

Meeting Summary

HMT-West Annual Meeting

October 7-8, 2010
Santa Rosa, CA

Co-Chairs: Timothy Schneider (OAR) & Dave Reynolds (NWS)
Hosts: Sonoma County Water Agency

Participants

HMT-West Final Attendee List				Updated: 10/12/2010
	Last Name	First Name	Affiliation	Email
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The forty-one participants included the HMT Management Council and representatives from a number of federal, state and local agencies, including:

- NOAA OAR
 - ESRL: PSD, GSD
 - NSSL
- NWS
 - OHD, OCWWS, WR-HQ, NCEP
 - WFOs: EKA, MTR, REV, SEW
 - CN-RFC
- US-Army Corps of Engineers
- US Geological Survey
- NCAR
- Scripps Institute of Oceanography
- CA Dept. of Water Resources
- CA Energy Commission
- Sonoma County Water Agency



Attendees of the 2010 HMT-West Workshop, held on 7-8 October 2010 at the Sonoma County Water Agency, Santa Rosa, CA

Kneeling, from left to right:

Dave Reynolds (SFO/MIC), Mike Smith (NWS/OHD), Dave Kingsmill (PSD/CIRES), Paul Neiman (PSD), Art Henkel (CNRFC), Gary Estes

Standing, from left to right:

Andy Edman (NWS/WRHQ), Warren Blier (SFO/SOO), Dan Kozlowski (CNRFC), Gary Carter (NWS/OHD), Mike Ekern (CNRFC), Tom Galarneau (PSD), Chengmin Hsu (PSD/CIRES), Woody Roberts (GSD), Isidora Jankov (GSD), Dave Myrick (NWS/SOO), Mel Nordquist (NWS/SOO), Brad Colman (SEA/MIC), Rob Cifelli (PSD/CIRA), Ed Tollerud (GSD), Marty Ralph (PSD), Lidia Cucurul (NCEP/EMC), Allen White (PSD), Bob Zamora (PSD), Ellen Sukovich (PSD/CIRES), Lynn Johnson (PSD), Larry Schick (ACE/SEA), Tara Jensen (NCAR/DTC), Mike Dettinger (USGS/Scripps), Jian Zhang (NSSL), Zoltan Toth (GSD), Brian Motta (NWS/COMET), Guido Franco (CEC/PIER), Tim Schneider (PSD), Rob Hartman (CNRFC/HIC), Martyn Clarke (NCAR)

Not shown:

Grant Davis (SCWA), Chris Delaney (SCWA), Barb DeLuisi (PSD), Art Hinojosa (CA-DWR), Bill Neff (PSD, Director)

Purpose

- The purpose of this meeting was to share and highlight accomplishments from HMT-West (from both NOAA and outside stakeholder perspectives), and to discuss next steps for HMT-West research, development, and research to operations (R2O)
- The target audience was the HMT-West Regional Implementation Team including key stakeholders and partners

Overview of Agenda

- I. Opening Remarks:
 - The “state of HMT”: provided programmatic background, current status and short-term plans
- II. Key Stakeholder Perspectives of HMT-West I & II:
 - Provided perspective on HMT’s role and accomplishments in supporting their respective missions.
 - Stakeholders represented were: OAR/ESRL/PSD; US Army Corps of Engineers; California Energy Commission; California Department of Water Resources; Sonoma County Water Agency; and the NWS
- III–VII. HMT Major Activity Areas
 - provided summaries of accomplishments and activities for HMT’s five ‘Major Activity Areas’
 - III. QPE Session
 - IV. QPF Session
 - V. Decision Support Session
 - VI. Snow Information Session
 - VII. Hydrologic Applications & Surface Processes Session
- VIII. Cross Cutting Theme Session:
 - Included presentations on barrier jets; the HMT-West (DWR) Legacy; Howard Hansen Dam rapid response; the COSMIC satellite project and ARkStorm
- IX. Climate Applications Session:
 - Concentrated on a CA-DWR perspective, an update on the CalWater Project, and a talk on atmospheric rivers and CA’s water supply
- X. The Path Forward:
 - An open discussion session targeting R2O; engagement and identifying priority transition opportunities and next steps

Key Outcomes (Page 1)

- A raised awareness of HMT-West activities and successes and remaining challenges
- Ideas for a framework for planning and executing transitions from HMT-West for both NWS and external stakeholders
- Identification of a tractable set of candidate prototype tools/methods that hold the most promise for transition to operations and a set of next steps
- Guidance to inform the development of a 5-10 year research, innovation, and transition plan for HMT-West
- Suggestions for improving the coordination of the coming season's field operations

