

Sustainable Management Criteria Definitions, Examples, and Ideas

SVBGSA Subbasin Committees Workshop

July 28, 2020



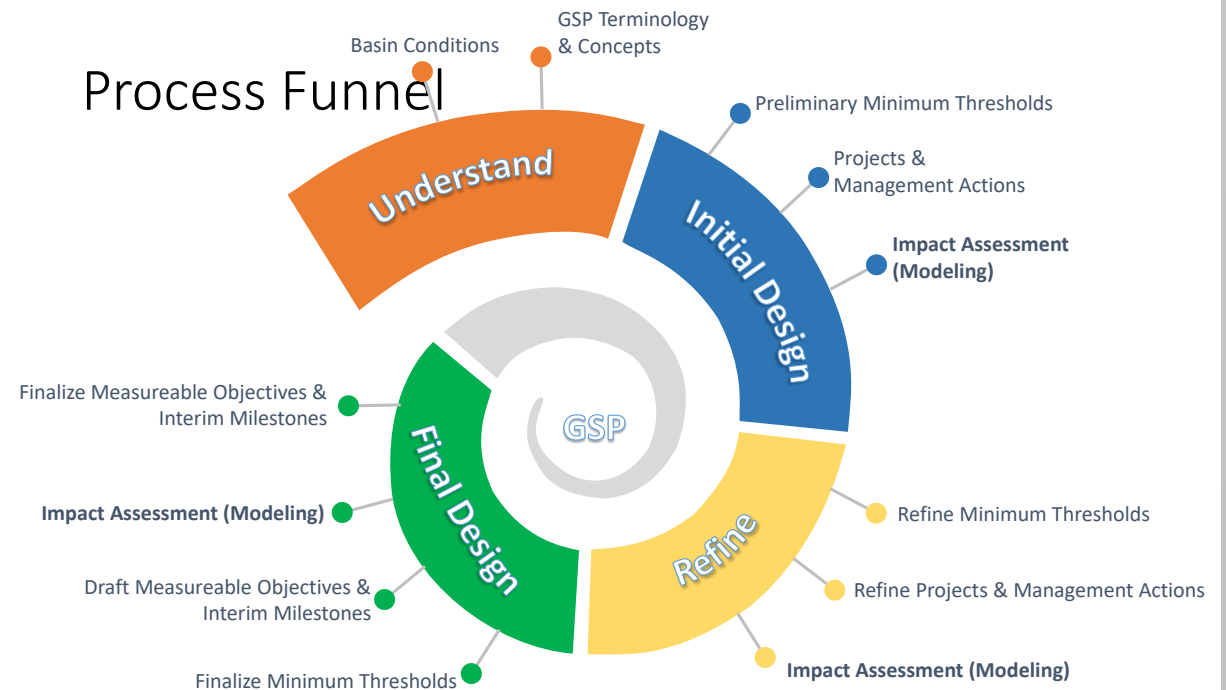


Topics

- What are Sustainability Goal, Minimum Thresholds, Measurable Objectives and Interim Milestones?
- Examples
- How all terms link together
- Important ideas about timing of Undesirable Results

Setting minimum thresholds, measurable objectives, and undesirable results is not a linear process

- Setting criteria will be clearer when you understand the entire process



What are SMC Components?

► Sustainability Goal

Descriptive



Lowering
GW Levels



Seawater
Intrusion



Reduction
of Storage



Degraded
Quality



Land
Subsidence



Surface Water
Depletion

Six Sustainability Indicators

► Significant and Unreasonable

Descriptive

► Minimum Threshold

► Undesirable Result (descriptive and numeric)

► Measurable Objective

► Interim Milestones

Numeric



Sustainability Goal

➤ Three parts

1. Statement of goal (mom and apple pie)
2. Measures that will be implemented to ensure that the basin will be operated within its sustainable yield (projects and actions)
3. An explanation of how the sustainability goal is likely to be achieved within 20 years (expected outcomes)

Parts two and three can only be written after you establish your projects and actions

Each of the Six Sustainability Indicators have Five Associated Sustainability Management Criteria Terms



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- Significant and Unreasonable
 - Minimum Thresholds
 - Undesirable Results
 - Measurable Objectives
 - Interim Milestones



Significant & Unreasonable

WHAT WE WANT TO AVOID

- ▶ Groundwater Sustainability Agencies (GSAs) must consider and document the conditions [that are] **significant and unreasonable**
- ▶ Descriptive or qualitative statement that is the basis for Minimum Thresholds and Undesirable Results



