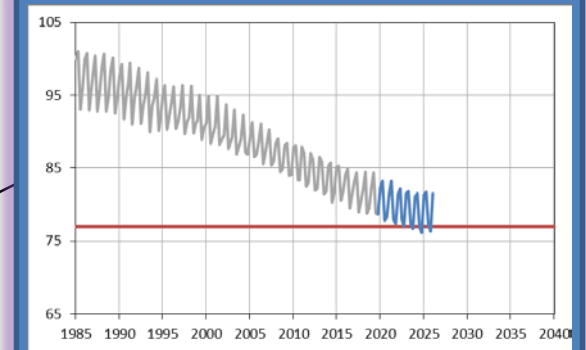
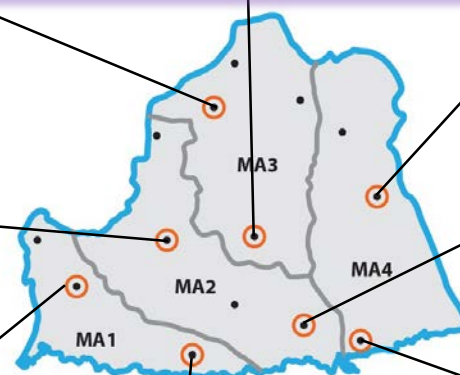
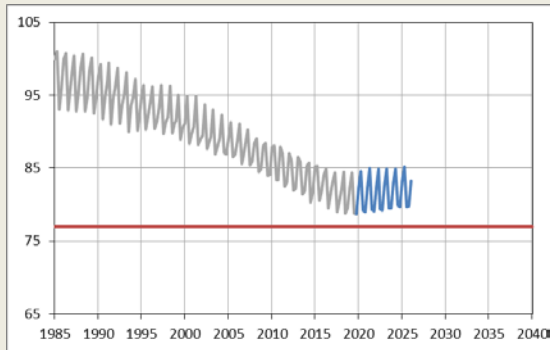
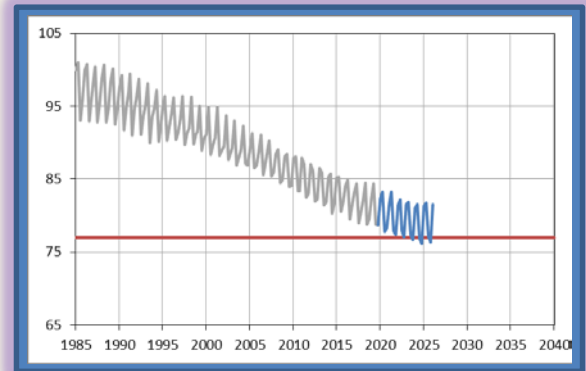
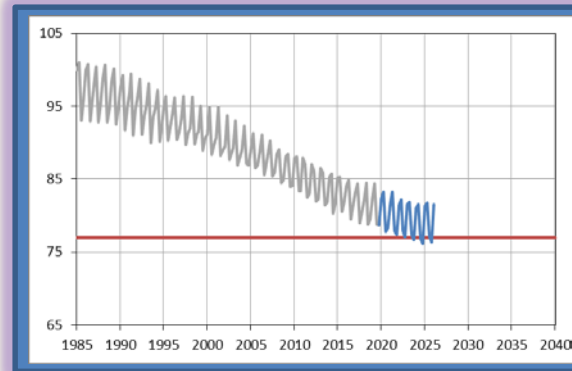
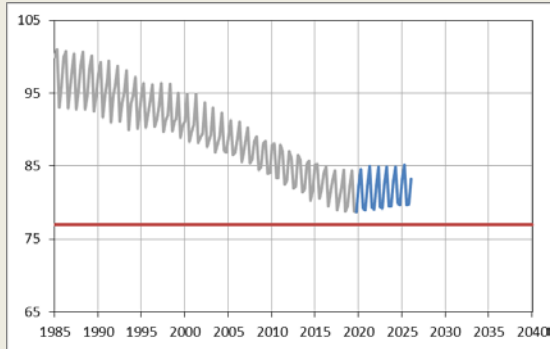
Example – Scenario 2



