

2008 11 19_Heartland NR Water Resources

Summary of Meeting Notes

I. Introduction and Presentations:

Pat Stead – Three Presentations

1. Water Resources Overview of Heartland– Mike Gurr
2. SWFWMD Programs – Brian Armstrong
3. SWFWMD Programs- John Milliken

Presentations

1. Water Resources Overview of Heartland - T. M. (Mike) Gurr

Ground water resources

Three Aquifers (Figures 1, 2, & 3)

1. Surficial Aquifer System– limited potable supplies, mostly irrigation and agricultural use
2. Intermediate Aquifer System – Potable, irrigation and agricultural use
3. Floridan Aquifer System – Main source of water supply, public, potable, industrial, mining, commercial, agricultural, etc.

Northern portion of region principal source of potable water is the FAS and ISA

Southern portion of the region the principal source of potable water is surface water and SAS.

Past development and use of water and the variation in natural rainfall fluctuation has stressed the Floridan Aquifer and lowered the water levels in the aquifers.

The area south of highway 60 has been declared (by the SWFWMD) as the Southern Water Use Conservation Area (SWUCA).

There is a season fluctuation of 10 feet to 40 feet in elevation of the FAS in the region between the wet /dry seasons.

State and County regulation and policies have been developed to protect the Green Swamp / Floridan Aquifer High in the northern portion of the Heartland Region.

Surface Water Resources

The major watersheds in the Heartland Region are the Peace River and Kissimmee River. (Figure 4)

The Peace River and its tributaries drain the western portion of the region and flow southward from the upper reaches of Polk County and empties into Charlotte Harbor.

The Kissimmee and its tributaries drain the eastern portion of the county and flow southward and empty into Lake Okeechobee.

Development pressures have increased the use and potential for future use of surface water for potable uses.

In the past many of the surface water features were channelized, wetlands and wet prairies were ditched and drained to promote urbanization and agricultural uses.

The negative impacts of these past practices on the natural resources especially water quality have been recognized in recent years.

FDEP and the WMDs have been evaluating the watersheds and the impact of development in the watersheds upon the water quantity and quality of these resources.

There are many major initiatives underway to attempt to “restore” the natural functions and improved water quality and habitat.

FDEP and the WMD have identified the following as impaired water in the Peace and Kissimmee basins. (Figure 5).

2. SWFWMD Programs - Brian Armstrong

Flood Plain Management

Natural Systems

1. MFL for all surface water bodies, aquifers, peer review,
2. Set MFL for 164 water bodies
3. Upper and Lower Peace 2009,
4. NS Prong
5. Horse and Charlie Creek
6. SWUCA 2019 reevaluate

MFL recovery

Aerial / wetland mapping

Land acquisition programs 430,000 acres

Water quality

1. Monitoring
2. Maintenance and improvement
 - a. 1000 points plus flows and levels
 - b. SWIM
 - c. FARMS

3. SWIM largest lake Hancock, 1000 acres wetland to improve water from Lake Hancock
4. FARMS – reasonable assurance Joshua and Charlie Creek increases in chlorides from agricultural tail waters
5. Back plugging program to zone off chlorides reduces production (water use) and has increased farming production
6. ERP water quality

Regional Water Supply Program

1. Northern Tampa bay
2. Resource concerns over withdrawal, lowering of POT surface
3. Salt water intrusion
4. Lowering springs and levels upper peace and highlands ridge

Northern Tampa Bay Example

1. Lake level draw downs
2. Damage to wetlands

Goals

1. Reduce withdrawals 158 to 90 gpd
2. Development of alternative water supply
3. Provide environmental recovery

Master water plan

1. CW Bill Meade reservoir
2. Sea Water desalination Plant at Apollo beach 27 mgd
3. Surface water treatment Tampa bypass and Alafia River 60 mgd treat or pump into reuse

Demand projection

1. 308 mgd potential source [reclaimed and conservation]
2. 95 mgd

Infra-structure improvement 25 mgd configuration

SWUCA

1. 2002 176 mgd
2. Agriculture is the major land use in this area
3. Sea water intrusion – pull water in from coast
4. Upper Peace River
5. Ridge lakes decline

6. Goals SWUCA
 - a. Restore MFL upper peace and lakes
 - b. Minimum aquifer levels (2025)
 - c. Reduce withdrawals by 50 mgd
 - d. Land use transition, 50
 - e. Farm 40 mgd
 - f. Lands purchased for cons 15 mgd
 - g. If farmer sells to development district will take part of the water transition for environment

FARMS (Facilitating Agricultural Resource Management Systems)

1. Surface water storage of tail water and use tail water for crops irrigation
2. Lake Hancock purchased property, raise discharge to store high flows

Peace River /Manasota RWSA -600 million gallon reservoir or aquifer recharge

1. New 6 billion gallon reservoir
2. Treatment from 40 to 60 mgd
3. Source water feasibility
 - a. Upper Myakka
 - b. Shell and Prairie
 - c. Upper Roberts's Bay
 - d. Transmission System

Polk Co comp water supply plan

More detail for each municipality

Initial permitting and design on projects soon'

Outdoor conservation

1. Tiered water rate structure
2. Florida –friendly
3. Rain sensor
4. Moisture sensor shut off

Indoor conservation

Reclaimed water / recharge

1. Lakeland reclaimed water to TECO
2. Reclaimed treated to potable inject to FAS
3. Lower Floridan lower quality and blend with reclaimed water

Heartland demands

1. 51 mgd Polk, most will supplied from agricultural transition (21)
2. Desoto Co.
3. Hardee -41 mgd
4. Highlands – decline in water supply demand -16 mgd from agricultural

Heartland Summary

1. 87 mgd increase in water use demands
2. There is an allocation percentage for converting Agricultural uses to residential uses.
 - a. If not impacting the MFL can convert 100%.
 - b. If impacting MFL's (90%), if the source well is relocated may be less and if relocation impacts water body reduced allocation.