Significant & Unreasonable Examples

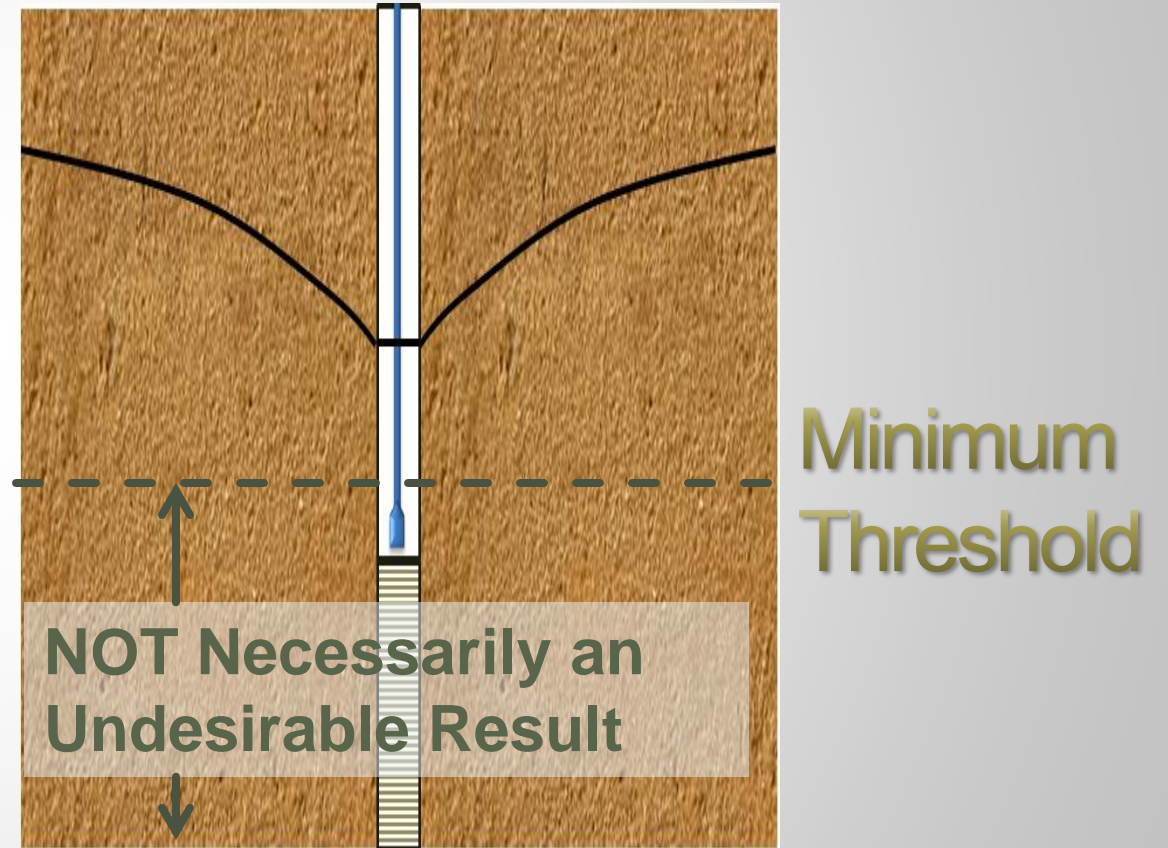
WHAT WE WANT TO AVOID

- ▶ Groundwater Elevations below the pump in my well is significant and unreasonable
- ▶ Groundwater elevations in 1977, 2014, 2015, and 2016 were significant and unreasonable
- ▶ Pumping more groundwater than available (exceeding the sustainable yield) is significant and unreasonable
- ▶ Any subsidence is significant and unreasonable



Minimum Threshold

- Quantitative value that is used to define what is significant and unreasonable
- Set at each representative monitoring point (well)
- Set for each of the six sustainability indicators



Minimum Thresholds based on what is Significant and Unreasonable



Additional Minimum Threshold Examples

Subsidence

- ▶ The minimum threshold is zero subsidence
 - ▶ Any subsidence is significant and unreasonable

Groundwater in Storage

- ▶ The minimum threshold is the estimated sustainable yield of XXXX acre-feet/year
 - ▶ Pumping more than our sustainable yield is significant and unreasonable



Undesirable Results


*“The description of undesirable results ... shall be based on a quantitative description of the **combination of minimum threshold exceedances** that cause significant and unreasonable effects in the basin.”*

