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## **POTENTIAL REPUBLICAN RIVER BASIN CONJUNCTIVE MANAGEMENT PROCESS – ADMINISTRATIVE FACTORS**

### **Potential Oversight Board Duties**

1. Responsible for Basinwide Coordination
2. Establishes Policy Guidelines
3. Sets Management Objectives
4. Establishes Management Area Boundaries
5. Sets Allocations on Consumptive Use Allowed in Each Mgmt. Unit
6. Distributes Public Information

*Allocations may be set through Board use of models to determine how much water can be consumptively used while meeting objectives.*

### **Potential Oversight Board Composition**

1. Four NRDs
2. NDNR
3. Irrigation Districts
4. The Following Interests: Recreation, Municipal, Commercial, Power, Industrial

### **Questions:**

1. Board Authority?
2. Board Membership?
3. Non-Voting Members?
4. Who Appoints?

### **Potential NRD Responsibilities**

1. Board Membership
2. Deciding How to Meet Management Unit Allocations
3. Drafting and Enforcing Rules on Management Unit Allocations
4. Monitoring Water Use
5. Educational/Conservation Activities
6. General Implementation

**Potential NDNR Responsibilities**

1. Monitoring Water Use
2. Monitoring Compliance with State Laws and Interstate Compacts
3. Providing Staff Support to Board??
4. Board Membership

**Potential Management Objectives Include:**

1. Compliance with a given interpretation of the Compact
2. Managing target streamflow by subbasin
3. Maintaining existing groundwater levels and surface flows
4. Other?

**Potential Guidelines Include:**

1. Maintaining equity between surface water and groundwater users
2. Maintaining equity between subbasins
3. Accounting for changes in physical conditions (such as increased adoption of conservation measures)
4. Maximizing economic benefits
5. Equalizing economic benefits across the basin
6. Flexibility

*Some type of multi-objective decision process may be needed to help decide how to best meet the chosen combination of objectives and guidelines.*

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## Discussion of Safe Yield

Statement: "Nothing will get worse"

Let's look at Frenchman Creek and use the data from the gage at Culbertson.

There are approximately 1182220 acres of drainage area above this point in Nebraska.

If we make the assumption that there is 2" of recharge annually there is 2364440 acre-inches of recharge to the area.

Base flow of the stream needs to be considered.

In 1936 base flow was estimated to be 152 cfs or 1320200 acre-inches annually

In 1961 base flow was estimated to be 108 cfs or 938040 acre-inches annually.

In 1999 base flow was estimated to be 50 cfs or 434280 acre-inches annually.

If you would like to keep the situation static ("Nothing will get worse") you will have to subtract 434280 acre-inches off of the recharge (18%).

There is an estimated 300000 groundwater irrigated acres in the Frenchman Creek Basin.

**Total allocation would be 6.4 acre-inches.**

Anything more than that would be *making things worse*.

If you want to return to 1961 levels of base flow, the allocation is reduced to 4.7 acre-inches.

If you want to return to 1936 levels of base flow, the allocation drops to 3.5 acre-inches.