Status of Apollo Beach Plant

1. Owned by Tampa Bay Water Authority.
2. There have been challenges last year with bringing the plant on line. To date at operating at 20 mgd. The plant design capacity is 27 mgd
3. There is a 10 mgd expansion planned however, it is not funded

3. SFWMD Programs- John Milliken

Kissimmee Basin Water Supply Plan

1. Water conservation
2. Northern Everglades
3. Kissimmee River Restoration

Kissimmee Basin water supply plan updated Dec 2006

1. Local government response due June 2008
2. Area from Lake Okeechobee to Greater Orlando required that they work with SWFWMD and SJWMD
3. The FAS contains brackish water and is being treated along the coast areas for potable uses.
4. Population of the area is forecasted to double to 1.1 million by 2025.
5. Power generation indicated no change in water use however, there may be an increase.
6. Urban is the dominate land use, predictions are for a 140 plus percent increase.

Water Source options

1. Reclaimed water.
2. Surface water (seasonal).
3. Increased storages (reservoirs).

4. Brackish groundwater.
5. Localized fresh groundwater (limited opportunities).

Projects (88 total)

1. 44 for reuse
2. 24 for surface water
3. 18 for fresh water
4. 2 for brackish ground water
5. Total yield of these projects is 368.6 mgd
6. Estimated Cost of these projects is \$324 million.

Limited fresh ground water in the area it has the least potential for increased yields.

Well field impacts in Orange County and Central Florida area

Central Florida coordination area

1. United front with other WMDs.
2. Cap use of new ground water to 2013
3. After 2013 need alternative sources

Initial conclusions for surface supplies

1. More limited than first thought in upper chain of lakes more limited
2. Evaluation some potential reservoirs.
3. Efficient Reservoir size range to 2 to 4 square miles. This is currently considered the more efficient size range.

Summary

1. Evaluating demands.
2. Investigating new sources.
3. Fresh water from the SE portion of Osceola County.
4. Conducting cost analysis as well.

Attempting to write rules for rural lands stewardship

1. Many proposed developments in heartland area that are not in their projection need infrastructure development for these isolated new communities.

Conservation Approaches

1. Regulatory initiatives – do not have irrigation rules.
2. Indoor conservation
3. Mobil irrigation labs
4. BMPS for golf courses , etc

Northern Everglades and Estuaries 2007 legislation

1. Expands Lake Okeechobee
2. Protection program Northern Everglades
3. Restoration plans currently underway
4. Objectives
 - a. Phosphorus
 - b. TMDLs
 - c. BMPs
 - d. Reservoir treatment areas
 - e. Down to 105 million tons of Phosphorus entering Lake Okeechobee
5. Water quantity
 - a. 1 mm acre feet of storage
 - b. Caloosahatchee and St. Lucie River Water Shed Protection Plans - finished near the end of year.

Kissimmee River restoration

1. 1962 – 1971 channelization began
2. Some of the ox bows are available, however, many not recoverable
3. Resulted in an increase in agricultural use, however, lost wetlands
4. Water reservation to protect fish and wildlife higher goal than MFLs
5. Capturing flows necessary for restoration
6. 50/50 cost share with SFWMD and US Corps.
7. 22 miles of main channel to be filled in to recreate 40 miles of river channel
8. Not sure how much needs to be preserved to maintain flow of river,
9. Wetland birds are returning

Questions

How did you reach the conclusions for the reservoirs?

Early model results

Are Reservoirs being considered?

Kissimmee water reservation will be for river restoration

II. Break into Groups

Pat Stead then asked everyone in the audience to put on vision glasses for 50 years

Situation, concerns, projection for growth

Goals water 2060

We then broke into four groups to discuss the goals for each area:

1. Water Supply
2. Water Quality
3. Conservation Protection and Water Storage
4. Recreation and Management

The goals for each group were presented as follows:

III. Group Reports

Water Supply Group - Goals

1. Protect the Heartland Water Supply by identifying by 2010 all viable water sources and alternative water sources with the baseline water supply sources being the Heartland 2005 water supply plan with updates occurring within the planning cycles of the WMDs through 2060.
2. By 2010 the RPC will conduct a population forecast study for the Heartland to more accurately project future population growth with future updates concurrent within the planning cycles of the WMD's through 2060.
3. This plan will be updated as its basis to include all identified wells and well fields regardless of whether modeling of these well field has occurred as a component of that plan

Water Quality Group - Goals

1. In 2060 Maintain or improve the current water quality for its use in our rivers, lakes and streams.
2. In 2060 maintain the current water quality of the water supply thorough out the region.

Conservation Protection and Water Storage - Group Goals

1. By 2035 reduce water consumption by some percentage through incentives, such as recycling (reuse), increased efficiency, and innovative techniques (i.e. sand filtration).
2. By the Year 2012, the Water Management Districts, in conjunction with Heartland Region Stakeholders, shall create a regional water master plan that will identify critical water areas for conservation, storage, and recreation, and mechanisms to implement by directing growth, and providing incentives with the result of drought proofing the Heartland by 2060.

Restoration and Management - Group Goals

1. Identify and prioritize restoration and management areas for public water supply, fish & wildlife, agriculture and industry and recreation opportunity by 2020.
2. By 2020 Heartland Resources shall identify sustainable funding sources for ongoing restoration and management projects and by 2035 Heartland Resources shall implement a minimum of 50 % of the identified projects and by 2060 implement 100% of the identified projects