

## **Summary**

The following report is a result of compiling minutes from the Humboldt County Commission Meetings regarding water/sewer in the Grass Valley area since 1990 and a review of the reports that resulted. The following information is from the minutes on the date specified in the heading. The minutes have been condensed to allow the reader to get a basic chronological idea of the happenings regarding this matter over the years. Some meetings were left out that did not play a significant role for the purpose of this report. In addition I reviewed the reports from Waterresource and one from UN,R, which are summarized at the end of this report. I have also referenced the minutes where the reports are discussed and presented to the board; those headings are highlighted.

## **1991**

### ***3/13/91 Grass Valley Water Study Update***

Nevada State Health Inspector Cindy Ulch completed a Grass Valley Water study funded by the Cooperative Extension Service grant from the state. Approximately 100 residences were sampled starting in January. The majority of the tests show contaminates increasing or staying the same. None of the tests show decreases in contaminates. Ulch noted that she is not sure that the study shows urgent need at this time, as there is nothing to compare the tests to. She suggested sampling the same wells in a couple of years, as the study provides an excellent database for future use.

## **1992**

### ***4/2/92 Grass Valley Moratorium***

The Grass Valley moratorium that prohibits rezoning property to create parcels less than four acres in size was discussed. NDEP advised the continuation of the moratorium. They noted that while there is not an indication of a specific concentrated area of contamination, scattered instances of contamination have been located which appear to be septic systems effecting individual wells. Their concern is water quality based on reports of high nitrates in some wells. This could be a number of things including septic tanks being too close to the well or well not being properly sealed. It could also be an early indication that there is a ground water problem developing. They feel the minimum four-acre zoning requirement would protect the valley's ground water. They recommend that a ground water study be done prior to approving higher density development in the Grass Valley Area. Commission unanimously voted to leave moratorium in place until December 31, 1992. It was also decided to have a survey sent out to the property owners in Grass Valley regarding pursuing feasibility study for a sewer and or water system. The County Administrator was directed to obtain estimates for doing a feasibility study for sewer and/or water system.

### ***11/12/92 Water/Wastewater Planning for Grass Valley***

A Request for Proposal (RFP) to proceed with a feasibility study was discussed. The board was concerned if they should proceed because it appears the residents would be against any type of district to develop a water and/or sewer system for the Grass Valley Area. The County Administrator suggested proceeding with the RFP so that the information is available when action is taken on the moratorium. The RFP was approved with Fransway voting against it.

## **1993**

### ***1/4/93 Grass Valley Moratorium***

Again NDEP supports keeping the four-acre minimum lot size to protect the water quality in the area until such time as a complete ground water study is done for this area. County Building Inspector, Teresa Schroeder and State Health Inspector, Cindy Ulch also recommended that, until a complete study is done, the four-acre minimum lot size be kept in place.

Moreen Martin, representing Les Martin noted that there is not sufficient information available to determine if a trend towards degradation of the ground water is developing.

The following motion was made by Commissioner Milton and passed with Chairman Fransway voting against: To lift moratorium for rezones in the Grass Valley area but still pursue obtaining any funding that may be available for a water quality study. If it is determined that there is not funding available, Board will contact the Grass Valley residents to see collectively what they want to do.

There was further discussion on the advertising for a feasibility study. The District Attorney will need some time to review the matter.

### ***1/21/93 Grass Valley Sewer/Water and Ground Water Study***

District Attorney reported that after additional research, he has come to the conclusion that the Board can't require cost estimates in requests for proposals on professional services. As previously stated the Board would select the firm they feel has the best qualification and experience and negotiate with that firm on a price.

County Administrator advised that she would be filing an application for 106S funding through the State for a ground water quality study.

### ***2/4/93 Grass Valley Area Parcel Maps***

Applications that were tabled previously until the decision of the moratorium were presented. Planning Director still recommends denial of all applications. Legal counsel for residents reviewed other variances and parcel splits that were allowed in 1989, which are adjacent to these properties. They were approved while moratorium was still in effect.

D.A. suggested that a workshop with the Commissioners, Planning and himself to go over what the problems are and work out a solution to same. Milton agreed that they need to review the planning ordinances, etc. A workshop was scheduled.

It was pointed out that Pershing County is still approving subdivisions on the Pershing County side of Grass Valley for less than four acre parcels which is contrary to what Board was told by NDEP. The variance and parcel maps were denied.