Avoiding Undesirable Results is how you prove sustainability

Six sentences in each GSP define sustainability



Undesirable Results are a Combination of Minimum Thresholds

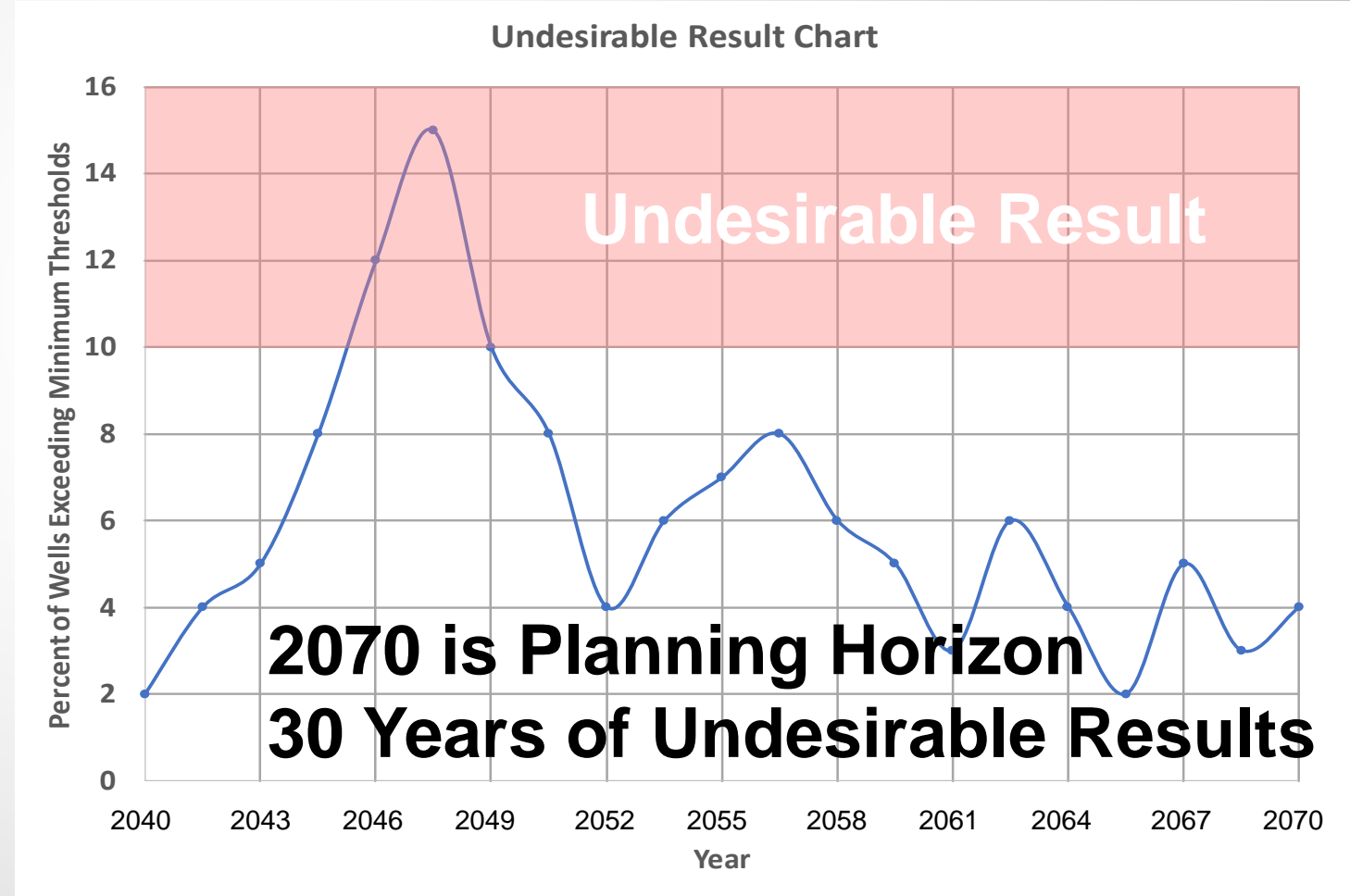
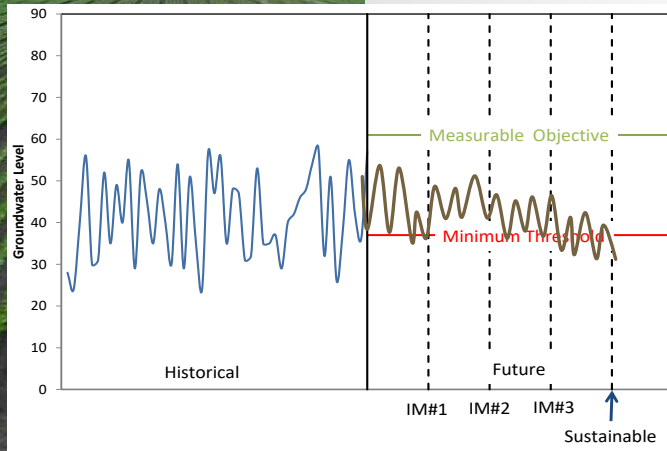
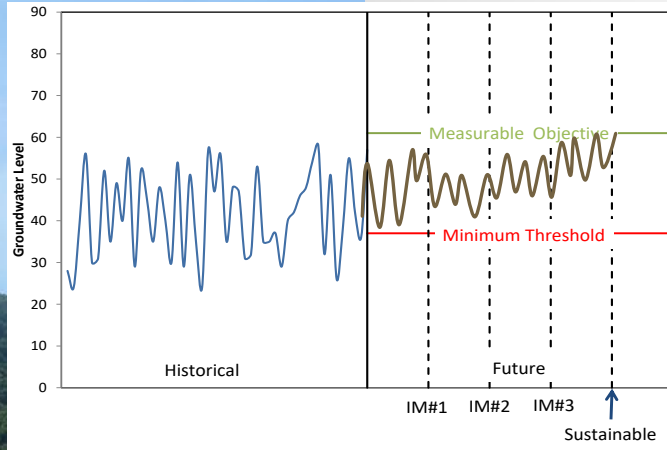


