San Mateo Plain Groundwater Basin Assessment Stakeholder Workshop #1

STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin

Think about the potential issues facing the basin and how they might be mitigated. Think about the potential opportunities and how they might be realized. Blanks are provided for additional potential issues and opportunities.

Potential Issues	Potential Mitigation
Lack of Data / Understanding	Sources: CalWater, Cities/County Service Areas, Athenson ... SCVWD/SFPUC* Coast. Sites/ USGS Stanford Caltrans DWR * NEW DATA Pumping Test Lake well Historical Societies
Climate Change Threats/ Need for Increased Resilience	Data - GW Elevation, Quality (SWI) Review Projections Sentry wells / Injection wells USACOE SFO Private wells? Study Plans SF Creek JPA - expand? Levees? San Carlos Airport
Long-term Sustainable Management (e.g., preventing "undesirable results" such as subsidence and sea water intrusion)	Safe Yield Sustainable Pumping threshold? ↕ water lev. thresholds Geographic Zones Emergency Short-term vs. Long-term use
Resource Protection (e.g., water quality, recharge, etc.)	Mitigation Projects - Recharge Injection Recharge Planning MW/PW Well Pumping - Registrations Restrictions

Erler & Kalinowski, Inc. | HydroFocus Inc. Solutions for Land and Water Resources | Todd Groundwater | County of San Mateo California

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Potential Issues	Potential Mitigation
Lack of Data / Understanding	connection underlay - deep well to bedrock DWR well logs Ken Lajoie
Climate Change Threats/ Need for Increased Resilience	ACWD model scenario salt pans? shipping channel? CHARGE
Long-term Sustainable Management (e.g., preventing "undesirable results" such as subsidence and sea water intrusion)	SCVWD
Resource Protection (e.g., water quality, recharge, etc.)	→ multiple benefits
Nitrate?	check data
scenarios	dynamic model

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Potential Issues	Potential Mitigation
Lack of Data / Understanding	· Projected supply-demand deficits · Locations for recharge well sites - San Mateo wells used to irrigate parks (Central Park
Climate Change Threats/ Need for Increased Resilience	
Long-term Sustainable Management (e.g., preventing "undesirable results" such as subsidence and sea water intrusion)	Public Outreach
Resource Protection (e.g., water quality, recharge, etc.)	
Competition Physical Boundaries 1) Basins 2) Water suppliers 3) Reuse	Regional Planning/solutions
Lack of Urgency	Public Outreach

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Potential Issues	Potential Mitigation
Lack of Data / Understanding	- more wells + data collection, - IO new + existing wells + gain access to measure → including private - City - reach out to residents
Climate Change Threats/ Need for Increased Resilience	- seasonal pumping of wells - wetland restoration - Coordinate w/ City + County Climate studies + other regional studies
Long-term Sustainable Management (e.g., preventing "undesirable results" such as subsidence and sea water intrusion)	
Resource Protection (e.g., water quality, recharge, etc.)	Coordinate recharge projects + locations

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Potential Issues	Potential Mitigation
Lack of Data / Understanding recharge data? lack of shared repository	RWQCB make data available cross-boundary sharing (eg Palo Alto) SWAMP database (RWQCB)
Climate Change Threats/ Need for Increased Resilience increasing demand	
Long-term Sustainable Management (e.g., preventing "undesirable results" such as subsidence and sea water intrusion)	
Resource Protection (e.g., water quality, recharge, etc.)	incentives to recharge stormwater
	land cover maps?

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STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin *(continued)*

Potential Opportunities	Ways to Foster
Enhanced Aquifer Recharge with Recycled Water	Talk to Agencies - WW- IPR - Crystal Springs Augment Injection
Enhanced Aquifer Recharge with Stormwater	Map Recharge Areas; New Construction; "Unline" Creeks / Off-Creek Storage Retention; Get # Foster Relationships
Conjunctive Use of Surface and Groundwater Resource	Assess SFPUC available? - WSB In-Lieu Recharge; Eval. Recharge
Funding Partnerships and Opportunities	YES
Public Education	

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STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin *(continued)*

Potential Opportunities	Ways to Foster
Enhanced Aquifer Recharge with Recycled Water	Lagunitas West Basin San
Enhanced Aquifer Recharge with Stormwater	Lagunita ? other lakes, Felt → beware of quality Atherton canal floods
Conjunctive Use of Surface and Groundwater Resource	ASR IPR rubber dams
Funding Partnerships and Opportunities	
Public Education	

