



Groundwater Management Area #1 – GMA#1

MEMORANDUM

To: Honorable Chairman and Members

From: Kyle G. Ingham, Local Government Services Director

Date: August 19, 2014

Re: Agenda Item #12

RECEIVE AND DISCUSS – PRESENTATION REGARDING THE IMPACT OF SUBSIDENCE OF POTENTIAL DESIRED FUTURE CONDITIONS IN THE MAJOR AQUIFERS OF GMA#1. {TEXAS WATER CODE §36.108(D)(5)}

SUMMARY

Land subsidence may occur when large amounts of groundwater are withdrawn from certain types of aquifers, such as those consisting of fine-grained sediments. Compaction of sediments can accompany excessive ground-water pumping and it is by far the single largest cause of land subsidence. The sediment compacts because the water removed was partly responsible for holding the ground up. Increasing development of land and water resources threatens to make existing land-subsidence problems worse and initiate new ones. Land subsidence is of greatest threat to areas where the water table is shallow, municipal and infrastructure is greatest (resulting in potentially greater financial damage) and in areas where oxidation of near surface soil zones can contribute to subsidence.

In GMA-1, groundwater is generally withdrawn from significant depth and is overlain by well compacted or consolidated strata making land subsidence less likely to occur than in other regions of the State. Region A is predominately rural and is in general less developed than certain regions of the State such as the Houston or the coastal area. Potential financial loss or damage to infrastructure is much less likely to be significant in less developed areas.

Significant land subsidence has not been an issue in GMA-1 historically and is not believed to currently pose a serious threat due to the geology of the aquifers and overlying strata, the

porosities of the aquifers, the depth to water and the general lack of large volumes of readily compactable soils and sediments.

The member districts in GMA-1 have determined Control and Prevention of Subsidence as not applicable to the management goals required by 31 TAC §356.5(a)(1)(C) to be addressed in their management plans. Below is a listing of the districts and a link to their management plans.

Hemphill County Underground Water Conservation District

<http://www.hemphilluwcd.org/wp-content/uploads/APPROVEDDISTRICTMANAGEMENTPLAN2012.pdf>

High Plains Underground Water Conservation District No. 1

<http://www.hpwd.com/rules-and-management-plan/district-management-plan>

North Plains Groundwater Conservation District

<file:///C:/Users/dale.hallmark/Downloads/management%20plan%20revised%202013%20-%20final.pdf>

Panhandle Groundwater Conservation District:

<http://panhandlegroundwaterdistrict.files.wordpress.com/2011/05/2012-management-plan-final.pdf>

Discussion

1. In review of the information contained within this summary, what other information does the Joint Planning Committee wish to consider?

Notes:

1. This memo/summary is intended to help educate and facilitate discussion & joint planning among GMA#1 members at this time. It is not anticipated that this memo/summary will be acted upon in relationship to the Explanatory Report at this time.
2. Supporting documents related to this Factor will be included in a folder entitled with the Factor Number under the GMA#1 Shared Dropbox folder. These folders shall contain all factor related documents going forward.