

Minimum Thresholds and Measureable Objectives

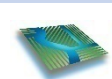
Greg Young, Tully & Young

Stephanie Anagnoson, Madera County

Setting Minimum Thresholds for Groundwater Levels

- Primary factors considered:
 - Existing beneficial uses
 - Drinking water (private wells, small community, etc.)
 - Irrigation
 - Environment
 - Human right to water (AB 685)
 - Importance of agriculture to County economy
- GSAs recognize inter-connection of these factors
- GSAs need time to transition and complete projects and actions – the time required will result in lower groundwater levels during implementation
- Discussing mitigation for impacts can address concerns of lowered groundwater levels during implementation

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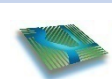
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Method used for Groundwater Level Minimum Thresholds

- Using the groundwater model:
 - Prepare hydrographs of expected future conditions at various wells...with planned projects and actions
 - Use “average” hydrology for 2020 through 2040
 - Removes extreme impacts from starting wet or dry
 - Use 1965-2015 to represent 2041 through 2090
- Follow steps and adjustments for each representative monitoring well
 - Create artificial '10-year drought'
 - Check against lowest point during implementation and sustainability
 - Evaluate potential impact to drinking wells and develop mitigation

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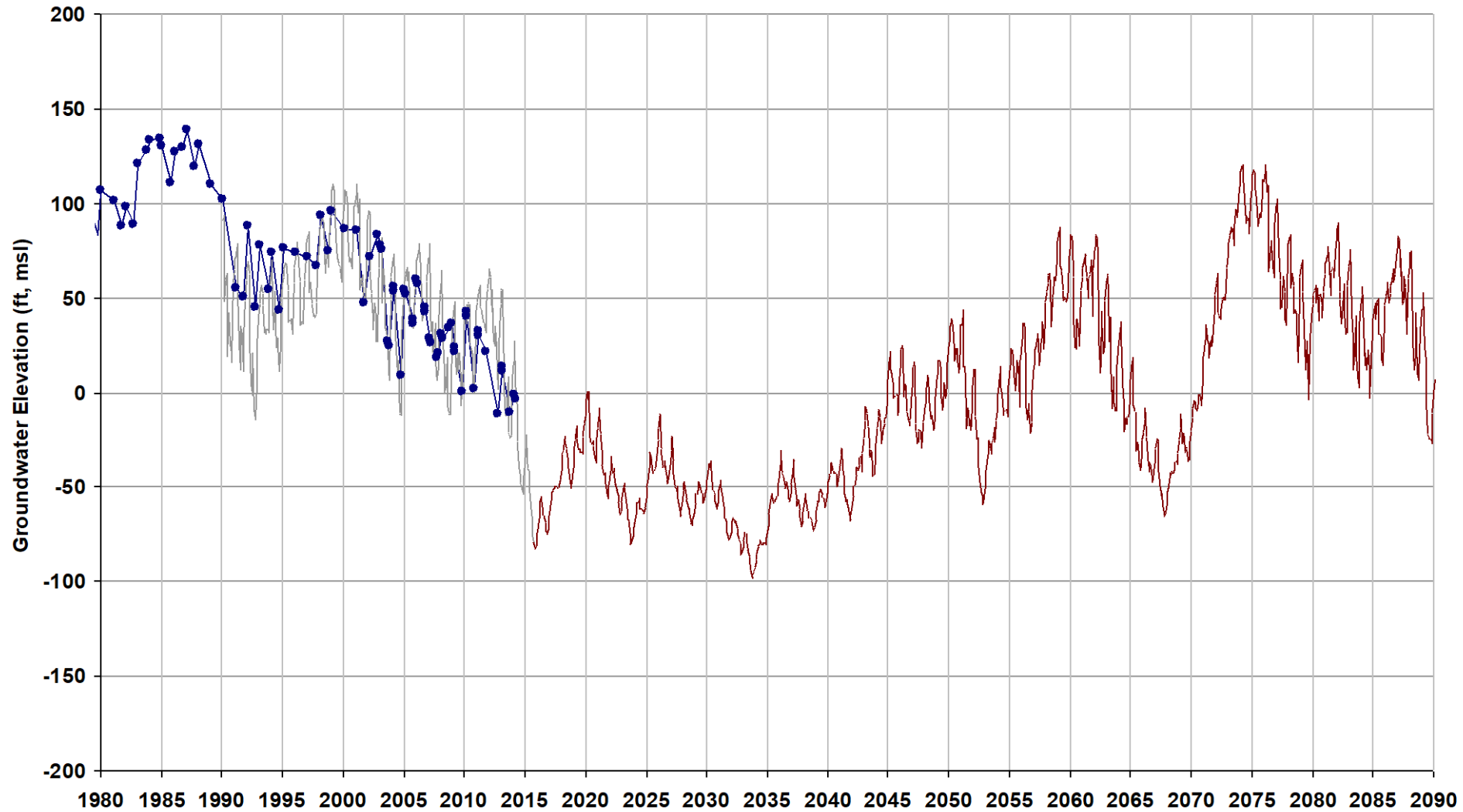
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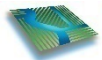
Madera Subbasin Technical Workshop