Example 1: An undesirable result occurs when 10% of your groundwater elevations, measured at Representative Monitoring Sites, drop below the associated Minimum Thresholds

This might be an example definition of Undesirable Results for groundwater levels


How you define Undesirable Results is how you can accommodate flexibility

Example: GSP Adopted in 2020, Achieve Sustainability by 2040





Undesirable Results are a Combination of Minimum Thresholds

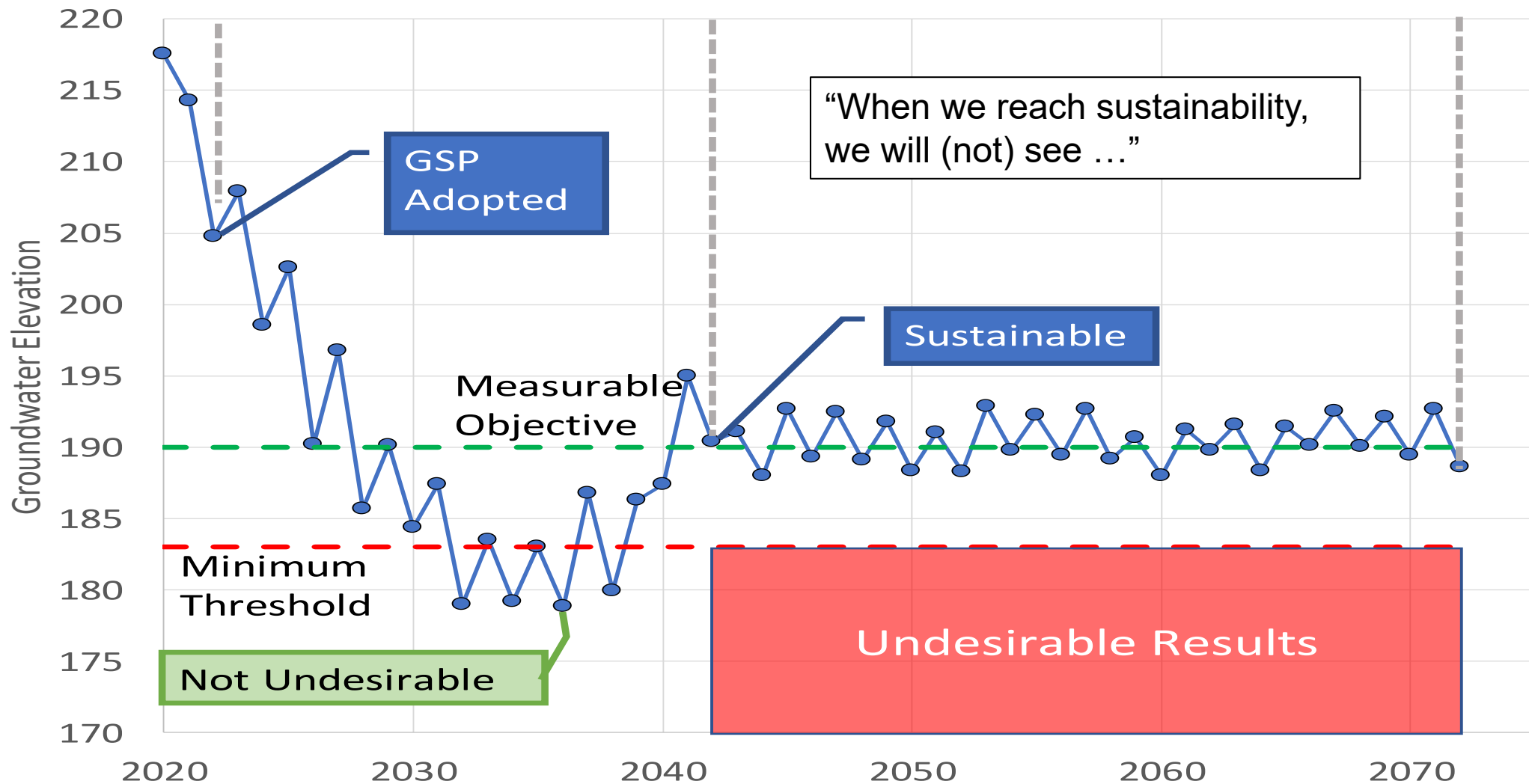


Example 2: An undesirable result occurs when groundwater elevations at any single Representative Monitoring Point drops below the associated Minimum Thresholds