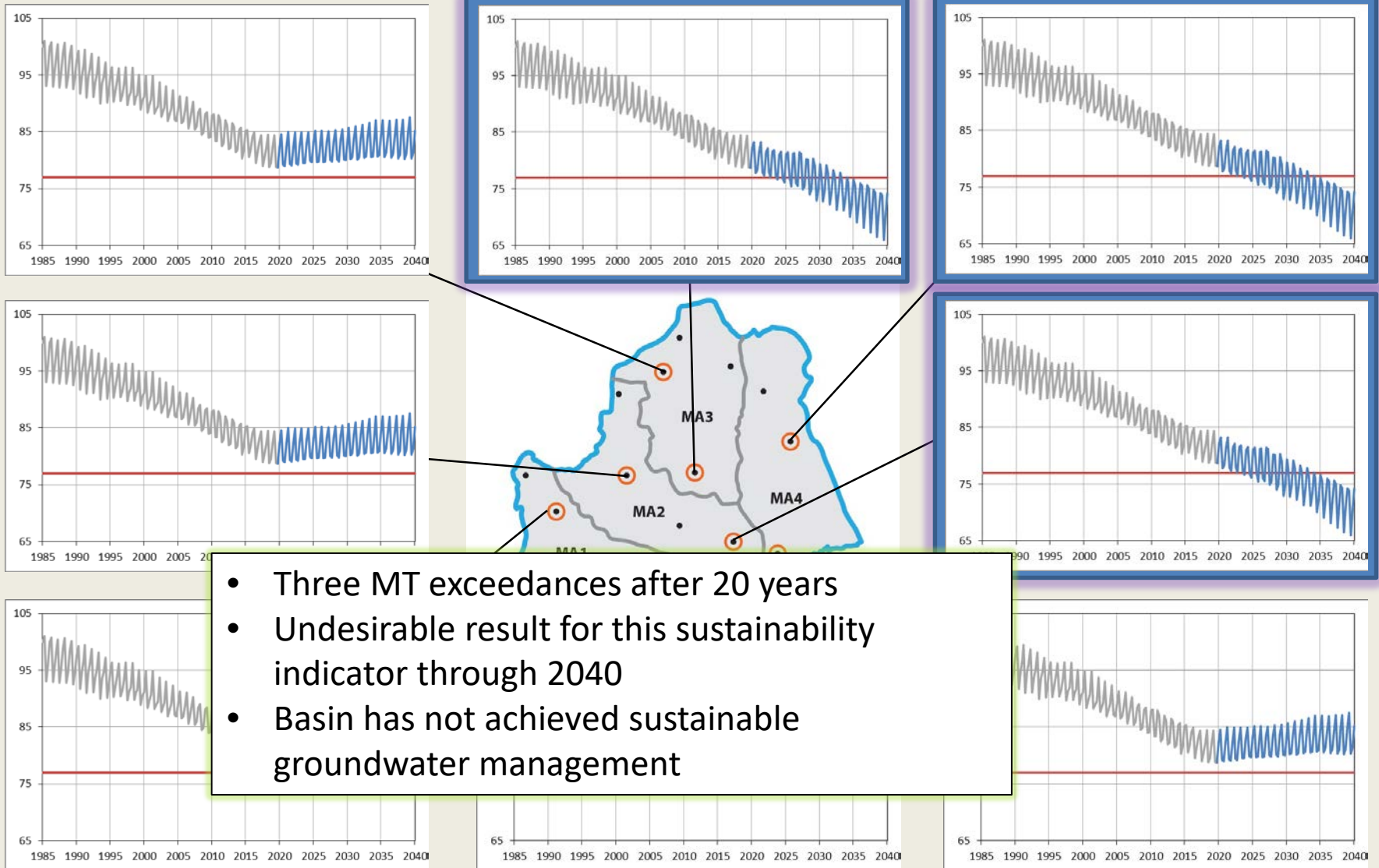
- No MT exceedances after 20 years
- No undesirable result for this sustainability indicator
- Sustainable groundwater management for this sustainability indicator



Example – Scenario 3



Example – Scenario 3



DWR Groundwater Resources

- Tim Ross

Timothy.Ross@water.ca.gov

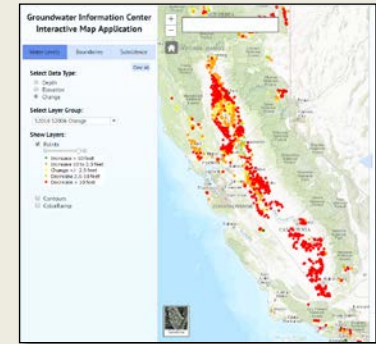
Groundwater Resources

- DWR Groundwater Information Center

www.water.ca.gov/groundwater/gwinfo/index.cfm

- SGMA Data, Tools, And Reports (links to mapping tools)

http://www.water.ca.gov/groundwater/sgm/data_tools_reports.cfm



Best Management Practices and Guidance Documents

<http://www.water.ca.gov/groundwater/sgm/bmps.cfm>



Thank You