May 29, 2019

Step 1: plot measured and modeled results



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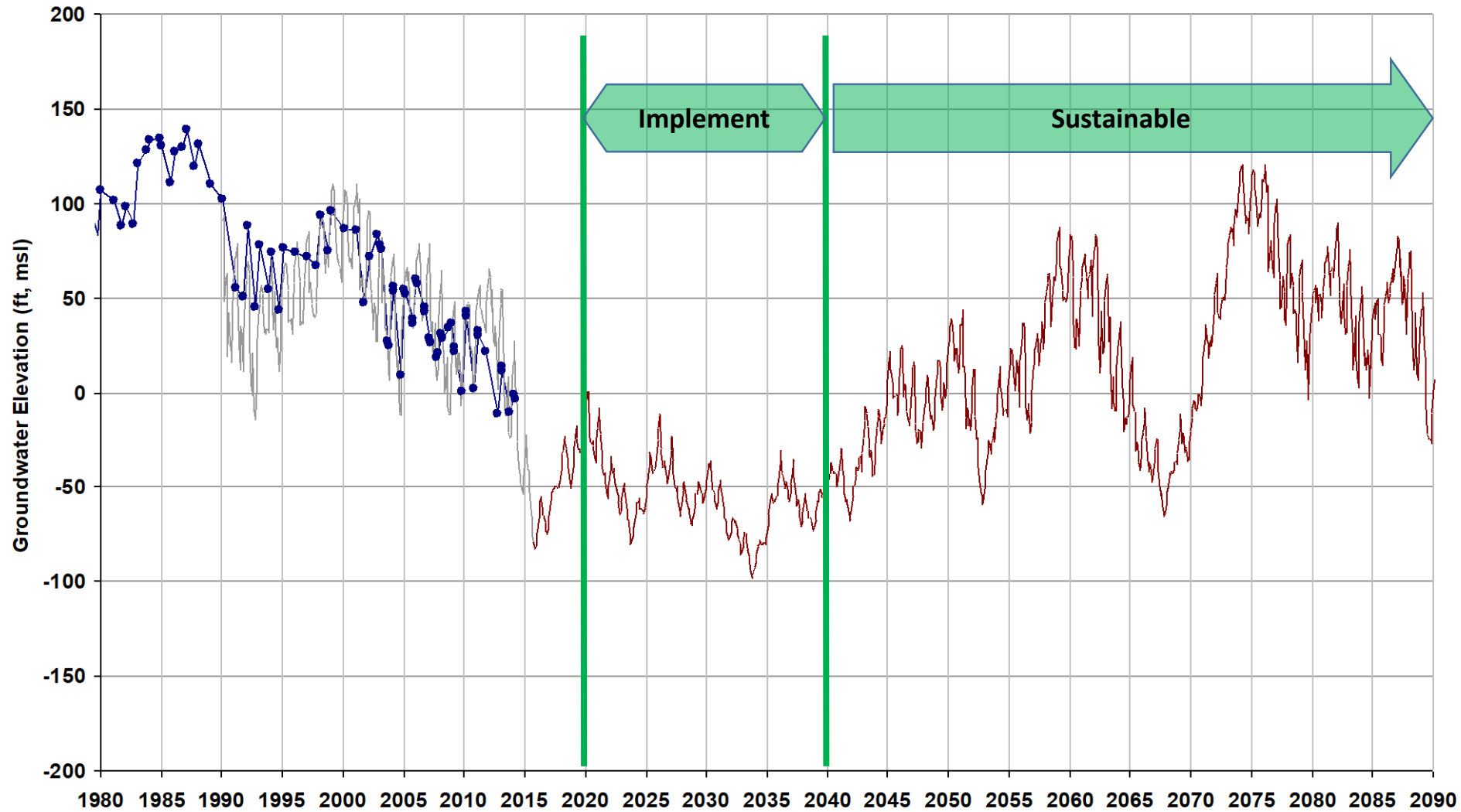


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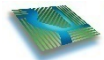
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Step 2: Show 'implementation' and 'sustainability' periods



