American Planning Association

Making Great Communities Happen

PLANNING FOR DROUGHT MITIGATION & PREPAREDNESS SYMPOSIUM SUMMARY

OVERVIEW

On July 26-27, 2012, the American Planning Association hosted a scoping symposium in its Chicago office to explore central issues in guiding the Drought Mitigation project as it moves forward. The main goal of the project is to connect mitigation resources with the planning practices of local, regional, and state governments. Invited participants focused on helping APA to:

- define the appropriate audiences and critical issues for the project;
- delineate the guiding principles in planning for drought;
- refine the outline for the PAS report; and
- identify criteria for best practices and potential case examples to study.

The summary below is an attempt to capture the main threads of discussion during the symposium.

ATTENDEES

The symposium's drought experts consisted of Bill Barker, AICP; Jeff Brislawn; Rand Frahm, AICP; Marilyn Hall, AICP; Jim Holway, FAICP; Marsha Prillwitz; and Mark Shafer.

National Drought Mitigation Center attendees consisted of Cody Knutson, Kelly Helm Smith, and Mark Svoboda.

National Integrated Drought Information System attendees consisted of Roger Pulwarty.

APA attendees consisted of Bill Klein, AICP; Erin Musiol, AICP; Anna Ricklin; Suzanne Rynne, AICP; Jim Schwab, AICP; Tim Mennel; Rana Salzmann; Yasmine Abou-El-Kheir; and Nija Fountano.

INTRODUCTORY REMARKS

Paul Farmer, FAICP, APA's CEO, kicked off the conversation on Thursday afternoon with an anecdote about the role of science in answering today's critical questions. With these introductory remarks, the symposium participants introduced themselves with a short statement about their background and experience. The common remark was, "all drought, all the time." Next, representatives from NDMC and NIDIS introduced the project.

Mark Svoboda, NDMC monitoring program area leader, stated that the symposium is a great opportunity to bring together experts from the climate context with the planning context. He informed the participants that he hoped that the discussion to come would help in creating an informative resource for planners. Next, Roger Pulwarty, NIDIS director, stated that the essence of NIDIS is how information for early warning is coordinated, governed, managed, and delivered. NIDIS joined the partnership in part to expand its capacity to coordinate, manage, and deliver.

Bill Klein, APA director of research and advisory services, then discussed the strategic points of intervention for planners and planning:

- Visioning and long-range goals and objectives
- Plan-making (comprehensive plans, sub-area plans, and functional plans)
- Plan implementation (regulations and incentives)
- Development project review and approval
- Public investments

DEFINING THE AUDIENCE

The conversation then shifted to Jim Schwab, manager of APA's Hazards Planning Research Center, who raised the question of audience for the project report. He asked what the primary readership for this report should be and if there is a secondary audience to address. In response, Svoboda informed the participants that about one-third of the calls NDMC receives are of people asking, "Now what?" He added that some of these people seeking assistance are from the state level. Klein stated that the report would not focus on the state level; however it may address the role the state has in facilitating local and county planners.

With this, the conversation moved forward with a discussion of the people who are already engaged in the issue. Marsha Prillwitz mentioned that in California water planners and land use planners deal with drought. Jim Holway added that there is a disconnect between water planners and land use planners. He said that the links are beginning to connect and that drought can capitalize on this trend. He suggested that it may be more effective to give information to stakeholders who then may ask planners to participate in the conversation.

Cody Knutson asked if the Drought Ready Communities Guide would be translated for planners. He noted that when writing this plan they did not know how to define the community. Holway stated that zoning codes are not in the NDMC plan. Knutson mentioned that they need to link existing plans and branch out to other areas such as heat, public health, wildfires, etc. to bring audienceships together. Pulwarty suggested that linking emerging responses is the integrated piece that is needed. He asked the group if the cumulative planning process does this.

Prillwitz said there are numerous climate adaptation plans on the books and raised the question to the group — what can we learn from these plans? She suggested reaching out to the authors of these plans as well as authors of sustainability plans.

Barker reminded the group that there are multiple water-related organizations in addition to city departments involved. He stated that many agencies are engaged in the issue but do not take advantage of each other's tools and have not invited planners to the table.

This is a list compiled of existing engaged audience and stakeholders:

Engaged audience: practitioners already thinking about the issue

- Water planners and land use planners (i.e. California)
- Authors of climate change and sustainability plans
- FEMA (potential to better address drought in existing contingency plans)
- "Champions"

Stakeholders:

- Water/ wastewater supply
- Parks and Recreation Department
- American Water Works Association
- Emergency managers
- Electric utilities

Several participants expressed concern that the report should address the rural audience as well as the urban audience. Svoboda and NDMC staff reinforced the importance of addressing the rural community in the report. Mark Shafer explained that drought is seen as an agricultural problem because it takes a while to get down to a water supply problem. Barker noted that different communities have different needs. He asked how the report would address the needs of different regions and cities.