Key Outcomes (Page 2)

- Important criteria for NWS buy-in include:
 - Building confidence in new products, concepts services and tools
 - Reliability in product delivery
- Baseline how we are doing today, then beat it!
- Don't forget the value of null cases – balancing false alarms with lead-time

Key Outcomes (Page 3)

- Specific actions were identified in three categories, including research, development, prototyping, and transition in support of:
 - I. National Weather Service operations
 - II. HMT stakeholders
 - III. Climate research and services

*These are discussed further under “Actions” below

Actions: Overview

HMT now responds to a growing range of “customers”: the National Weather Service (NWS), external (to NOAA) Stakeholders, and most recently the growing need for climate services. So actions and next steps will be organized around these three themes:

I. Support of NWS operations

- In the spirit of beginning where we have good will and traction – consensus was reached to pursue next steps on transition of research to NWS operations in 6 topical areas (see next slide)
- Small teams will be formed to advance these topics, with the POCs identified below serve as focal points; should include local champions + key researchers

II. Support of external stakeholders

- Continued implementation of 21st Century HMT-legacy observations, modeling methods, display, and decision support tools. This includes current (CA-DWR & US-ACE) and new groups
- A demonstration project with SCWA focused on the Russian River for IWRSS

III. Climate Services

- Planning and integration with NOAA’s Climate Service
- Continued coordination with CalWater and the California Energy Commission (CEC)

NB: These activities will be coordinated through/with HMT’s 5 Major Activity Areas and regional management.

Actions (Page 2a)

I. Support of National Weather Service operations (Part 1)

1) Quantitative Precipitation Estimates (QPE)

- Technical POCs: R. Cifelli (ESRL) & D. Streubel (WR-HQ)
- Others: Dave Reynolds (MTR WFO) and Rob Hartman (CN-RFC); ...
- HMT Manager: Tim Schneider (ESRL)
- Synopsis: Develop an HMT 'QPE vision' and alternatives (including a transition approach for ongoing projects)
- Some Specifics: PSD run Q2 software with VPR correction and gage bias correction along with KPIX ingest; compare to Stage 4 gage Prism CNRFC QPE over Russian

2) Snow level products and services (esp. at the CN-RFC)

- Technical POCs: Allen White (ESRL) & Art Henkel (CNRFC)
- Others: Andy Edman (WR-HQ); ...
- HMT Manager: Allen White (ESRL)
- Synopsis: Develop a strategy to implement data streams and scientific knowledge into NWS workflow
- Some specifics: bias correction for NWP (atmos) models and inputs to hydro models; additional verification

3) Ensemble model verification

- Technical POCs: Ed Tollerud (ESRL) & Andy Edman (WR-HQ)
- Others: Tara Jensen (NCAR); Ken Pomeroy (WR-HQ); Dave Reynolds (Monterey WFO)...
- HMT Manager: T. Schneider (ESRL)
- Synopsis: To evaluate HMT experimental model performance (HMT WRF ensemble; reforecasting (new)) and develop parallel efforts examining operational forecasts in the same framework; convey results to the operational community; also a link to training: understanding ensembles
- Some specifics: Recognized as a critical step; emphasis on extreme precip; specific tasks need to be identified by the "QPF team" but include operating in 'parallel AutoSpecify' using WRF ensemble derived points used by CNRFC (i.e. @ CN-RFC's ~ 60 forecast points); DTC-HMT collaboration is currently extending tools to fold in more operational models – models evaluated during the coming field season

Actions (Page 2b)

I. Support of National Weather Service operations (Part 2)

4) Localized precipitation enhancements caused by barrier jets and moisture fluxes

- Technical POCs: Paul Neiman (ESRL) & Bill Rasch (SAC WFO)
- Others: TBD...
- HMT Manager: Allen White (ESRL)
- Synopsis: To transition specific concepts (situational awareness) and tools (decision support) to forecast offices, leading to more effective and efficient decisions about when and where enhanced and/or extreme precipitation will occur
- Some specifics: Physical understanding of how barrier jets form/evolve; what is the role of barrier jets in locally enhancing precipitation?; when is the barrier jet present, how well do the models forecast it?; and how well does Prism represent the areas forced by barrier jet?

