TOWN OF PAYSON
WATER RESOURCES MANAGEMENT

2013 Status Report

APRIL 18, 2013

Prepared By:
Town of Payson Water Department

2013 PAYSON WATER RESOURCES
STATUS SUMMARY

The Town of Payson desires to maintain water usage below what is replaced on a long-term average basis by rain and snowfall within the watersheds that recharge or re-fill the aquifer upon which it relies. Maintaining groundwater usage below this amount is considered "Safe Yield". The amount of groundwater available to the Town of Payson within a Safe Yield state is estimated at up to 2,681ac-ft/y. This value is considered Payson's maximum available annual groundwater supply.

It is the policy of the Town of Payson local government that the Town will make attempts to manage its water supply and take efforts relating to water development and water conservation to achieve and/or maintain a "Safe Yield" condition of its groundwater supplies each year. Currently, Payson's water consumption remains below the long-term state of "Safe Yield". In 2012, Payson residents consumed local groundwater resources in an amount equal to 61% of "Safe Yield". The net per person usage of water for 2012 was 79 gpcd.

Below normal annual precipitation has been observed during 2012 and yet, groundwater resource levels remain relatively stable over the last few years (due to low demand). Therefore, the **Town of Payson will implement Water Conservation Level I** water wise use levels for the period of April 2013 to May 2014. Water conservation and demand management continue to positively influence both the short and long-term water supply status of the Town of Payson.

C.C. Cragin (Blue Ridge) surface water and related water resources projects have been moving forward with great success. Three of the eight in-town treated waterlines are now complete. Line B which runs along East Zurich and Park Drive to Mud Springs Road consisted of 5,142 feet of 18" ductile iron pipe. Line D which runs west on Airport Road consisted of 3,634 feet of 8" PVC pipe. Line E which runs along West Rumsey Drive through the park consisted of 1,582 feet of 12" PVC pipe. Completion of the C.C. Cragin project will add an additional 3,000 acre feet of water to Payson's annual water resources. Payson continues to move along on the road to achieving a rare condition, water resources sustainability in the desert southwest.

2013 WATER RESOURCES STATUS

GROUNDWATER LEVELS

Groundwater levels in the Payson area are ever changing, not only from year to year but also from day to day. It is important to note that changes in groundwater levels either up or down are normal, within the context of a particular area's history. Because the Town of Payson currently obtains all of its potable water supplies from a fractured aquifer groundwater source, highly variable groundwater levels are expected.

Groundwater level changes are related to many factors. Recharge or re-filling of the aquifer occurs in times of precipitation (rainfall and snowmelt). This results in groundwater level rise. In an opposite way, groundwater levels will drop in response to periods of no recharge or drought. Groundwater levels will also drop and rise in response to well(s) pumping or not pumping. The topic becomes more complicated by virtue of the type of aquifer on which the Town and communities in the region depend. The Payson regional aquifer is in fact a complex system of interconnected cracks and sections of porous (sponge like) earth that yield water to wells. Nearly all of the earthen material beneath Payson and its surrounding area consist of the "Payson Granite". Some areas in the granite have more cracks and porous earth (decomposed granite) than others and some of the cracks or "fractures" are more interconnected than others. Therefore, interpreting changes in depth to groundwater can be complicated.

Groundwater levels are measured quarterly from all wells in the Town of Payson's observation network. This network consists of nearly 100 wells in the Payson area. Monthly measurements are collected at all active production wells and also at key observation wells. The water level data is maintained in a database by Water Department staff.

From 2010 to 2012, groundwater levels remain relatively stable and even higher in some areas. The resilience of groundwater levels, in spite of lackluster precipitation in 2012, is indicative of an aquifer in "recovery" condition. In other words, water levels are rising or stable because the aquifer is not being pumped more than it is naturally replenished over the long-term. The Town's groundwater supply clearly remains in a "Safe Yield" condition.

2013 WATER RESOURCES STATUS
CONSERVATION

Conservation Programs

With the ongoing support of the Town Council, rebate programs continued during 2012. These programs include a residential toilet rebate, a commercial plumbing retro-fit rebate, and two low income assistance programs. Qualifying rebates for both homeowners and businesses have decreased over the years indicating the success of the program. Overall, eighteen toilets and fourteen faucet rebates were provided during 2012. We, also, continue to provide low-flow shower heads and faucet aerators at no cost to homeowners.

The Water Department held its 6th "Project Wet" Water Festival in September, 2012. Project Wet is a multi agency sponsored education program designed for interaction with and the education of 4th grade students Through this festival future water customers are educated about the water cycle, the watershed, groundwater and aquifers and, of course, water conservation. 173 students from six 4th grade classes participated. 40 volunteers participated, which included science students from the high school, town employees from Parks & Rec, Streets, and Community Development; as well as, employees from APS, SRP, the Payson Roundup, and the Sanitary District.

In April, 2012 the Department co-sponsored an E-Cycling Event with ADEQ, the Town of Star Valley, Gila County, the Pine/Strawberry Water District and the Sanitary District. Efforts are underway to bring another E-Cycling Event to the area by the end of April 2013.