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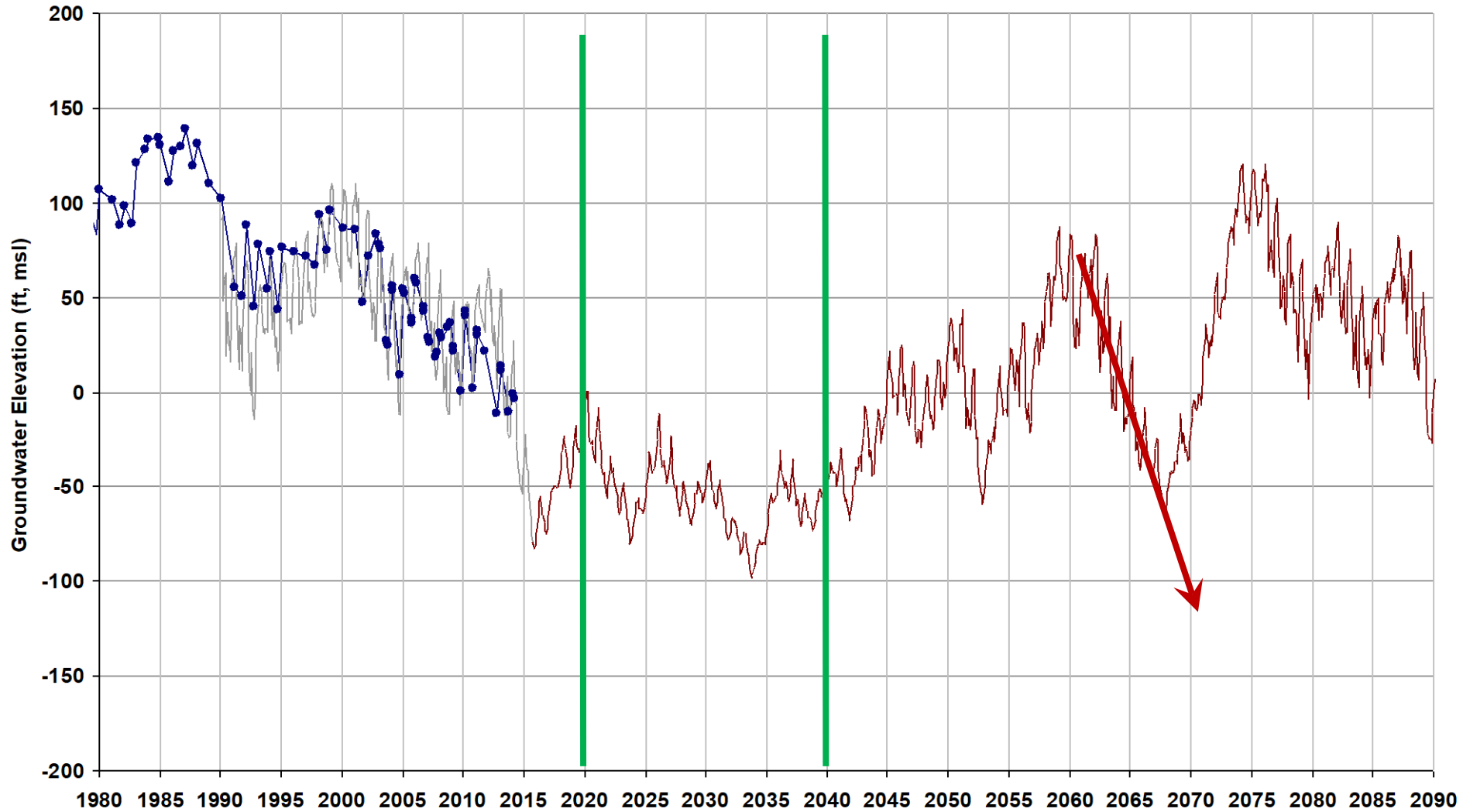


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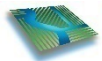
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Step 3: Extend 2060's drought



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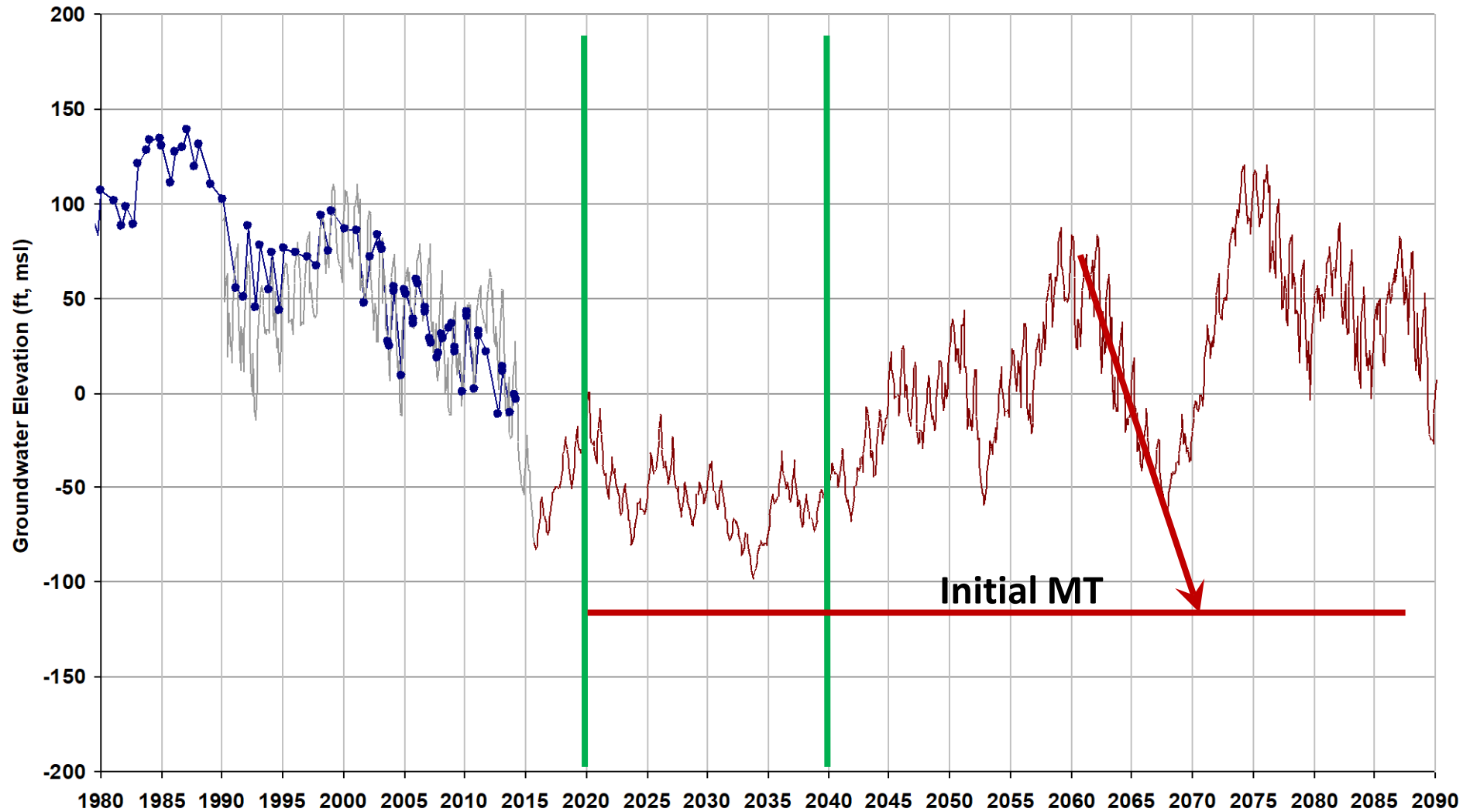


