

**Greater Monterey County Integrated Regional Water Management Program
Regional Water Management Group Meeting**

**April 17, 2024
Zoom Conference Call**

RWMG Entity Attendees:

Jenny Balmagia – Central Coast Wetlands Group
Patrick Breen – Marina Coast Water District
Shandy Carroll – Monterey County Housing & Community Development
Beth Febus – Big Sur Land Trust
Jack Gao – Marina Coast Water District
Piret Harmon – Salinas Valley Basin Groundwater Sustainability Agency
Heidi Niggemeyer – City of Salinas
John Olson – California State University Monterey Bay
Rebecca Roberts – California Marine Sanctuary Foundation
Paul Robins – Resource Conservation District of Monterey County

Non-RWMG Attendees:

Doug Dowden – Consultant for the City of Marina
Elliott Grant – Sustainable Conservation
John Hunt – UC Davis
Ruth Langridge – UC Santa Cruz
Denise Mercado – Ecology Action
Susan Robinson – Greater Monterey County IRWM Program Director
Nathan Van Schmidt – San Francisco Bay Bird Observatory

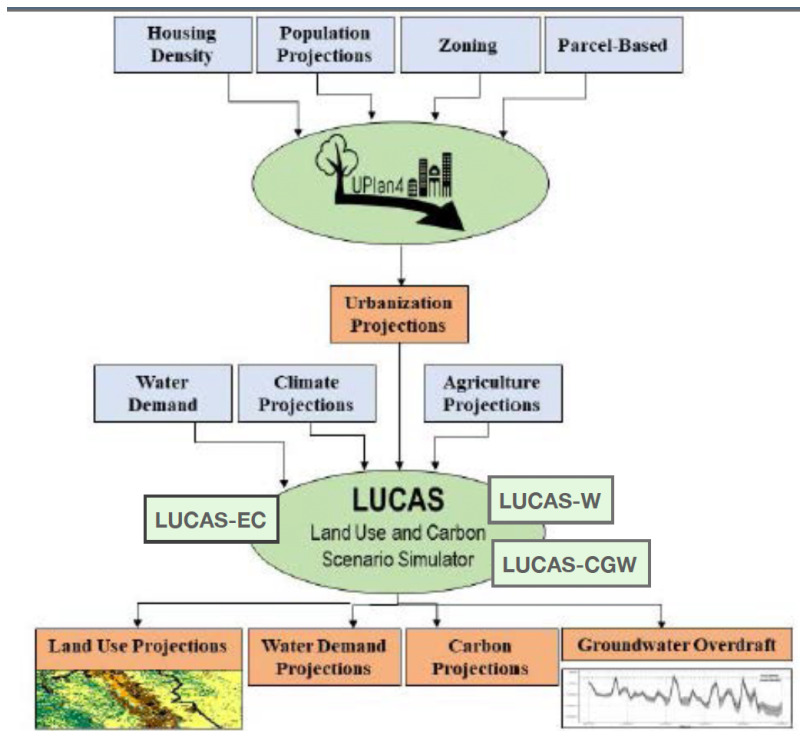
Meeting Minutes

1. Brief Introductions

2. UCSC Strategic Growth Council (SGC) Project, “Water Sustainability & Land Development Under Climate Change for Central Coast Communities”: Ruth Langridge (UC Santa Cruz) and Nathan Van Schmidt (San Francisco Bay Bird Observatory) presented results from the second UCSC-Strategic Growth Council project. This presentation included the outputs of the UCSC-SGC project team's scenario modeling, and an evaluation of the relationships between climate, water sustainability, land use, housing and ecosystem carbon balance for Central Coast communities. The researchers for this project were Ruth (PI), Nathan, Jim Thorne (UC Davis), Ryan Boynton (UC Davis), Tim Thomas (UC Berkeley), Tamara Wilson (USGS), and Paul Selmants (USGS).

The stakeholder outreach effort from the team’s first UCSC-SGC project revealed that a primary concern of community members was housing, along with maintaining sufficient groundwater levels, loss of prime farmland, maintaining healthy ecosystems. Therefore, this second SGC project included a focus on housing. The assessments are based on a regional and county level (not city level), covering Monterey, Santa Cruz, San Benito, San Luis Obispo, and Santa Barbara counties.