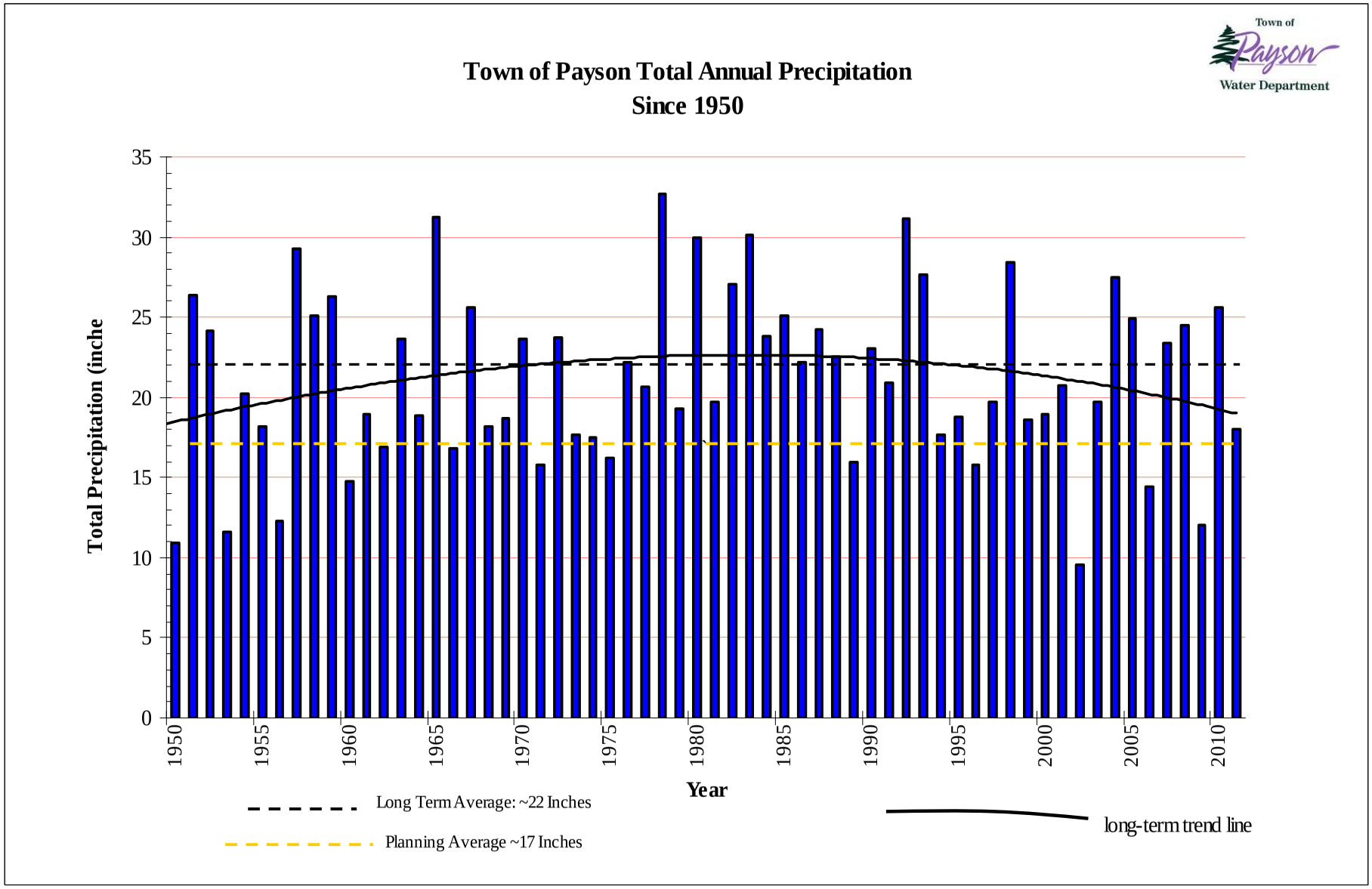
Students at Water Shed Model – Project Wet, September, 2012

CONSERVATION Continued…..

Conservation Level

Water conservation requirements pursuant to Resolution No. 1742 anticipate that Water Conservation Level requirements be enacted according to the deficit or surplus of precipitation that occurred in the twelve month period immediately preceding the annual water report. Additional, resource factors are also considered when setting the Water Conservation Level requirements for any given year. Precipitation for Payson's water year of 2012-13 (April 11-March 12) was 20.32 inches. This amount is only slightly below the long-term average of ~22 inches per year, as referenced in conservation ordinances. Precipitation over the winter months helped to improve the annual outlook, which was down after an unimpressive monsoon season. Long-term precipitation trends continue to indicate the current drought cycle may not bottom out until around the year 2015 (see chart on page 6).

With Payson's current low per person (per capita) water use, it is determined that **Water Conservation Level I remains the appropriate measure to implement upon Council acceptance of this report in April, 2013.** It is anticipated that implementation of Level I water use limitations will continue to promote responsible water use, maintain annual water demand below the targeted 89gpcd (per-person) level, and reserve adequate water supply capacity for fire protection.


Town of Payson Water Department
Town of Payson Total Annual Precipitation
Since 1950
Total Precipitation (inche
35
30
25
20
15
10
5
0
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Year
Long Term Average: ~22 Inches
Planning Average ~17 Inches
long-term trend line