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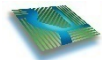
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Step 4: Draw initial Minimum Threshold (MT) level at base of extended drought



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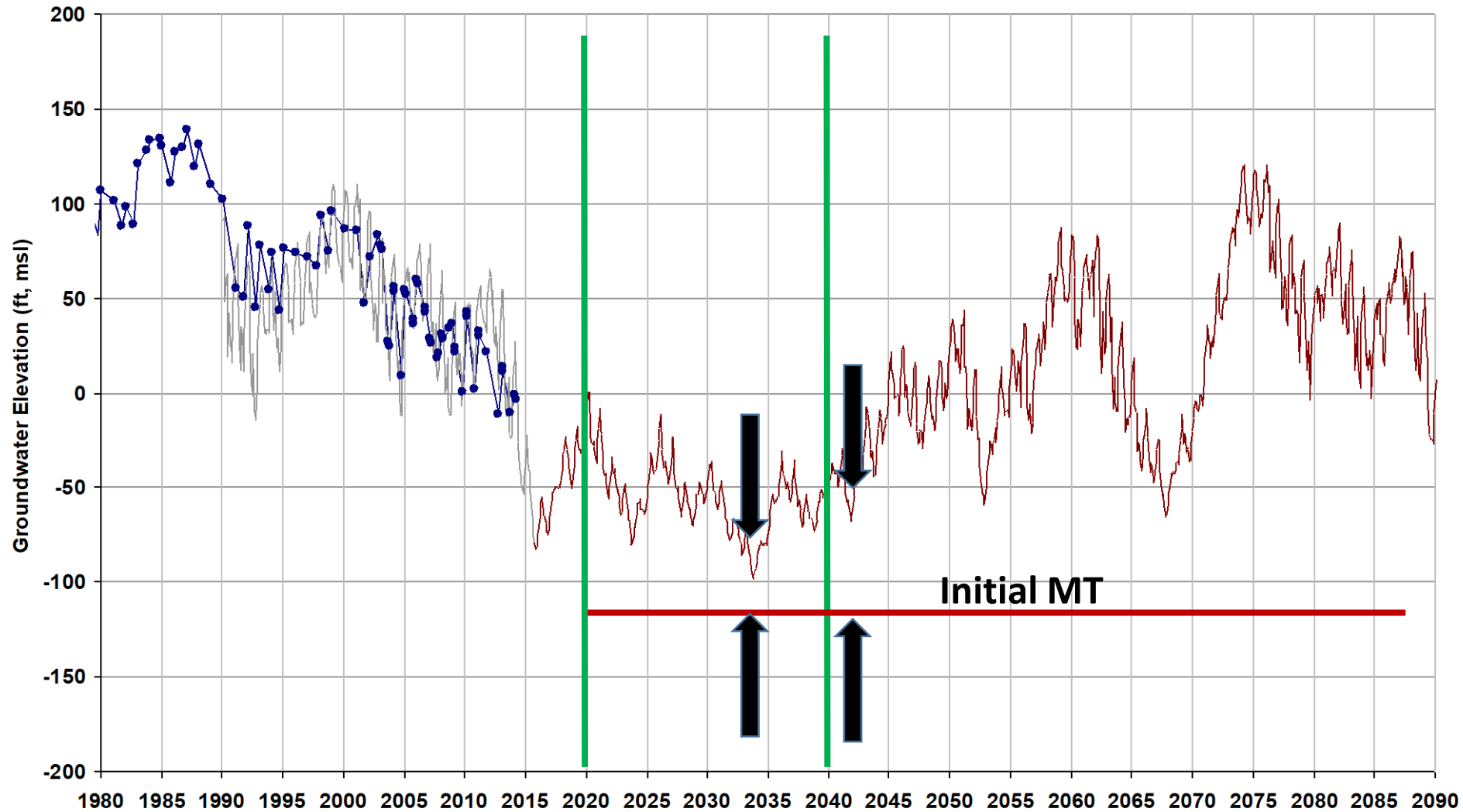


