



To: Colorado Water Conservation Board
 Attn: Ben Wade
 1313 Sherman St. Room 721
 Denver CO, 80203

From: Mat deGraaf – Pagosa Area Water and Sanitation District

Date: July 13, 2012

**RE: The Pagosa Area Water and Sanitation District's Drought Management Plan Update –
 PO#12000000079 – 50% Progress Report**

The Pagosa Area Water and Sanitations District (PAWSD or the District) is updating its Drought Management Plan in accordance with Colorado Water Conservation Board (CWCB) standards. The following is a synopsis of the work completed thus far, the obstacles encountered, and next steps to be taken. Tasks 3.0, 4.0, 5.0, and 6.0 are discussed in detail below.

| TASKS | TASK COMPLETE (Y/N) |
|---|---------------------|
| 3.0 Drought Vulnerability Assessment | |
| 3.1 Updated Firm Yield Report | Y |
| 3.2 Drought Vulnerability Assessment | Y |
| 4.0 Drought Mitigation and Response Strategies | |
| 4.1 Drought Mitigation Measures | Y |
| 4.2 Supply-Side Response Strategies | Y |
| 4.3 Demand-Side Response Strategies | Y |
| 4.4 Drought Public Information Campaign | Y |
| 5.0 Drought Stages, Trigger Points, Response Targets | |
| 5.1 Drought Stages, Trigger Points, Response Targets | Y |
| 5.2 Drought Declaration and Predictability | Y |
| 6.0 Staged Drought Response Program | |
| | Y |
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3.0 Drought Vulnerability Assessment

When the 25% progress report was submitted on June 8, 2012, there were two tasks that were not complete; the firm yield report update and the drought vulnerability assessment. The excerpt below was taken from the 25% progress report -

“PAWSD has contracted Steve Harris of Harris Water Engineering to update the District’s Firm Yield Report to reflect the newly established water supply policy (3.1a). This process is taking longer than expected due to numerous variables that must be addressed in turn. It is expected that the final firm yield report will be complete by the end of June, 2012. Task 3.0, specifically subtasks 3.1a and 3.2, will be completed once the updated firm yield has been submitted.”

The updated firm yield report is complete and has been submitted to PAWSD. Tasks 3.1a and 3.2 are also complete, which enabled the District to move forward in establishing trigger points for drought declaration and drought stages.

4.0 Drought Mitigation and Response Strategies

The worksheets provided by CWCB were a tremendous help through this process. Steps 4.1 – 4.4 came together quite well.

5.0 Drought Stages, Trigger Points, and Response Targets

The drought stages remained largely unchanged from PAWSD’s 2008 Drought Management Plan with the exception of the Voluntary Stage, which, in the previous plan, was a precursor to Levels 1-4. It was decided by the Drought Planning Committee that because voluntary water restrictions is a step that is enacted by the District to encourage water conservation in times of drought, it should be considered a level. The revised drought stage structure is below.

| Drought Stage | Description | Water Use Reduction Goal |
|---------------|-------------|--------------------------|
| Level 1 | voluntary | 0-10% |
| Level 2 | low | 10-20% |
| Level 3 | moderate | 20-30% |
| Level 4 | serious | 30-40% |
| Level 5 | severe | 40-50% |

The updated Firm Yield Report was crucial to the development of revised trigger points. Previous trigger points were established solely upon reservoir levels. While still based upon reservoir storage levels, the new trigger points also include PAWSD’s raw water diversions (termed “inflow”) from the San Juan River and Fourmile Creek into the planning structure. Additionally, the District developed a table wherein the percentage of water remaining in the reservoirs could be quantified in AF. This allows for a better understanding of how much water is being used and how much remains. The revised trigger points table is below.

| Drought stages | Trigger Points | AF Used | AF Remaining | Water Demand Reduction Goal |
|----------------|------------------------|---------|--------------|-----------------------------|
| Level 1 | ≥ 90% Storage + Inflow | 555 | 4997 | 0-10% |
| Level 2 | ≥ 70% Storage + Inflow | 1110 | 3886 | 10-20% |
| Level 3 | ≥ 50% Storage + Inflow | 1110 | 2776 | 20-30% |
| Level 4 | ≥ 40% Storage + Inflow | 555 | 2221 | 30-40% |
| Level 5 | ≥ 30% Storage + Inflow | 555 | 1666 | 40-50% |

6.0 Staged Drought Response Program

The PAWSD service area is comprised of a large percentage of 2nd homes and vacations rentals. Similar to most places, summer irrigation of landscapes is a large component of demand increases. Being a high desert environment that sits at 7000 feet, growing and maintaining turf grass, or anything for that matter, is generally an arduous task requiring large amount of water. In an attempt to move away from “thou shalt not” type of language, PAWSD has put more focus on reducing irrigation of landscapes and less emphasis on more minor forms of demand reduction like the washing of vehicles, the frequency of changing bed linens in hotels, etc. It is anticipated that drought surcharges coupled with modified rates structures will send a clear messages to water users without PAWSD having to micro-manage every water use scenario. This is still a work in progress as the PAWSD Board of Directors will weigh-in on the changes and offer suggestions. The current revised drought response measures are below.

| Drought Stage | Demand Reduction Goal | Mandatory Water Use Restrictions (BOLD denotes a change from the previous drought stage) |
|----------------------|-----------------------|--|
| Level 1 Voluntary | 0-10% | None |
| Level 2 Low | 10-20% | <ul style="list-style-type: none"> - Irrigation is permitted only between the hours of 6 PM - 9AM based upon address. - Odd numbered addresses may irrigate on odd numbered calendar days while even numbered addresses may irrigate on even numbered calendar days. - Gardens (edible and non) may be hand-watered using a hose or drip irrigation. - Restaurants encouraged to serve water only upon the request of customers. |
| Level 3 Moderate | 20-30% | <ul style="list-style-type: none"> - Irrigation is permitted only between the hours of 6 PM - 9AM based upon address. - Odd numbered addresses may irrigate on odd numbered calendar days while even numbered addresses may irrigate on even numbered calendar days. - Irrigation is permitted Monday - Friday only. Weekend watering is prohibited. - Gardens (edible and non) may be hand watered using a hose or drip irrigation - Restaurants shall serve water only upon the request of customers. |
| Level 4 Serious | 30-40% | <ul style="list-style-type: none"> - Irrigation is permitted only between the hours of 6 PM - 9AM based upon address. - Odd numbered addresses may irrigate on odd numbered calendar days while even numbered addresses may irrigate on even numbered calendar days. - Irrigation is permitted Mondays and Tuesday only. Weekend watering is |

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| | | prohibited. - Gardens (edible and non) may be hand watered using a hose or drip irrigation - Restaurants shall serve water only upon the request of customers. |
| Level 5 Severe | 40-50% | - Irrigation of all landscape elements is prohibited; including gardens (edible and non). |

The Public Drought Campaign Plan consists of prepared press releases and sequential steps for public education and dissemination of information through each of the 5 drought stages.

The next step is the Implementation and Monitoring stage (7.0). It is anticipated that this stage will require significant involvement from the Drought Committee as well as the PAWSD Board of Directors.

Respectfully,

Mat deGraaf
 Water Conservation Coordinator
 Pagosa Area Water and Sanitation District
 970-731-7623
 mat@pawsd.org