City of Carson City
Agenda Report

Item # 19

Date Submitted: July 2, 2009

Agenda Date Requested: July 16, 2009
Time Requested: 20 minutes

To: Mayor and Supervisors

From: Public Works Department

Subject Title: Presentation on the North Douglas County Water System Analysis and acceptance of the report. (*Burnham*)

Staff Summary: Staff has been working with Douglas County, the Town of Minden, and the Indian Hills General Improvement District regarding a regional water supply system that connects all the entities together. A study of how to connect the systems has been conducted and staff and consultants will present the study to the Board and request the Board accept the report. Staff will then develop Interlocal Agreements to begin implementation of the study recommendations. Carson City owns water rights within the Carson Valley and the regional system would supply those water rights to the city for distribution to its users. Additionally Vidler Water Company may buy water rights from Minden and will need to transmit the water through the City and therefore an agreement with Vidler may also be necessary.

Type of Action Requested: (check one)
(____) Resolution (____) Ordinance
(__X__) Formal Action/Motion ( ) Other (Status Report)

Does This Action Require A Business Impact Statement:(___) Yes (XX) No

Recommended Board Action: I move to accept the North Douglas County Water System Analysis.

Explanation of Recommended Board Action: The project envisioned has significant regional benefits as it provides infrastructure which allows for intertie of the regions water systems to provide a reliable water supply for the future to all the entities participating. Overall costs are just over $20 million and Carson City's share is almost $6 million. The system will provide Carson with about 2500 gpm at the south end of the City. The City future water plans anticipate this supply and the costs are less than most other sources of water supply that are available.

Fiscal Impact: Approximately $6 million

Funding Source: Water Fund

Explanation of Impact: Funding will be combination of capital expenditures and on-going operation expenditures.

Alternatives: NA

Supporting Material: Executive Summary

Prepared By: Andrew Burnham, Public Works Director

Reviewed By: _____ Andrew Burnham Date: 7-7-09

Concurrences: _____ Date: 7-7-09

Nancy Paulson Date: 7/7/09

Melanie Barkett Date: 7-7-09

Board Action Taken:

Motion: _____ 1) _____ Aye/Nay

2) _____

_____

_____

_____

_____

_____

(Vote Recorded By)

EXECUTIVE SUMMARY

E1.0 Introduction

A study was authorized by Douglas County to explore the possibilities of utilizing water supplied by the Town of Minden to meet the demands of Douglas County, Indian Hills General Improvement District (IHGID), Carson City and the Vidler Water Company. The purpose of the study is to provide a recommendation as to the proposed improvements required to provide water supply to the above referenced entities. Manhard Consulting assembled multiple existing water models and utilizing various demand scenarios in order to identify two viable alternatives capable of delivering the required demands to Douglas County, IHGID, Carson City and the Vidler Water Company.

E2.0 Demand and Supply

Based on multiple meetings with all of the entities involved, it was determined that the following demands would meet each entities current and future needs as it pertains to the Minden supply source.

TOTAL DEMANDS (GPM)	
Douglas County East Valley	2,500
Douglas County North County	1,550
Douglas County West Valley	950
Indian Hills GID	2,500
Carson City	2,500
Vidler Water Company	2,000
TOTAL	**12,000**

Resource Concepts Inc. (RCI), the Town of Minden's engineer has stated that the current supply in Minden is approximately 9,100 gallons per minute (gpm) and that based on short term improvements the supply will be approximately 11,000 gpm. The long-term maximum supply for Minden is estimated to be approximately 15,000 gpm. Based on the future supply numbers it is feasible that the Town of Minden will be able to supply water to the identified entities in the amounts required. Improvements within the Town of Minden necessary to provide the required demands have not been analyzed as part of this analysis. In addition, the cost associated with improvements located within the Town of Minden is not included, as it was previously stated that the Town would pay for those costs.