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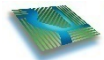
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Step 5: Check if below lowest point during implementation and sustainability periods; adjust downward if necessary



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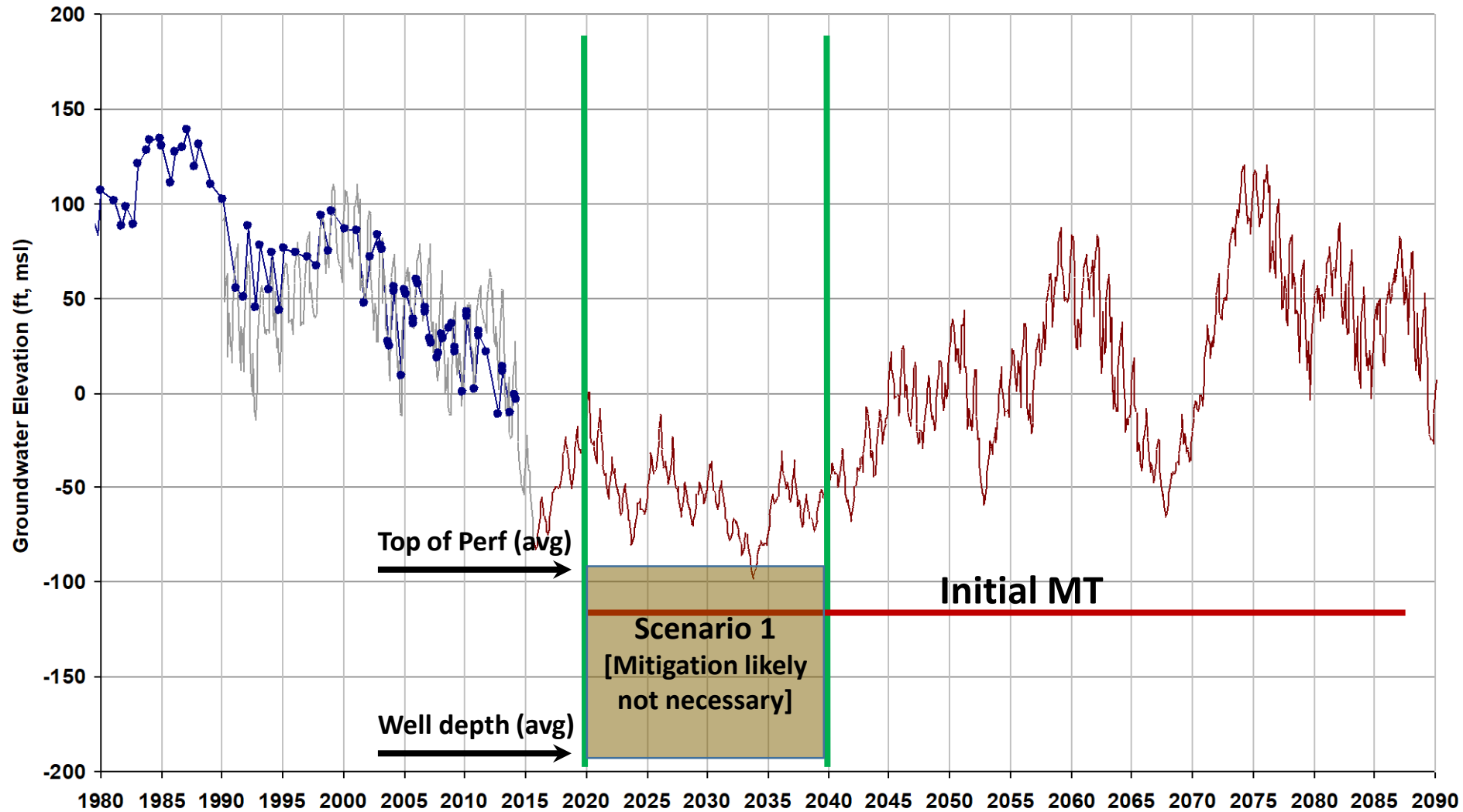


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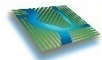
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Step 6: Assess local drinking water well information for potential impact; plan for mitigation where Minimum Threshold is lower