5) Hydrologic applications

- Technical POCs: Lynn Johnson (ESRL) & Mike Smith (OHD)
- Others: Tim Schneider (ESRL)
- HMT Manager: Tim Schneider (ESRL)
- Synopsis: Development of distributed modeling capability and the requisite forcing data sets; target is to produce the best possible hydrologic forcings for the National Water Center and support transition (long-term) to distributed models
- Some specifics: Initially focus on forcing with QPF ensembles, 'best possible' QPE, soil moisture; supporting hydro validation

6) Training

- Technical POCs: Brian Motta (NWS) & Dave Reynolds (NWS)
- Others: Marty Ralph (ESRL); ...
- HMT Manager: Allen White (ESRL)
- Synopsis: Develop training on the use of new and existing data (e.g., NEXRAD), models and understanding (especially the role of atmospheric rivers)
- Some specifics: Consider synchronous vs. asynchronous training; initial training scheduled (D. Reynolds/Brian Motta): two virtual sessions on ARs

Actions (Page 3)

II. Support of HMT stakeholders

- In partnership with the California Department of Water Resources, HMT will continue to implement and grow the “HMT-West Legacy” – a world-class, long-term observational network, new modeling & display methods, and decision support tools for extreme precipitation in California
- The US Army Corps of Engineers reported on the successful usage of HMT concepts, observations and prototype forecast aids derived from HMT-West that were deployed in Washington State to assist in the mitigation of flood risk associated with the ongoing problems with the Howard Hanson Dam. Deployments and support will continue in FY2011.
- HMT staff will follow-up on an exploratory meeting led by Rob Hartman of CNRFC on October 4-5, aimed at addressing water management issues in the Russian River Basin.

Actions (Page 4)

III. Climate

- The CalWater experiment, sponsored by the California Energy Commission, and in partnership with other federal and state entities, is aimed at understanding and quantifying uncertainties in climate projections of California's water supply and flooding. CalWater heavily leverages and builds upon the HMT-West observing facilities and scientific research findings. A CalWater planning meeting was held in San Diego on October 4-5 and the coordinated FY2011 activities were reported at the HMT-West Annual Meeting.
- Multi-year climatologies from long-term HMT observations were also presented at the Annual Meeting, which have yielded insights into atmospheric river-driven extreme precipitation events and related phenomena.
- Bill Neff described the planning for the National Climate Service, and the key role of HMT in meeting two of the major "Societal Challenges" NCS is addressing, i.e., "climate impacts on water resources" and "changes in extreme weather and climate events."

Actions (Page 5a)

Actions Concerning the HMT-West 2011 Field Season (Part 1)

see hmt.noaa.gov

- There was discussion about the involvement of the operational community in daily HMT-West telecons. NWS forecast personnel expressed a concern that it was difficult to engage in daily calls during active weather and that the time saved on this task could be better applied to working on transition activities.
- Although the daily calls will continue and anyone in the HMT community can choose to participate on any given day, it was decided that there will be no expectation for WFO and RFC personnel to participate in the daily calls. The daily project blogs can be consulted (people can subscribe to an RSS feed to have the updates pushed to them)

Actions (Page 5b)

Actions Concerning the HMT-West 2011 Field Season (Part 2)

- Two situations were identified as important criteria to request input from WFO and RFC forecasters on a daily telecon:
 - 4-6 days in advance of a forecasted major precipitation event. The operational community could provide valuable input about the intensity, location, timing, and uncertainty of the event (this discussion is envisioned to be similar to the format of telecons conducted by the operational community during the last field season – 2010, independent of HMT-West)
 - After the completion of an IOP. The operational community could participate in a call that included a preliminary retrospective analysis of the precipitation event(s): discussion could include topics such as the Sierra Barrier Jet or orographically enhanced precipitation
 - Additional coordination to support supplemental balloon launches, and possible operation of KDAX/KBBX in VCP 12 (or 212) mode will need to be worked out

Actions (Page 5c)

Actions Concerning the HMT-West 2011 Field Season (Part 2)

- In addition to the daily calls during the field season (1 December – 15 March), monthly HMT-West calls will be conducted with participation from as much of the RIT as possible.
 - These calls will provide progress updates on the six R2O themes as well as any new research or news of interest to the HMT-West community. It is envisioned that these monthly calls will be conducted year-round

Other Actions...

- Prepare and disseminate meeting report (this document)
- Explore the possibility of having bi-annual meetings
 - This may take the form of having a technical meeting (major activity area teams) meet annually in the Spring, with monthly update calls
 - And an executive annual meeting in the Fall (where MAA team leads report out to HMT management and stakeholders)

Appendix

I. Lessons Learned from HWT

I. Lesson's learned from HWT

- HWT is a “pull-out” program (staff have time away from their “regular jobs” to focus on testbed activities)
- Small pot of funds available to do this
- Distinguish between real-time and “retro-mode”
- There is a clear focus (hypothesis) -> “something to offer”
- Instant gratification (feedback and impact)