Marilyn Hall discussed the perspective of the utilities department. She informed the participants that people blame the utility for water shortages and other negative impacts; however it is not the fault of the utility. She noted that if other utilities administrators could get a hold of the report at the Water Council Conference they would buy it.

This is a list of the primary audience and secondary audiences:

- Primary audience:
- Local planners
- Local water agency
- Public health officials (state water quality division, mental health, county health departments, human services, etc.)
- Emergency management community (including National Hydrolic Warning Council)
- Landscape industry
- American Water Works Association/ Public utilities
- Economic development department

Secondary audience:

- State officials
- Local and appointed officials
- Landscaping industry
- Building industry association
- Human services and Public Health officials

FOCUSING ON IMPACTS OF DROUGHT

Next, the discussion turned to impacts that the project and the symposium needed to highlight. Schwab encouraged the group to use this discussion as a way to help define what the drought-resilient community would actually look like. He noted that this exercise in identifying impacts would help in the later discussion of how best to mitigate those impacts. Holway suggested that the discussion be more targeted. He noted that if you are a water professional, then the topics discussed may already be on the list of proactive steps. Further, he stated that communities will be more resilient if there is more resilience in managing the system.

Smith emphasized a different way of looking at the region as it is impacted by drought. She reinforced the urban and rural audienceship discussion. She raised the question, what could be done within the urban environment to affect the region as a whole? She suggested looking at how the activity in cities set the patterns that ripple outward. Pulwarty added the question, what networks does the urban system rely on (transportation, food, etc.)? These systems rely on the rural and agricultural regions.

The participants compiled this list of impacts:

- Environment:
- Tree canopy
- Heat island
- Lawns and landscaping
- Loss of wildlife and biodiversity
- Invasive in new areas
- Decreased snow pack
- Soil erosion
- Air quality
- Fires
- Water quality and water temperature
- Effects on building foundation
- Trees and greenspace

Infrastructure:

- Pipes
- Building foundations
- Roads
- Water treatment (facilities and cost of water treatment)
- Hydro power facilities
- Energy and power plans (cost of operations)

Economic:

- Job loss
- Business failure
- Lower property values
- Loss in investment in new businesses
- Agricultural industries and agribusiness
- Conflict (drought role)
- Tourism and recreation

ACTION STEPS

Before the close of the symposium on Thursday evening, Schwab asked the participants to list six impacts they thought were most critical. First thing Friday morning, he presented the top listed impacts of drought. He initiated a discussion of proactive planning actions to mitigate those impacts. He asked participants if planning could help address all of the impacts effectively and for how long.

The first topic discussed was water supply. Barker stated that when water rates are higher, people will use less water. Rand Frahm agreed saying that tiered water rates are a good best practice. Barker suggested adopting regulations permitting grey water recycling. Prillwitz mentioned the California state model landscape ordinance.

Jeff Brislawn discussed the role of community wildfire planning in mitigating the effects of drought. Svoboda mentioned that another concern is how to fight fires when there is a drought. Prillwitz added that a backup system between agencies and backup generators are logistical action steps.

The conversation then shifted to public health. Kelly Smith stated that there is an effect on mental health and stress, air quality, and concentration of toxins. Svoboda then noted that there is increased suicide and domestic violence rates amongst the agricultural community during times of drought. Holway stated that when you move to backup supplies the treatment costs increase and quality may decrease. Prillwitz simply stated that when you hit the bottom of the reservoir there is gunk. Knutson noted that additional testing is needed when you move to other sources and that they found toxic algae in one place.

Klein then facilitated a similar discussion. He asked the group, what kind of water quality public health issues are we dealing with? Hall mentioned that low-income populations who are often already struggling to pay their water bills are affected. Anna Ricklin suggested that public safety and security may be a way to address drought through the planning process. Holway added that once you have a plan set, then you can provide the public health officials with the tools they need. Prillwitz suggested the group create a matrix showing what the planning department does and what the water district does. Hall added that public utilities are more concerned with low water levels, so the role of planners would be to connect public health officials with the water utilities.

Next environmental impacts were discussed. Shafer mentioned that drought may be addressed in wetland plans and development plans. Suzanne Rynne also mentioned habitat conservation planning.

Shafer stated that the loss of tax revenue is important and that community financial planning could help the shock. Knutson agreed that a community would benefit from knowing what type of economic impact is to be expected. Brislawn suggested a drought response plan by industry which would also identify the water needs of that industry.