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STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin *(continued)*

Potential Opportunities	Ways to Foster
Enhanced Aquifer Recharge with Recycled Water	Distribution System: City policy for new development · WWTP re-location: Decentralized ⇒ uphill
Enhanced Aquifer Recharge with Stormwater	· Flood water retention · City Council ⇒ dual purpose · Restore channelized creeks ⇒ percolate
Conjunctive Use of Surface and Groundwater Resource	
Funding Partnerships and Opportunities	· Private-Public Partnership (SCCWA) ⇒ avoid ratepayer impacts
Public Education	· Educated public ⇒ interested in sea level rise · Following regional partners in studies (eg. SV/SF) · SWRCB (Board)
Re-thinking Water Infrastructure	
Regulatory Opportunities	· State Board reg changes ⇒ opportunity for IPR/DPR Economies of scale

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STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin *(continued)*

Potential Opportunities	Ways to Foster
Enhanced Aquifer Recharge with Recycled Water	- Sharon Heights Golf course - type projects. - Increase affordability of Recycled Water.
Enhanced Aquifer Recharge with Stormwater	- gather data on better recharge locations - soil types, depth, etc.
Conjunctive Use of Surface and Groundwater Resource	- Gw & surface water utility (Cirm - Manganese)
Funding Partnerships and Opportunities	- Regional 319 Project - Westside Basin - Caltrans funding - IRWM groups → funding
Public Education	- often tied to planning efforts - Community workshops & input gets more participation

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STAKEHOLDER DISCUSSION TOPIC 1:

Potential Issues and Opportunities within the Basin *(continued)*

Potential Opportunities	Ways to Foster
Enhanced Aquifer Recharge with Recycled Water	collaboration w/ WBSD would be good to get more san. agencies involved interties b/w systems,
Enhanced Aquifer Recharge with Stormwater	incentivize infiltration (see S.F. policy)
Conjunctive Use of Surface and Groundwater Resource	conjunctive use = mis-nomer?
Funding Partnerships and Opportunities	look into Santa Clara County ballot measure passed to raise $ Bay Area IRWM next phase of grant solicitation
Public Education	re: history of GW, SW use in area partner w/ schools to create awareness
	issue: understanding value of fresh water in creeks, bay and GW

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STAKEHOLDER DISCUSSION TOPIC 2:

Objectives for the San Mateo Plain Groundwater Assessment Project

Rank the following project objectives in order of importance, with 1 being of the highest importance. Blanks are provided for additional project objectives.

Priority	Project Objectives	Basis for Priority Ranking
2	Increase public knowledge through data sharing and collaboration	
1	Evaluate the hydrogeologic and groundwater conditions of the entire Basin	
1.5	Evaluate surface water and groundwater interactions in the Basin	
3	Evaluate threats to the Basin groundwater quality and quantity	
1	Assess groundwater recharge areas	
2	Evaluate interactions with adjacent basins and subbasins	
1	Develop a Basin hydrogeologic conceptual model	
1	Develop Basin water balance	
3	Assess threats to water quality	
3	Evaluate potential impacts of sea level rise and climate change	
2	Identify long-term strategies to sustainably manage groundwater resources	
2	Identify and position the Basin for funding opportunities	

highest ☆

same thing

same thing

San Mateo Plain Groundwater Basin Assessment Stakeholder Workshop #1

STAKEHOLDER DISCUSSION TOPIC 2:

Objectives for the San Mateo Plain Groundwater Assessment Project

Rank the following project objectives in order of importance, with 1 being of the highest importance. Blanks are provided for additional project objectives.

Priority	Project Objectives	Basis for Priority Ranking
	Increase public knowledge through data sharing and collaboration	
1	Evaluate the hydrogeologic and groundwater conditions of the entire Basin	basis
	Evaluate surface water and groundwater interactions in the Basin	
	Evaluate threats to the Basin groundwater quality and quantity	
3 = GOAL	Assess groundwater recharge areas	goal / output = multiple benefits
/	Evaluate interactions with adjacent basins and subbasins	
1	Develop a Basin hydrogeologic conceptual model	Foundation
2	Develop Basin water balance	
GOAL	Assess threats to water quality	Protect ACWD quality + other
	Evaluate potential impacts of sea level rise and climate change	
GOAL	Identify long-term strategies to sustainably manage groundwater resources	Regulation of shared resource
	Identify and position the Basin for funding opportunities	
1	Gather data	Build foundation data
GOAL		Unified management