### **3/18/93 Grass Valley Sewer/Water Feasibility Study Proposals**

A selection committee was formed to review the proposals received from Consulting Engineering Services, Pyramid Engineers and Land Surveyors, Rice Engineering and Vector Engineering and Waterresource Consulting Engineering.

### **4/15/93 Privatization of Grass Valley Sewer/Water**

A representative from Montgomery Watson and State Health Inspector Cindy Ulch were present to discuss privatization of Grass Valley sewer and/or water. Based on their review monthly cost per household for sewer would be between \$44 and \$60. Cost per household per month for water service would be approximately \$26. Figures reflect no connection fees. Based on their review, Montgomery Watson stated that a fully privatized system might not be feasible at this time. They recommended proceeding with the feasibility study. They also noted that a municipal system may be more feasible than a private one and less costly.

The selection committee to review proposals for the feasibility study scheduled to meet on April 27th.

### **4/27/93 Special Meeting**

The purpose of the meeting was to review Statements of Qualifications and Proposals and the selection process for Grass Valley Water/Sewer Feasibility Study. The Selection Committee members were also present. The board listed the top three firms as Waterresource Consulting, Pyramid Engineers and CES. Staff was directed to contact Waterresource and request their attendance at the May 6th meeting to discuss the cost of the study.

### **5/6/93 Grass Valley Water/Sewer Feasibility Study**

George Ball, with Waterresource Consulting Engineers, Inc. reviewed the tasks as outlined in his proposal. Task 1-3 deal with the planning process and task 4 is to develop growth projections; task 5 will be evaluating the source of supply with regard to water, task 6 will be evaluating and developing alternatives; task 7 will be determining estimated cost of the alternatives that appear feasible; task 8 will be researching funding alternatives; task 9 will be the report to the Board containing all information etc. that went into the study.

The Board approved for Ball to draw up a contract between Humboldt County and Waterresource Consulting Engineers, Inc., for a sewer/water feasibility study for the Grass Valley area with cost not to exceed \$30,000 and present said contract to the Board for final action at the May 17th meeting.

### **5/17/93 Grass Valley Sewer/Water Feasibility Study Contract**

The contract with Waterresource Consulting Engineers, Inc. for water/sewer feasibility study was reviewed with Roy Johnson of Waterresource. Time schedule for completing the various phases of the study were presented. The contract was approved with scope of work to include that Waterresource would participate in public hearings.

## **8/23/93 Special Meeting At Grass Valley School**

The purpose of the meeting was to discuss the potential for water and/or sewer systems in the Grass Valley area. Waterresource Consulting Engineers, NDEP, State Health Inspector and Planning Director were also present.

State Health Inspector Cindy Ulch explained the study she did, noting that those areas mentioned by George Ball, Waterresource did show some contamination. Study was in 1991 and she hasn't had time to go back and look at these again.

NDEP representative said the state's main concern is nitrate contamination of the drinking water. He also noted that the density of approved subdivisions is too high and that the County should look at a community sewer system. NDEP agrees that the best course of action is to get away from septic systems. He noted that they do not have a "red flag" at this time but if something is not done, it could end up going in that direction.

Ball discussed the areas that they would concentrate on such as Star City, Gold Country Estates and the areas adjacent to the two. Ball also explained that they would look at the population growths and projections in the study. Ball also commented that the study would consider expansion of the existing municipal water systems (Star City and Gold Country).

In summary the planning area should include the entire Grass Valley area with emphasis on the higher density areas. Development of a sewer system will be researched first, and they will also look at possible organizational formats including a 318 district.

## **8/24/93 Grass Valley Water/Sewer**

George Ball, Waterresource outlined his understanding of the results of the 8/23 meeting. He is processing three planning areas. One would be a general study of the over all Grass Valley area; the second would be an intermediate area that has some low-density areas; the third area would be the high-density areas which appear to be the most feasible area for initial development of a sewer system. Ball also suggested that Board consider reviewing population projections and then allocating these on a percentage basis to the various areas. This would give them an idea of what kind of sewer loads to plan for.

Ball also outlined proposed changes in regulations regarding the allowable levels of radon and arsenic, which would increase the cost of a water system considerably. Ball did note that the study would include a monitoring program. The study would also include the possibility of hooking to the City sewer and/or water.