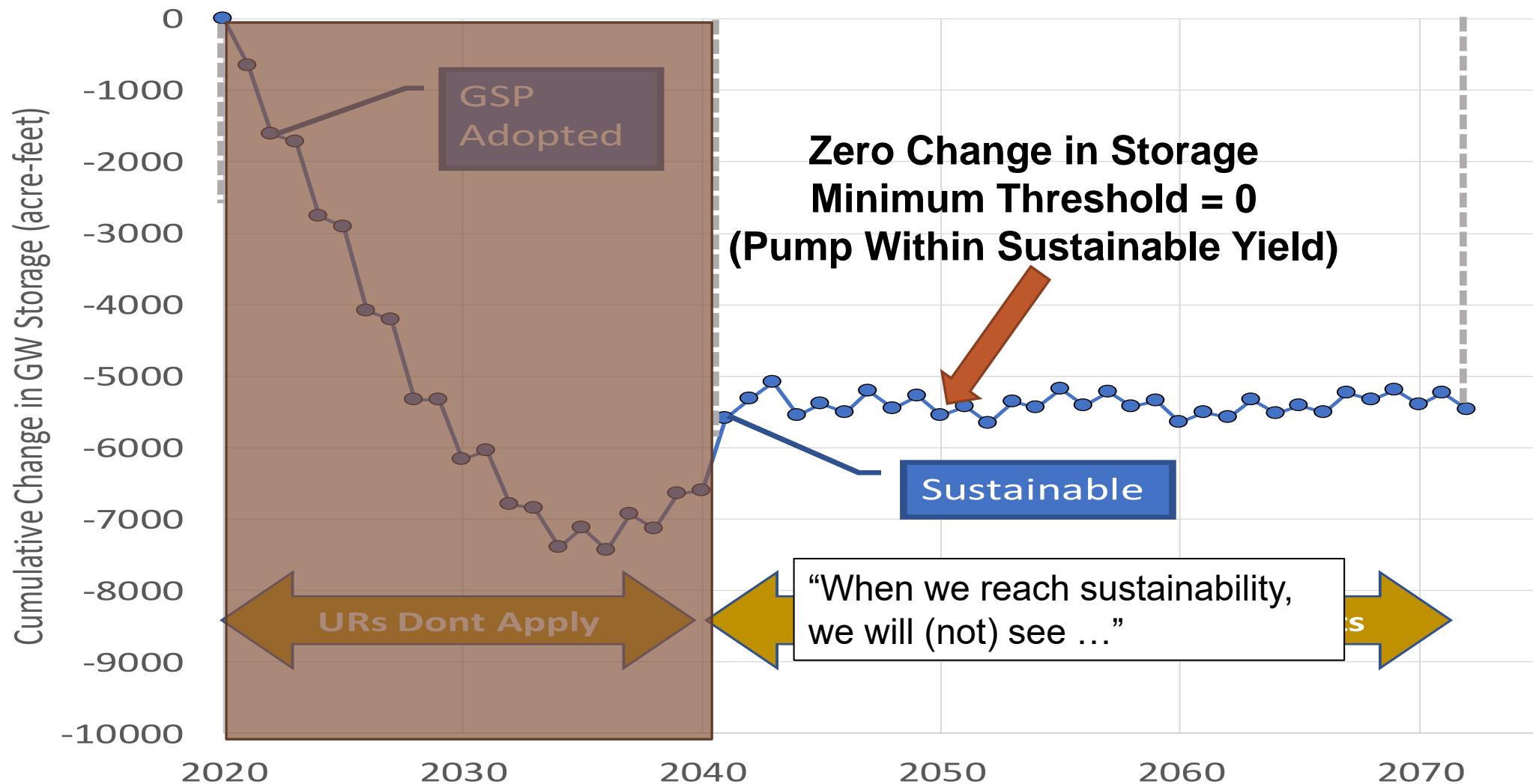
This might be an example definition of Undesirable Results for Subsidence