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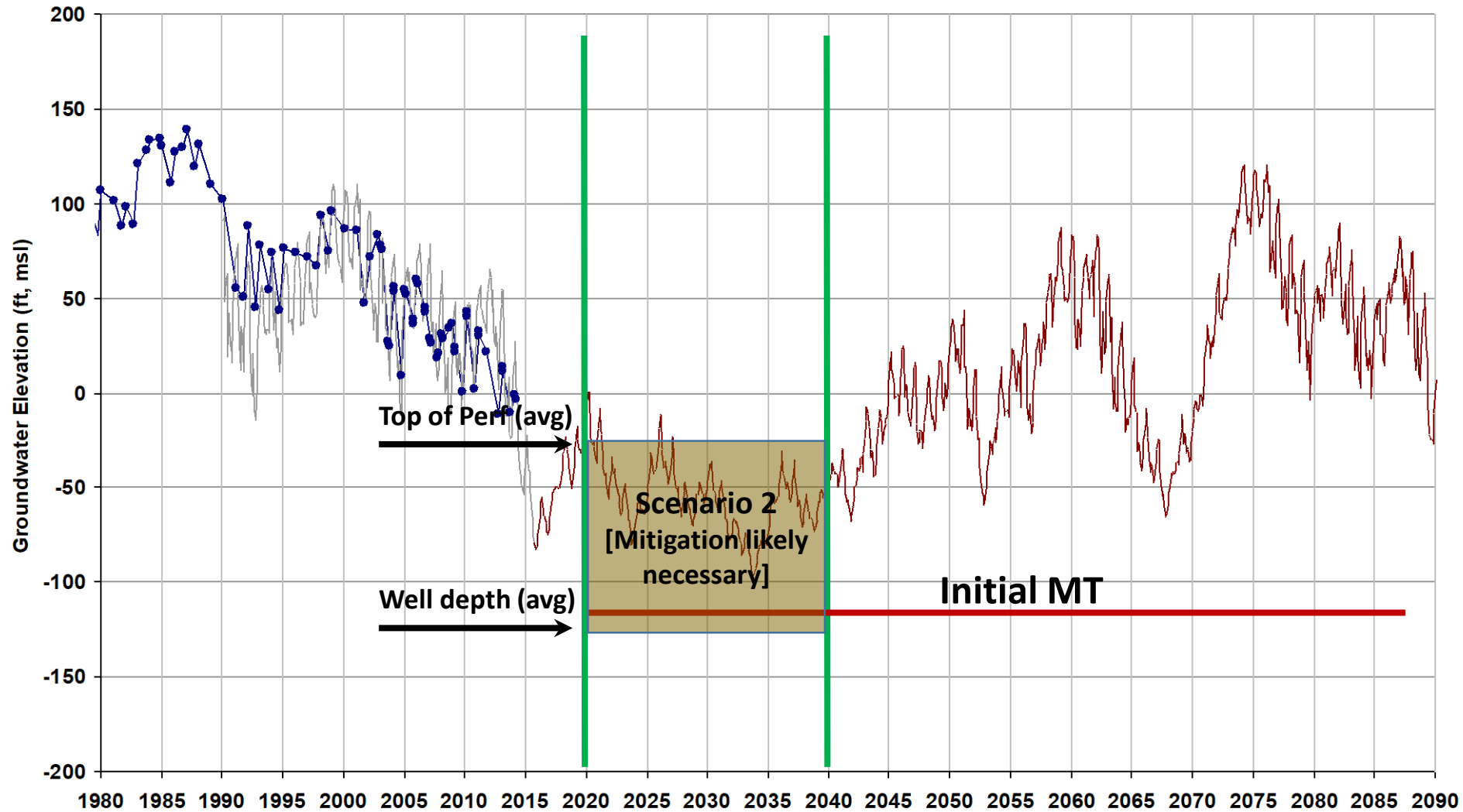
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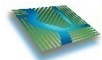
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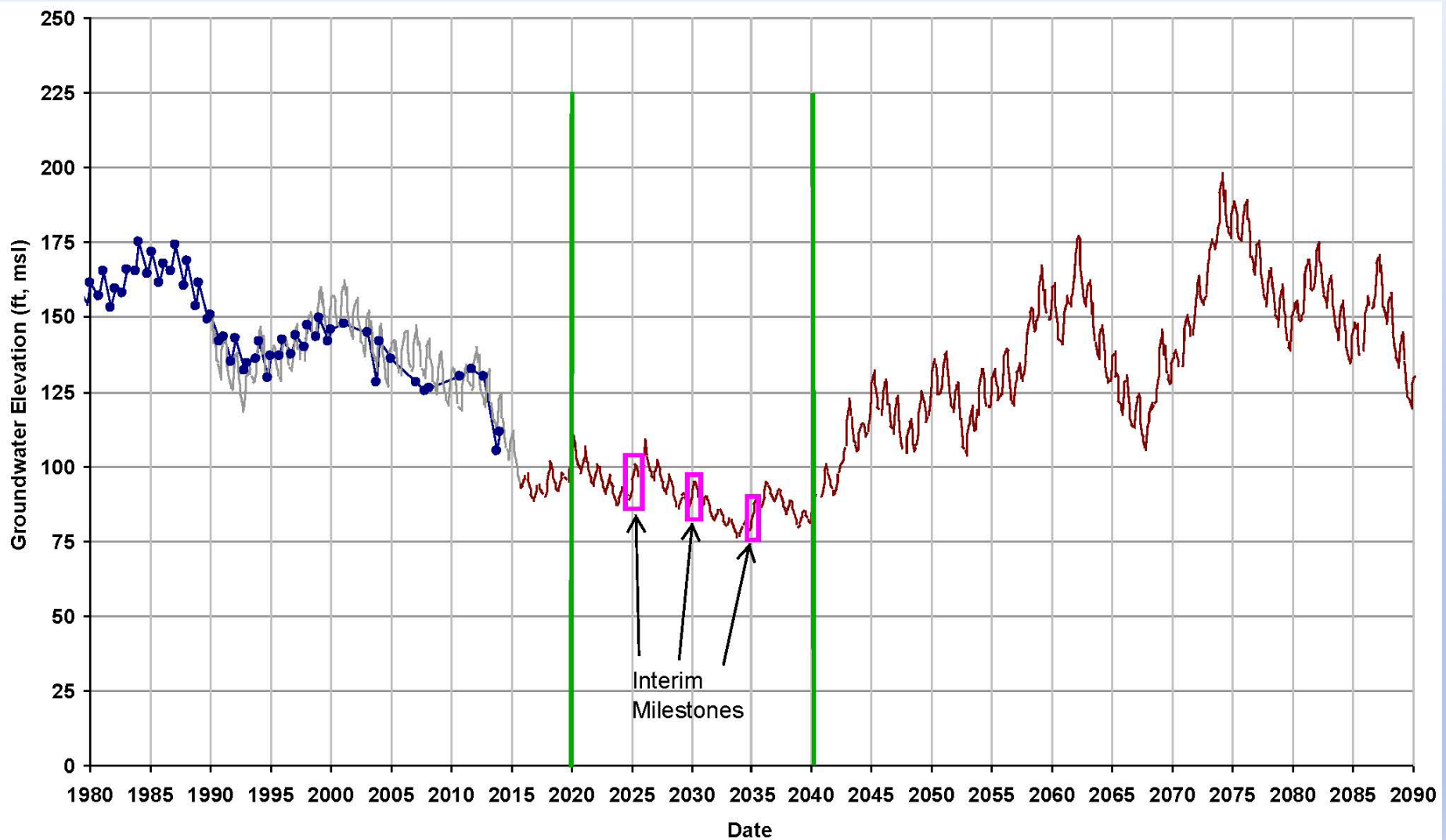