The centerpiece of their modeling was the LUCAS (Land Use and Carbon Scenario Simulator) model (+ variations of LUCAS). LUCAS is a spatial model designed to track changes in land use, land cover, land management, and disturbance, and their impacts on water use and ecosystem carbon storage and flux.



The team started with “business as usual (BAU)” scenarios based on historical trends, and then compared these results with two policy scenarios: Sustainable Groundwater Management Act (SGMA) and Regional Housing Needs Assessment (RHNA). The LUCAS models used water demand, climate projections, and agriculture projections to predict risk of housing displacement in urban neighborhoods under SGMA and RHNA. The LUCAS model tracked hydrological balance in two ways: (1) LUCAS-W: by comparing total water use overlying a basin to the estimated total water supply (including both groundwater and surface water) provided by GSPs, and (2) LUCAS

CGW: by comparing an index of groundwater flux that compared total recharge to aquifers overlying the basin (i.e., natural precipitation recharge excluding mountain front recharge) from downscaled global climate models to total groundwater use alone. They also built a LUCAS carbon model, LUCAS-EC (ecosystem carbon projections) as an output, which provided carbon sequestration rates and emissions from land-use development under different scenarios. The models were used to predict which urban areas would have a surplus of a deficit of housing under the different scenarios. Ruth showed the example of Watsonville, comparing BAU with RHNA, and illustrating movement of residential units from outside of the urban boundaries to inside those boundaries.

Climate change and RHNA scenario: A warm/wet climate future led to more plant growth and more carbon sequestration, but the greater plant grow also led to greater emissions from land-use development when they did occur. Models predicted less carbon emitted under a hot/dry scenario with RHNA than BAU (less disturbance under RHNA, so fewer emissions due to development).

Models were used to predict the risk of displacement of low-income populations. City of Salinas showed a high displacement risk. Additionally, findings illuminated whether the increase in housing under RHNA would align with where vulnerable populations lived. Looking at projections to 2060, King City was highlighted as an example of where RHNA would successfully add housing to a predominantly low-income community. Other urban areas showed mixed results.

SGMA scenario: The team explored two strategies that GSPs might include to achieve groundwater sustainability: 1) water use caps, and 2) water supply enhancements. The team used two versions of LUCAS. The earlier model, LUCAS-W, assumed limits on agricultural expansion and prioritized contraction of annual agriculture; while the newer LUCAS-CGW, assumed limits on agricultural expansion and did not include contraction of annual agriculture, only allowing otherwise temporary fallowing that would occur in drought years as “locked in” permanently. These caps are only present in basins that are in a state of chronic overdraft, simulating a cap-and-trade style allocation system. The two scenarios showed similar results. LUCAS-W results: Assuming contraction of annual crops continues, water use caps with current supplies would eliminate overdraft in most basins. Planned water supply

enhancements can help, but are not sufficient to solve overdraft by themselves. LUCAS-CGW results were similar, though not as powerful: Water use caps under SGMA would reduce overdraft but not enough of a reduction to reach sustainability. It's more effective in hot/ dry climate. Take-home message: Stronger measures are needed to reduce agricultural pumping.

RHNA + SGMA scenario: The team contacted cities and looked at General Plan projections for this data. Under the RHNA + SGMA scenario, RHNA was not shown to significantly affect overdraft because urban water use is significantly less than the variability in agricultural water use under the different scenarios, masking any differences in most basins. Though the difference is not insignificant: for example, with RHNA urban water use in the City of Watsonville would increase by about 346 AFY.

Vulnerability Assessment: The team looked at the combined pressures of land use change, climate change, and water use (groundwater overdraft) to get overall estimate of vulnerability. Water use: The cumulative vulnerability modeling showed that vulnerability decreases as water use caps increase (water use limits + enhanced supply). Agricultural vulnerability: RHNA would reduce loss of high-quality farmland; but the total loss of farmland would still be much greater – so the RHNA policy is not sufficient to prevent loss.