Results are Only Undesirable After 2042

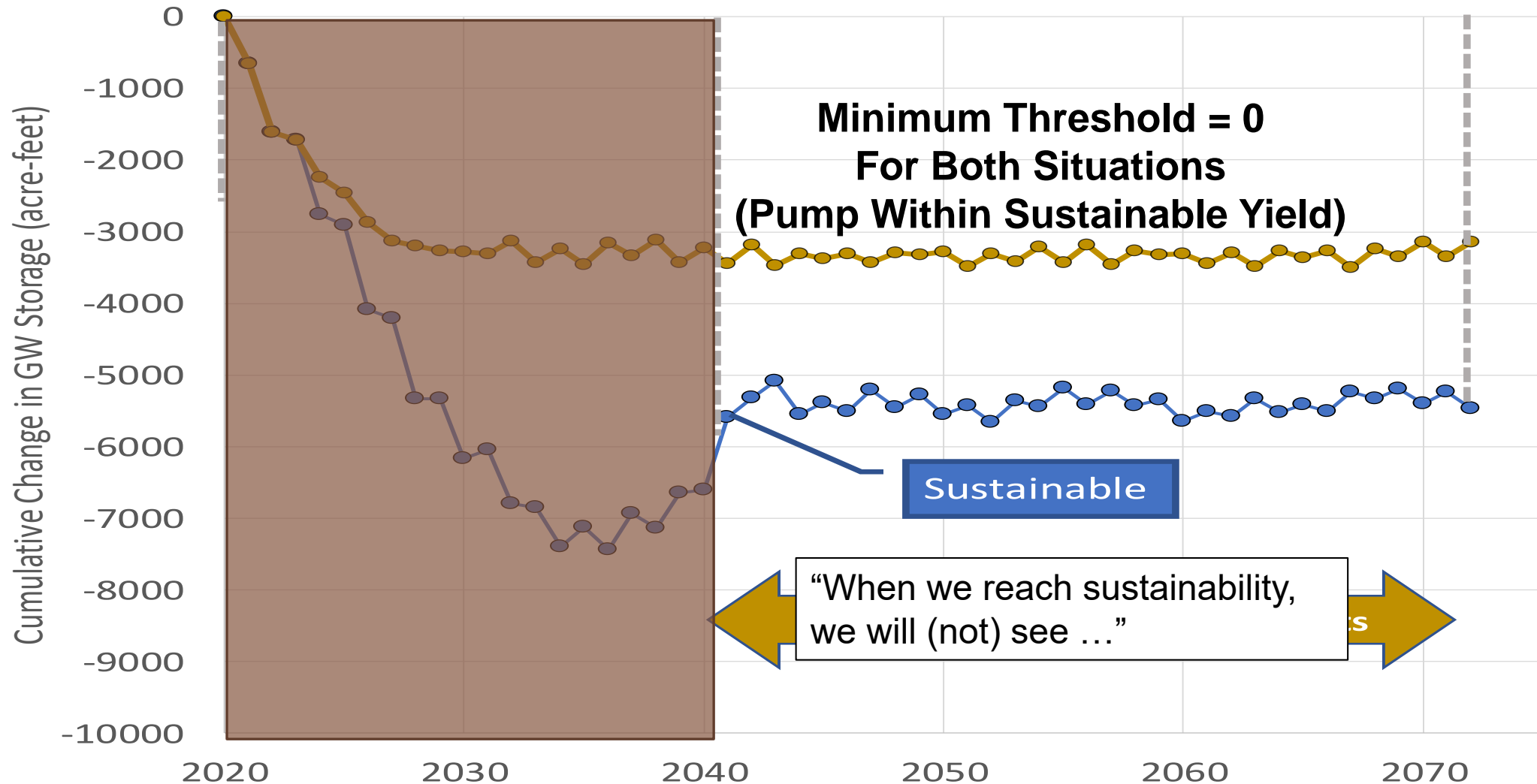
Groundwater Levels



Results are Only Undesirable After 2042 Groundwater Storage



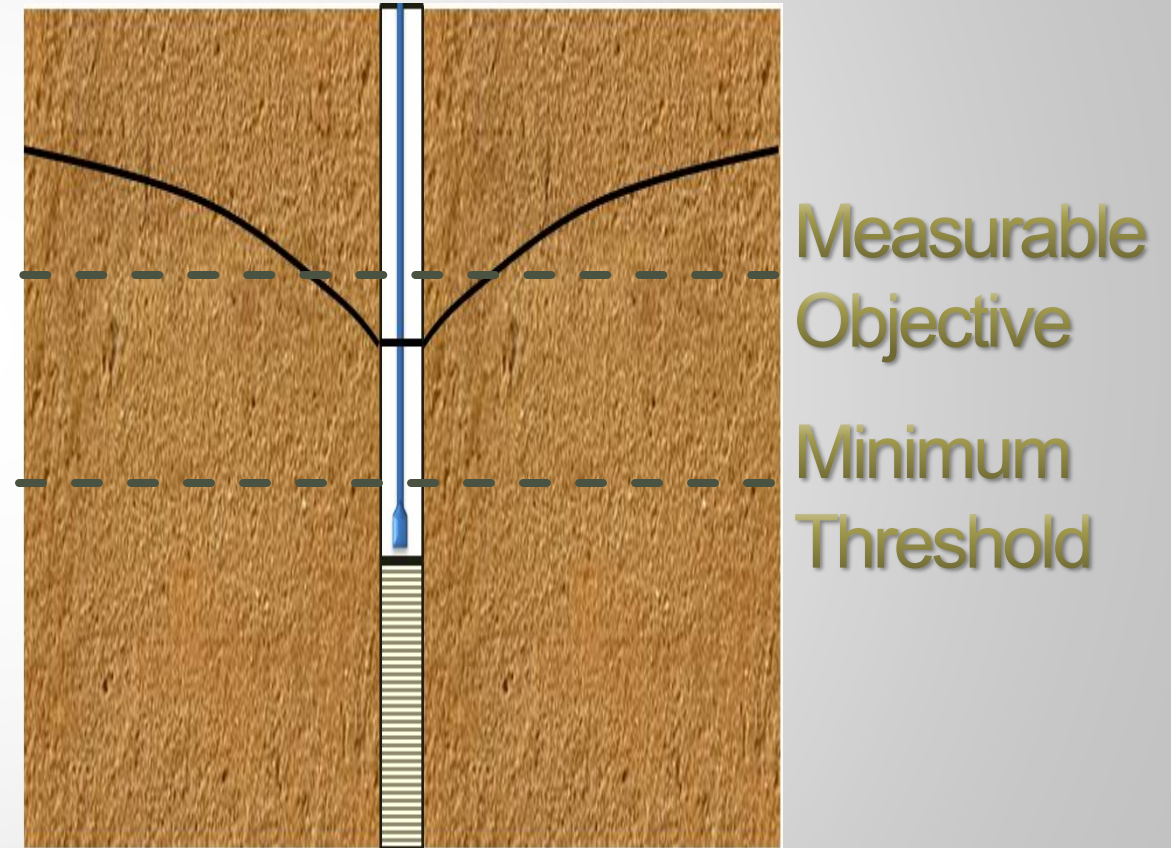