The discussion about energy centered around the impact drought has on energy supply, energy reduction, and energy delivery. Prillwitz said that corn ethanol and drought are related. Holway suggested working with large local energy protections. Frahm suggested subsidizing reclaimed water (highly treated wastewater) for industrial usage. Pulwarty mentioned that during a heat event in Tennessee Valley a plant had to shut down for five weeks due to the impact of energy on water. Holway explained that connecting energy and water could help frame the issue for the audience of the report.

Svoboda said that engineering design is important. Hall noted that pipes that can handle contraction and compression are good for drought conditions. Knutson pointed out an example in Nebraska which gives a drought exemption for a city wanting to drill a deeper well.

The participants compiled a list of action steps:

Water supply:
Reduce consumptions and restrictions
Increase supply (long-term)
Desalination and water shortage
Rainwater harvesting
Low interest loans for infrastructure upgrades
Diversity water sources
Water conservation
Capture air-conditioner condensation
Green infrastructure improvements
Low impact development (curb cut outs)
Efficient infrastructure (i.e. rainwater gardens)
Water conservation fees and tiered water pricing
Metering
Water recycling (i.e. reclaimed water)
Use specific regulations (i.e. car washes)
Drought friendly landscaping requirements
Water supply reliability planning
Drought surcharges
Regulations and building codes (low flow toilets, etc.) including incentives such as rebates

Wildfires:

- Community wildfire protection plans
- Firewise program
- Buffers around fringes
- Education on the impacts of wildfires

Public health:

- Air quality impacts
- Frequently test rural well systems
- Mental health especially in farm communities
- Polluted water
- Lower quality back up supplies — switching to inferior sources of water
- Stagnant water
- Additional water testing
- Educational outreach
- Hotlines and clinic access
- Notify health officials with early warnings
- See CDC guidance documents

Environmental, habitat, wildlife:

- Low water-use plant list
- Urban heat island effect
- Exemptions for young trees and new plantings

Economic losses:

- Financial planning (reorganize budgets)
- Early information
- Back up drought response plan (according to industry)
- Building codes
- Ensure resources for efficiency (water audits for existing businesses)
- Guidelines for water use priorities (business, recreation facilities, rich and poor neighborhoods)
- Drought surcharges
- Treating to metering
- Alternative activities for tourism and recreation
- Inventory of financial assistance programs
- Water quality:

Monitoring
- Strengthening solid waste management and best management practices for drought mitigation
- Low impact development
- Drought exemptions for certain bodies of water
- Community plan

Parks and Recreation and Tourism:

- Hospitality policies geared to conservation
- Prioritization of amenities — planning
- Greywater reuse — reclaimed water

Agriculture:

- At state level, move hay and T solutions with permits
- Inspections
- Hotlines and markets
- Assess critical agricultural opportunities to determine what needs to be maintained
- Exchange and water rights among cities and farmers
- Outreach to bankers and insurance agents
- Encourage urban and community farming

Energy:

- High stream temperature and release of water to thermal
- Work with large producers
- "Green energy alternatives" — back to grid
- Assess and analyze the energy impacts with new policies
- Reclaimed water for energy company use (incluing fracking)
- Educate public and industries on water and energy consumption

Water infrastructure:

- Recognize connection between overuse of ground water and land hazards (i.e. sinkholes)
- Leak detection programs
- Wastewater systems that designate run on low-flow and expansion/contraction engineering and anchoring
- Pipe materials and elasticity
- Back up pumps, wells, and interconnection (permitting process for drilling wells in emergency situations)
- Emergency provisions for water hauling

GUIDING PRINCIPLES

Klein initiated the discussion about guiding principles. In an attempt to reinforce the strategic points of intervention for planning and planners, Klein posed a question to participants. He asked, if you had five minutes with the planning director, what are the five global things to keep in mind if you're serious about addressing drought? Smith responded that you must plan for variability. Hall added you must plan for resiliency. Svoboda added that the group had the opportunity to refine the lists of planning principles and guiding principles.

Schwab noted that documenting past history is necessary and that drought is not a unique event. Svoboda mentioned drought early warning systems. With these comments, Klein suggested adding a data as a guiding principle.

Svoboda suggested a model plan that could be modular or stand alone. He noted that some communities do not have the resources to write a separate plan so it may be better to incorporate drought mitigation language into an existing plan. Shafer said that water utilities typically have a water contingency plan, but they don't talk to the planning board or address the other issues discussed. Hall added that she would like to see drought integrated into the planning process. Knutson mentioned that historically drought planning was minimized because people didn't know how to address the issue. He stressed that the report should say that there are options to where to include drought in plans.

Svoboda suggested accountability as a guiding principle. Holway stated that planners could serve as a catalyst that helps brings stakeholders together. He added that the planner is able to bring the appropriate forces together.