E3.0 Alternatives

The study explored in detail two (2) alternatives capable of delivering the required demands to the above entities. The purpose of the alternative analysis is to select a preferred alternative and provide support for final engineering design and construction.

Alternative A would bypass the Douglas County East Valley system and provide supply to IHGID, Douglas County North County/West Valley and Carson City/Vidler by installing a booster pump station on the north end of Minden that is capable of boosting to the Carson City Basin zone. (See Figure 3)

Alternative B would incorporate the Douglas County East Valley system and provide supply to IHGID, Douglas County East Valley/North County/West Valley and Carson City/Vidler by installing a booster pump station on the north end of Minden and boosting to the Johnson Lane tank zone located in the East Valley system. (See Figure 4)

Below are the construction costs for each alternative with phasing considered.

Alternative A Phase I	= $19,920,000
Alternative A Phase II	= $598,000
Total	= $20,518,000

Alternative B Phase I	= $13,120,000
Alternative B Phase II	= $7,626,000
Total	= $20,746,000

The total costs provided above include a 20% construction contingency and a 10% engineering, inspection and testing component.

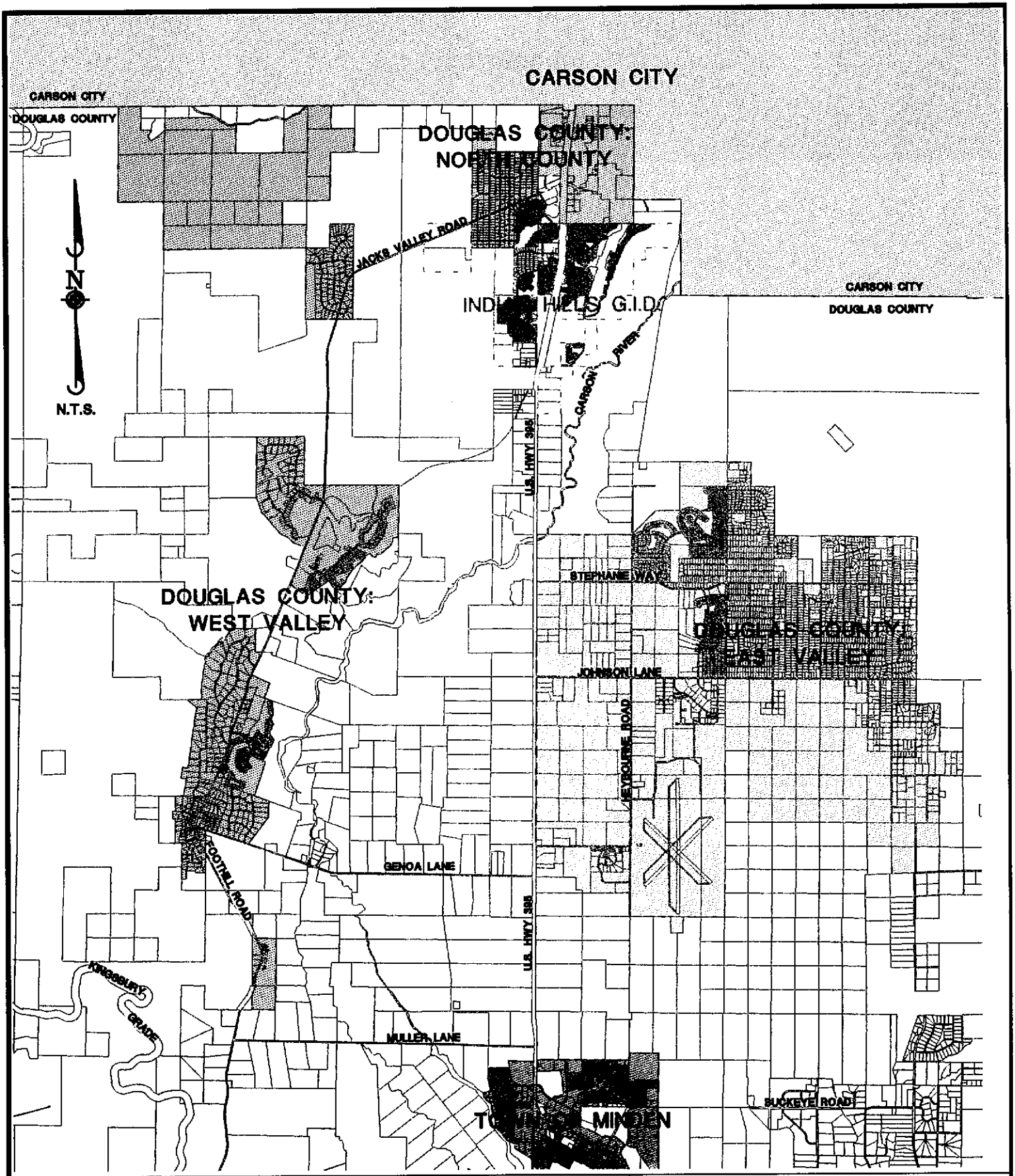
The ability to phase the project is a significant advantage of Alternative B. The Phase I demands can be addressed with a capital cost of $13,120,000 which is an initial savings of $6,800,000 over the Alternative A Phase I costs. The real advantage of Alternative B lies in the ability to defer the Phase II improvements until future development requires Phase II improvements be constructed.