Results are Only Undesirable After 2042 Groundwater Storage



Measurable Objective

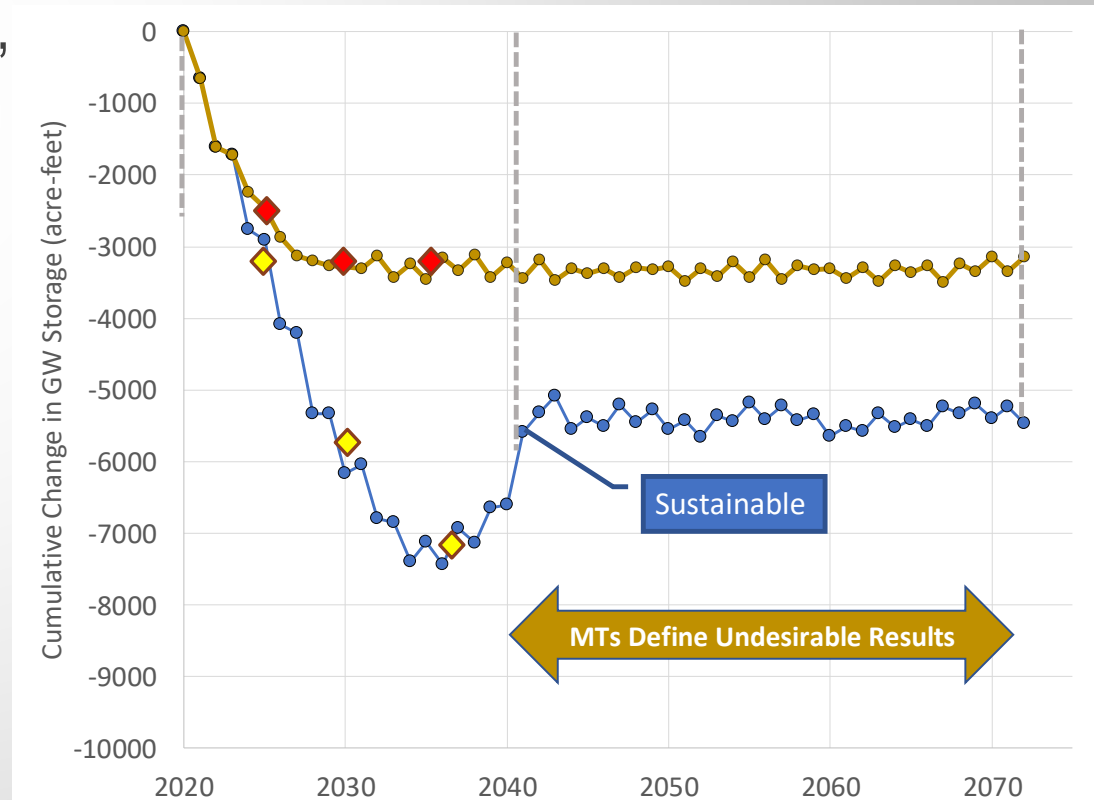
Think of Measurable Objectives as safety factors to accommodate droughts