Summary of findings:

- Climate change-driven impacts: A hot/dry climate will reduce groundwater recharge to aquifers and will have a worse ecosystem carbon balance. The effect of climate change is significantly stronger than the effect of RHNA or SGMA on emissions from land conversion, highlighting the importance of future climate pathways to sustainable planning.
- Urban development and land use: Under RHNA, urban development pushes housing into urban boundaries; there is less land developed overall; lower ecosystem carbon balance.
- Urban development and vulnerable communities: RHNA allocation helps some vulnerable communities but distribution may favor wealthier communities in some cities. King City is a good example of appropriate RHNA allocation for vulnerable communities.
- Urban development and water use: On a basin scale, there was no visible significant increase in water use with urban development under RHNA; very large agricultural water use masked small changes in urban water use. On a city scale, however, increases in population under RHNA can result in visible increases in water use.
- SGMA: Water use caps under SGMA reduces overdraft, but just locking in drought fallowing was insufficient to reach sustainability. And just enhancing supplies was insufficient to reach sustainability. Strategies to reduce groundwater withdrawals could be especially effective at reducing groundwater overdraft and water vulnerability.

Ruth emphasized: These are just model projections but point to how mindful planning for water management and land development can redirect potential shortcomings.

Patrick Breen suggested that they look at Urban Water Management Plans (UWMPs) for future studies, noting that water budgets in GSPs are statutory while UWMPs are actual projections of water demand (factoring in population growth, water management strategies such as recycling, etc.). This would provide a more realistic estimate of planning for urban areas. Patrick added that this next UWMP cycle will be the first time that RHNA will be overlaid, so population/water demand projections will likely go up. Ruth noted that their study focused on the regional/county scale rather than the urban level; possibility the subject of a future study. Patrick also noted that none of the GSPs call for fallowing to the extent assumed in the SGC project; would that really occur? Ruth responded that this assumption was based on SVBGSA's originally proposed cap and trade system from the draft GSP, though the final GSP

does not call for this system necessarily and SVBGSA is still exploring how to implement demand management. Ruth suggested any retired land could be used for farmworker housing (win-win).

Piret Harmon noted that the SVBGSA is in the process now of conducting Demand Management workshops. She echoed Patrick in encouraging the researchers to look at UWMPs in the future. Heidi Niggemeyer noted that farmers in Australia have had to switch to lower water-use crops, and wondered whether changing crop use could be used as a potential factor in a future study. Nathan responded that they didn't change crops per se but did look at transitioning from annuals to perennials (e.g., row crops to vineyards). He noted that the total water demand in the ensemble model didn't change that much on account of the shift from annual to perennial.

3. MBNMS Water Quality Protection Program Coordinator: With Bridget Hoover's recent retirement from the Monterey Bay National Marine Sanctuary, the Sanctuary's Water Quality Protection Program (WQPP) Coordinator role is now vacant. There is some question as to whether NOAA will continue to fund this important role as a full-time federal position. John Hunt explained the importance of the WQPP Coordinator role for protecting water quality in the Sanctuary and local watersheds. Two issues greatly impacting the Sanctuary are: 1) water quality, and 2) fisheries – both of which MBNMS has no regulatory authority over. Monterey Bay was recently added to the CA 303(d) List for PCBs and organophosphate pesticides. These compounds were applied decades ago but are persistent, and they bioaccumulate; they are found in tissues of orcas, sea otters, and fish. The WQPP Coordinator position is key for coordinating efforts around the Bay to reduce nonpoint sources of pollution. John advocated that the position should be re-filled as full time, ideally as a full-time federal position but potentially as a split position or a contractor position.

The WQPP Committee has submitted a letter to John Armor, Director of NOAA Office of National Marine Sanctuaries. Susan Robinson said she would like to submit a letter on behalf of the Regional Water Management Group, and asked if anyone had any objections; no one did. Heidi suggested the letter include actual signatures from each RWMG member. Susan will look into that.

4. IRWM Meetings: Susan led a short discussion about what Regional Water Management Group members and stakeholders would like to see for future IRWM meetings and efforts going forward. Heidi requested increased communication about projects that are taking place throughout the region, noting importance of having opportunities to discuss and explore potential collaboration. Susan asked for volunteers to act as a sort of informal Advisory Group – to help her come up with future RWMG agenda items, etc. Volunteers:

- Jenny Balmagia (prior to the meeting)
- Ross Clark (volunteered by Jenny, prior to the meeting)
- Heidi Niggemeyer
- Piret Harmon
- Elliott Grant

5. Updates: There were no updates from those present.

The next RWMG meeting will be held on Wednesday, June 19, 2024 at Moss Landing Marine Labs.