Smith emphasized that you must plan for variability. Hall asked if there was a place in plans or the planning process for increasing drought intensity. She noted that it is known that droughts are getting longer and more intense.

In an attempt to summarize the guiding principles discussed to a working framework, Holway introduced the collaborative framework. After some discussion, he added adaptive as the last step to make the list cyclical rather than linear. Pulwarty added that it is important to assess capabilities as you respond. Finally, Holway offered the overall objective: building communities resilient in the face of climatic variability and drought. Finally, Knutson suggested that a helpful exercise is to conduct an inventory of all programs to determine where drought fits in. He noted that this would be difficult for smaller communities, but it could be an academic exercise as a first step.

The participants compiled a list of guiding principles:

Guiding principles:

- Timescale — before, during, after drought
- Involve cross-section of stakeholders
- Learn drought history (how has drought affected the community in the past)
- Risk assessment
- Monitoring and information system (utilize existing system or develop another information system)
- Prepare and documents actions and identify responsibilities
- Educate public about drought and planning for drought
- Integrate drought into the planning process (incorporate into existing plans or create stand alone plan)
- Collaborative framework (anticipate, coordinate, prepare, communicate, monitor, respond and assess capability, mitigate, adaptive)

REPORT OUTLINE

Next, PAS reports editor Tim Mennel walked attendees through his ideas for the draft report outline. He initiated the discussion about the framework within which the message of the report will be delivered. He stated that the report must give a sense of possibility and manageability while also explaining the complexity. He mentioned that some reports address specific strategic points in separate chapters. Schwab mentioned that he has worked on both types of reports.

Brislawn stated that it is important to explain the resources that have become available in the last 10 years. Svoboda added that the Drought Risk Atlas is a new tool for planners to utilize.

Schwab noted that in addition to the printed resource, online resources would also be available. Svoboda brought up the point that since the project is completely funded by a federally funded organization (NIDIS), could the report be available online? Schwab stated that in addition to the printed report, online resources would be available, but could not confirm if the report could be available online.

The participants provided input and developed the following outline:

Introduction: state the problem

- Broad problem statement
- Address all the areas drought covers
- Establish scope (what is possible, what planners can do)

Scope:

- What is the planners role?
- Explain how drought is different from other hazards
- Identify stakeholders and potential partners in drought planning
- Explain how to sell the issue to the community
- Options for plans (stand alone, in comprehensive plan, incorporated to other plans)

Legal framework:

- Case law
- Liability

Science:

- Brief reader on what is known about drought
- List available tools (including drought risk atlas and drought management database)

Best practice checklist:

Best practice examples:

Framing the issue:

- Answers why a community is better off by implementing these best practices
- Establish benefits of drought mitigation planning
- List what a community should do and what a community needs to do

BEST PRACTICES EXAMPLES

Next, Schwab segued into the final conversation of the symposium, an attempt to identify best practices. He encouraged participants to draw from their background and experience to come up with a list of examples of successful policies, programs and projects. What communities have done innovative or highly effective work that exemplified what we mean when we refer to best practices? What about their accomplishments merits attention?

Holway mentioned that champions can be key. Several participants noted champions as an integral piece to the case studies listed.

Knutson informed the group that the Drought Ready Communities guide may have some case studies to draw from. He added that NDMC is collecting a database of all news stories and case studies so plentiful data may be available in the coming months.

This is a list of potential case studies:

- Indianapolis, Indiana (integrated drought as component to other plans)
- Phoenix, Arizona (statistical analysis scenarios in general plan; conjunctive management)
- Denver, Colorado (good drought plan but may not be well integrated)
- San Antonio, Texas (regional water alliance)
- Athens-Clarke, Georgia (documented process of Water Conservation Committee; county commissioner and mayor as champions)
- Colorado State
- Archuleta, Colorado (state vulnerability index; hazard mitigation)

- City of Boulder, Colorado (integrated water supply plan; used historical record to develop plan)
- Potomac Delaware River Basin Commission Director Joe Bauchman (drought simulation planning; champion)
- Tampa Bay Water Utility, Tampa Bay, Florida (example of conjunctive use of multiple water sources including seawater desalination)
- California Best Practices (Redwood City, West Riverside County, Santa Cruz)
- Hualapai, Arizona (tribal example; tourism and recreation)
- Cheyenne River / Sioux
- Atlanta, Georgia
- Apalachicola-Chattahoochee-Flint (ACF) River National Quality Assessment Program
- Colorado State (outreach best practices; water conservation board)
- California State (logos, mascots, open public messages)
- Decatur, Illinois (identified triggers)
- Las Vegas, Nevada (landscaping programs)
- Rhode Island Water Management Plan (references drought)
- International Examples (Murray Island Basin, Australia)