In addition to the ability to phase the improvements, Alternative B is superior from an operational standpoint. Utilizing Alternative B, the Minden Booster Pump Station will be operated off of the Johnson Lane tank level. This is ideal because the Johnson Lane tank can provide a buffer during demand swings within the systems to be served. In addition, the Johnson Lane tank will provide an elevated reservoir for the suction side of the North County and Carson City Booster Pumps.

There are many operational deficiencies within Alternative A. The main concerns would be how to call on the Minden Boosters and the concern that arises from operating the Minden Booster and the North County Booster in series without a tank between the two. There is real concern about how the interface between the proposed inter-tie system and the Carson City system will interact based on Alternative A utilizing a substantial portion of the Carson City distribution system to back feed the North County Booster Pump Station and IHGID.

E4.0 Recommendation

Based on all of the information analyzed during the course of this evaluation. Manhard Consulting recommends Alternative B. The minimal construction cost savings provided by Alternative A should not be the determining factor in this selection process. In contrast, the phasing potential available in Alternative B will not only defer additional cost to a time when it is more easily justified by additional development, it will also allow an initial delivery of supply from Minden in the shortest amount of time. Furthermore, we feel that operationally Alternative B is significantly better.



Manhard CONSULTING

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Civil Engineers · Surveyors · Water Resources Engineers · Water & Wastewater Engineers
Construction Managers · Environmental Scientists · Landscape Architects · Planners

Douglas County Water System Analysis

Douglas County, Nevada

OVERALL AREA MAP

PROJ. MGR.:	DCR
DRAWN BY:	DLR
DATE:	JUNE 2009
SCALE:	N.T.S.