- Quantitative target or goal that allows operational flexibility above the Minimum Threshold
- Set at each Representative Monitoring Point (well)
- Set for each sustainability indicator
- Must be set in the plan, but are NOT enforceable as a measure of sustainability

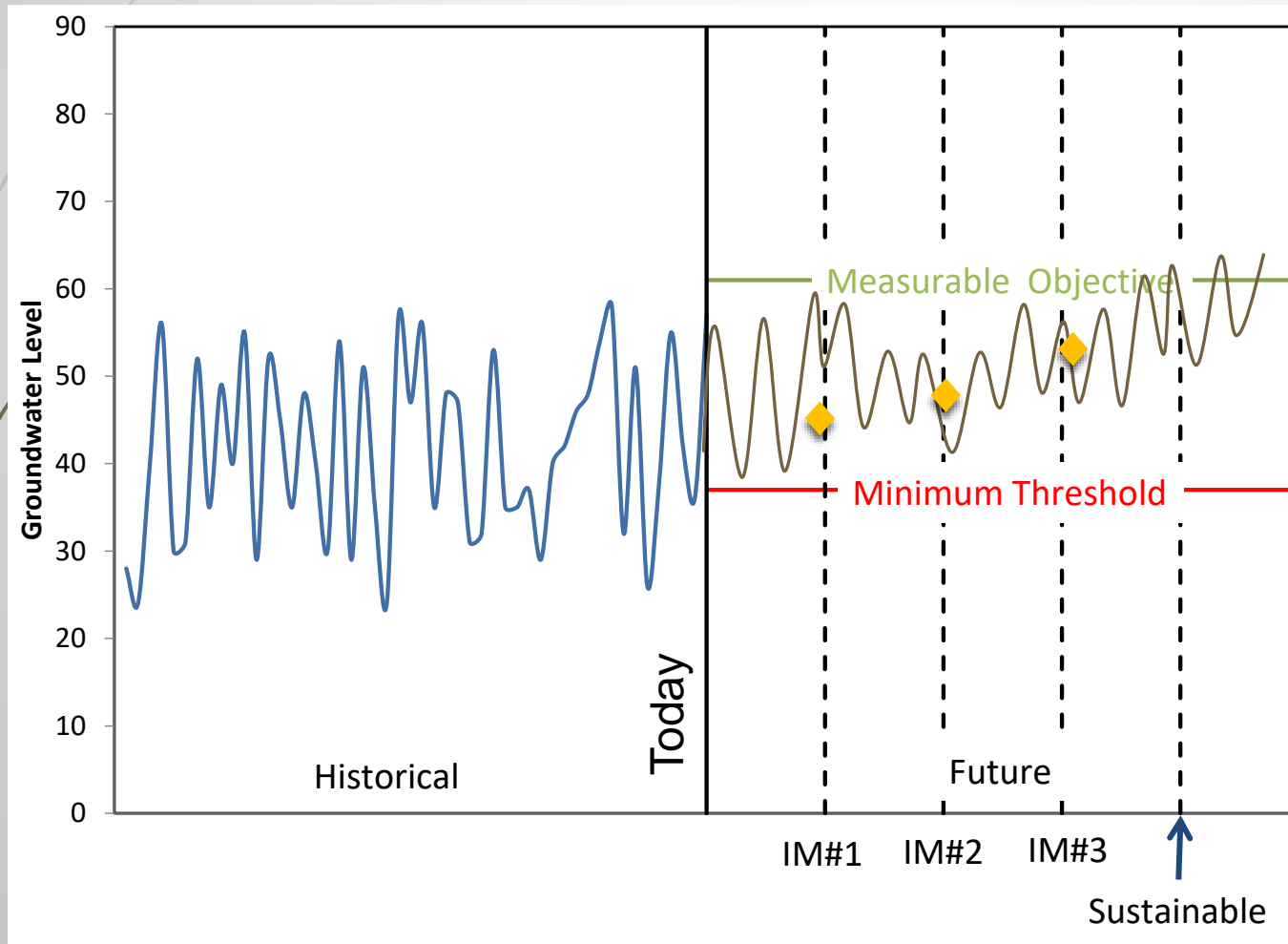


Interim Milestones

- ▶ Five-year markers showing progress towards Measurable Objectives
- ▶ Account for planning time, CEQA, etc.
- ▶ Only set after you understand the projects and actions you will adopt



Combining Minimum Thresholds, Interim Milestones, and Measurable Objectives at a Single Well



**Maintain Sustainability for
next 30 years**

Process Funnel

ALL LINKED

**Significant and Unreasonable
Minimum Thresholds
Undesirable Results
Measurable Objectives
Interim Milestones**



Questions