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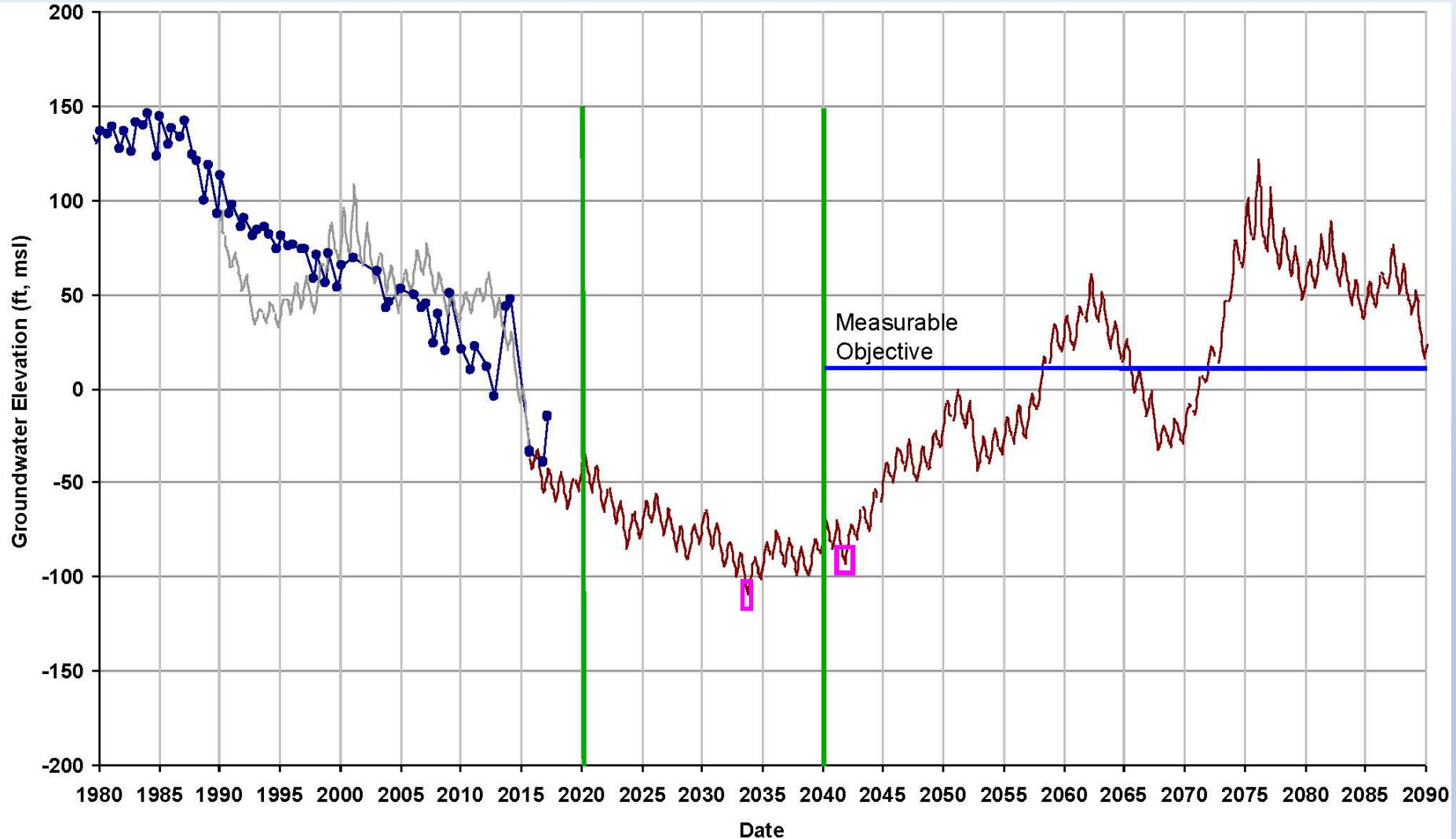