SHEET

FIGURE 1

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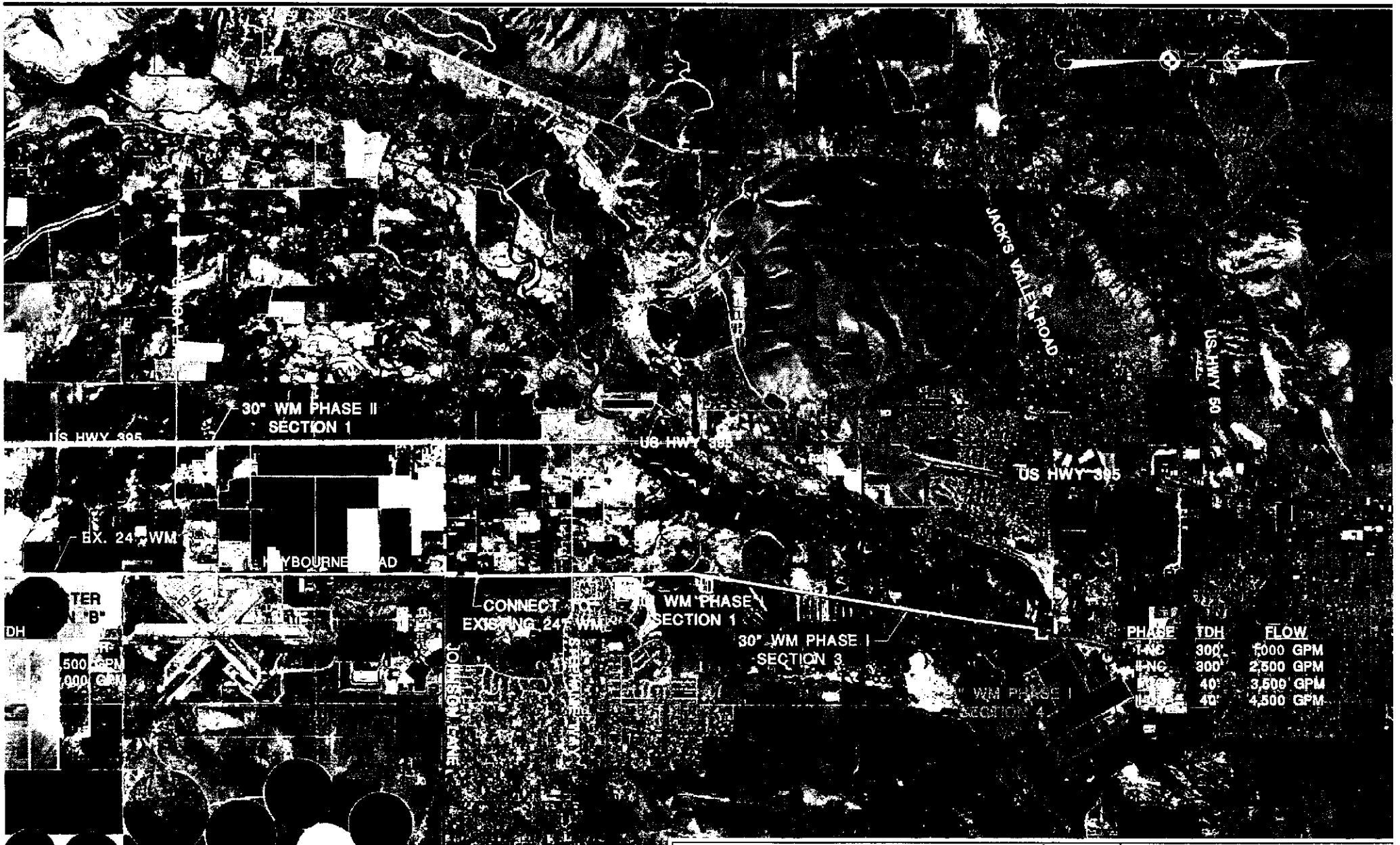

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Douglas County Water System Analysis
Douglas County, Nevada
ALTERNATIVE B

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SHEET
FIGURE 4
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DOUGLAS COUNTY WATER SYSTEM ANALYSIS
COST SHARING ANALYSIS

ALTERNATIVE B - TOTAL COST

COST SHARING BASED ON DEMANDS AND PORTIONS USED	PHASE I	PHASE II	TOTAL
DOUGLAS COUNTY	$2,137,736	$3,227,738	$5,365,474
IHGID	$3,012,222	$2,246,888	$5,259,110
CARSON CITY	$5,692,555	$0	$5,692,555
VIDLER	$2,277,022	$2,151,825	$4,428,847
TOTAL	**$13,119,535**	**$7,626,450**	**$20,745,985**