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Priority	Project Objectives	Basis for Priority Ranking
	Increase public knowledge through data sharing and collaboration	
1	Evaluate the hydrogeologic and groundwater conditions of the entire Basin	V 1
	Evaluate surface water and groundwater interactions in the Basin	II
2	Evaluate threats to the Basin groundwater quality and quantity	V
4 ~~3~~	Assess groundwater recharge areas	III
7	Evaluate interactions with adjacent basins and subbasins	II
	Develop a Basin hydrogeologic conceptual model	II
4	Develop Basin water balance	III
	Assess threats to water quality	
	Evaluate potential impacts of sea level rise and climate change	I
~~4~~ 5	Identify long-term strategies to sustainably manage groundwater resources	IV
3	Identify and position the Basin for funding opportunities	IV

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STAKEHOLDER DISCUSSION TOPIC 2:

Objectives for the San Mateo Plain Groundwater Assessment Project

Rank the following project objectives in order of importance, with 1 being of the highest importance. Blanks are provided for additional project objectives.

Priority	Project Objectives	Basis for Priority Ranking
	Increase public knowledge through data sharing and collaboration	
1	Evaluate the hydrogeologic and groundwater conditions of the entire Basin	-immediate data gap/need
2	Evaluate surface water and groundwater interactions in the Basin	
4	Evaluate threats to the Basin groundwater quality and quantity	-Regional impacts need to be coordinated regionally
2	Assess groundwater recharge areas	
2	Evaluate interactions with adjacent basins and subbasins	
5	Develop a Basin hydrogeologic conceptual model	
2	Develop Basin water balance	
	Assess threats to water quality	Comes into play for well design
4	Evaluate potential impacts of sea level rise and climate change	
	Identify long-term strategies to sustainably manage groundwater resources	
	Identify and position the Basin for funding opportunities	-few opportunities @ this stage due to low priority basin

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Rank the following project objectives in order of importance, with 1 being of the highest importance. Blanks are provided for additional project objectives.

Priority	Project Objectives	Basis for Priority Ranking
11	Increase public knowledge through data sharing and collaboration	
4	Evaluate the hydrogeologic and groundwater conditions of the entire Basin	1
7B	Evaluate surface water and groundwater interactions in the Basin	
2	Evaluate threats to the Basin groundwater quality and quantity Overpumping	✓
7	Assess groundwater recharge areas	
9	Evaluate interactions with adjacent basins and subbasins	
4B	Develop a Basin hydrogeologic conceptual model	1
1	Develop Basin water balance	1
2B	Assess threats to water quality	✓
10	Evaluate potential impacts of sea level rise and climate change	
6	Identify long-term strategies to sustainably manage groundwater resources	✓
12	Identify and position the Basin for funding opportunities	

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STAKEHOLDER DISCUSSION TOPIC 3:

Data Gap Filling

Consider what data you currently have and what additional information could be collected that would contribute to the project. (For example, do you have access to wells that are not currently monitored for water levels or water quality, but could be?) Examples of general types of data are provided:

- Groundwater quality
- Groundwater levels
- Borehole and well logs for deep (100+ ft.) holes
- Dewatering system information
- Aquifer recharge data
- Groundwater use
- Hydrologic models
- Aquifer pumping test data
- Stream flow data
- Stream level measurements/ observations
- Salt and nutrient studies
- Stormwater runoff/infiltration studies
- High resolution aerial imagery
- Maps of land use/irrigated areas
- Geologic maps and cross sections
- Historical wells and groundwater use

Available Data	Details Regarding Type and Timeline of Availability
Example: East Palo Alto Pad D Well + Gloria FS	•Construction anticipated 2018 •Data will include: water quality, water levels, geologic and geohphyiscal logs, pumping tests •**Point of contact:** Anona Dutton adutton@ekiconsult.com
BAWSCA Mid Pe-Use Partnership Silicon Valley Clean water	•Point of contact: Adriana Carl
Palo Alto Recycled Study:	•Point of contact: Karla Daffy
San Mateo treatment Plant	•Point of contact: Brad Underwood

San Mateo Plain Groundwater Basin Assessment Stakeholder Workshop #1

STAKEHOLDER DISCUSSION TOPIC 3:

Data Gap Filling *(continued)*

Available Data	Details Regarding Type and Timeline of Availability
Westbay / Sharon Hts Golf	•Point of contact: Phil Scott
CalWater	•Point of contact: Tony Carrasco Dawn (Bear Gulch)
MP	•Point of contact: Pam Lowe
San Francisquito Creek JPA	•Point of contact: Len Materman
ACWD	•Point of contact: Mike
USGS	•Point of contact: Randy Hanson Matthew Tom Zigterman Julia Nussbaum

San Carlos / Mid Peninsula / Redwood City / Belmont / Foster City

GCWD

Stanford

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- Historical wells and groundwater use

Available Data	Details Regarding Type and Timeline of Availability
Example: East Palo Alto Pad D Well	•Construction anticipated 2018 •Data will include: water quality, water levels, geologic and geohphyiscal logs, pumping tests •**Point of contact:** Anona Dutton adutton@ekiconsult.com
SWAMP	• SW quality, levels, flow •Point of contact: RWQCB website
Palo Alto well const. & pumping info	• also stream flow measurements •Point of contact: Jen. Ciotti, John Reinhart
USGS wells Stanford, V.A. Menlo College. Seminary, Cal Water	• water levels • pumping •Point of contact: Christy Kennedy has contacts

land use maps – various sources

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Available Data	Details Regarding Type and Timeline of Availability
Example: East Palo Alto Pad D Well	•Construction anticipated 2018 •Data will include: water quality, water levels, geologic and geohphyiscal logs, pumping tests •**Point of contact:** Anona Dutton adutton@ekiconsult.com
San Mateo Clean Water Program	· New WWTP (by 3rd Ave) · Construction 2018 ⇒ done 2021 · WQ data from (RMOD) •**Point of contact:** Kathy Zammit City of SM
Burlingame Hillsborough	· Private wells ⇒ landscape •**Point of contact:**
Palo Alto Stanford SRA Balance Hydrologic	· San Francisquito Creek / Cone · Peter Drogmeyer •**Point of contact:**

PALO ALTO: Phil Bobel
STANFORD: Tom ZIGTERMAN
JPA & Len Materman
SCVWD: ?

STAKEHOLDER DISCUSSION TOPIC 3:

Data Gap Filling *(continued)*

Available Data	Details Regarding Type and Timeline of Availability
Adjacent Basins	· SCVWD, ACWD, Westside •Point of contact:
RWQCB	· TMDLs for Lagoons / Streams (N, P, organics) •Point of contact:
Cal Water / Estoo	•Point of contact:
	•Point of contact:
	•Point of contact:
	•Point of contact:

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Available Data	Details Regarding Type and Timeline of Availability
Example: East Palo Alto Pad D Well	•Construction anticipated 2018 •Data will include: water quality, water levels, geologic and geohphyiscal logs, pumping tests •**Point of contact:** Anona Dutton adutton@ekiconsult.com
lack of data – creek diversions	walk the creek •**Point of contact:**
local policies on wells	county / Jerry Heavn •**Point of contact:**
creek	ACTERRA •**Point of contact:**

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STAKEHOLDER DISCUSSION TOPIC 3:

Data Gap Filling *(continued)*

Available Data	Details Regarding Type and Timeline of Availability
historical wells	WRCA Stanford-Tom Farm Bureau County historical Society •Point of contact:
geology	Portola V. town geologist San Jose State Prof- Dave Anderson •Point of contact:
	•Point of contact:
	•Point of contact:
	•Point of contact:
	•Point of contact:

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Available Data	Details Regarding Type and Timeline of Availability
Example: East Palo Alto Pad D Well	•Construction anticipated 2018 •Data will include: water quality, water levels, geologic and geohphyiscal logs, pumping tests •**Point of contact:** Anona Dutton adutton@ekiconsult.com
San Mateo – Potential supply well	– 2-3 ~~wells~~ years out •**Point of contact:** jKinder@Calwater.com
Menlo Park – emergency wells 2-3 wells	1st well – end of 2017, hiring consultant to design – 2 test wells done •**Point of contact:** phlowe@menlopark.org
Stream line/unlined channels	– Stormwater resources plan – end 2016 – Stream data – Big Basin hydrology model – Big basin hydrology model.org •**Point of contact:** Matt Fabry