Interim Milestones: GW Levels



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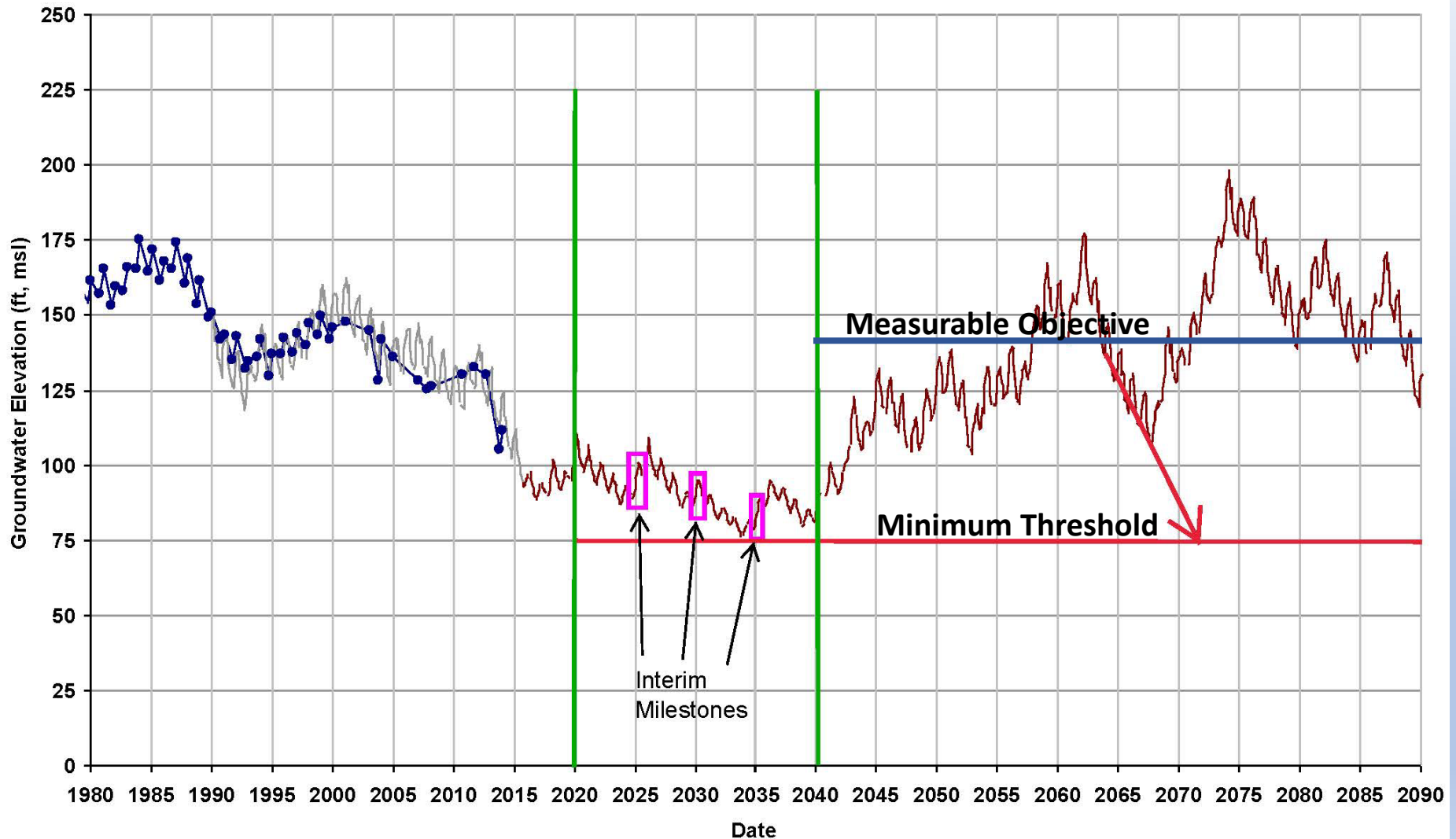
Measurable Objective: GW Levels



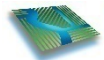
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Putting them all together – GW Levels



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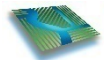
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Questions

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