## **9/28/93 & 11/22/93 Special Meetings**

### **Grass Valley Water and Sewer Feasibility Report December 1993 - Waterresource**

George Ball, with Waterresource Consulting Engineers discussed the status of the Grass Valley Water/Sewer Feasibility Study. Ball reviewed maps of the planning areas previously discussed. Population and growth figures compiled by Ball also reviewed. Ball noted that the area has shown a growth of 12% per year. As of May 1993, it is estimated that there are 581 units in the planning area resulting in a population of 1,766.

Ball also reviewed related water and wastewater use figures based on his population estimates. He anticipates that in eight or nine years, water use would be approximately 1,000,000 gallons per day.

Ball reviewed sewer system alternatives analysis his firm has compiled which include: 1 connect to City treatment plant, Grass Valley operates conveyance system; 2 connect to City treatment plant, City operates conveyance system; 3 Grass Valley operates treatment plant and conveyance system; and 4 do nothing.

Ball noted that if the system were totally operated by the City, the planning area would have to be incorporated into the City. In discussions he has had with various individuals from the Grass Valley area, this did not seem a favorable option. Based on the information and rating system Ball recommended that a more detailed evaluation as to cost etc. be done on alternatives two and three.

Treatment process alternatives also reviewed by Ball. These include 1 connect to City treatment plant; 2 Grass Valley aerated ponds; 3 Grass Valley oxidation ditch; and 4 Grass Valley activated sludge. Ball recommended detailed evaluation on alternatives one and two.

Ball also presented water system alternatives analysis. 1 connect to City, Grass Valley distributes; 2 connect to City, City distributes; 3 use existing Gold Country and Star City systems, develop system for other areas; 4 develop one combined system; and 5 do nothing. Ball recommends further evaluation on alternatives two and four.

After review and discussion, Board was in concurrence with Ball's recommendations. Ball will proceed on detailed evaluations of the alternatives as to development cost, distribution of such costs, funding etc.

## **1994**

### ***1/19/94 Grass Valley Sewer and Water Draft Feasibility Study***

The purpose of the meeting was to hear a presentation by George Ball with Wateresource regarding draft Grass Valley Water and Sewer Feasibility report. Ball reviewed the summary narrative with those present. He also reviewed the proposed monitoring program included in the report. Ball noted that he would hope that this would include that portion of Pershing County adjacent to Grass Valley.

The monitoring program would require 10 to 20 monitoring wells, which would be sampled quarterly or semi annually. Existing wells could be used and the County could work with the State Health Division with regard to testing, etc.

A hearing was scheduled to inform the residents of the Grass Valley area.

### ***5/2/94 Grass Valley Sewer/Water Feasibility Study (Grass Valley School)***

George Ball of Wateresource presented copies of the *Water and Sewer Feasibility Report (December 1993)*, which he reviewed with those present.

Comments were heard from the public, including Les Martin who discussed effect moratorium has had on growth in the Grass Valley area. He doesn't feel that it is the residents' fault and feels County has to invest in the residents before the residents should have to pay anything.

Milton pointed out that the residents of Grass Valley need to work together to form some type of district or group to address future problems, including water and sewer.

### ***6/6/94 Grass Valley Sewer/Water Feasibility Study***

Milton said that the only decision made at the 5/2/94 meeting was the monitoring system. It was suggested by State Health Inspector Cindy Ulch that the County proceed with the monitoring system as soon as possible. Property owners should be contacted to allow use of their wells for the monitoring program.

The County Administrator suggested doing a mailing asking for volunteers for a committee as suggested by Milton.

### ***6/20/94 Grass Valley Sewer/Water***

The County Administrator reported that the state would do the water sample testing for \$80 per test. She also presented a sample mailing that would be sent to property owners in the planning area requesting volunteers to serve on a committee.

The Administrator was directed to contact private labs for prices on testing. Milton noted that the wells for the system must have a well log and be constructed properly for accurate readings.

### ***6/20/94 Development Standards/Les Martin***

Les Martin met with the board for information and legal opinion on development standards, etc. in the Grass Valley area. He requested input on why his rezone application was denied. He commented that Board does not follow State statutes with regard to parcel size on which a well and septic tank can be located.

D.A. suggested that Board allow him to do some general research on Martin's concerns so that he can make determinations if Board has done anything incorrectly.

### ***7/5/94 & 8/15/94 Grass Valley Sewer/Water***

The County Administrator presented recommendation from NDEP for the monitoring and advised that the State Health Inspector Cindy Ulch recommends the testing of total dissolved solids, nitrates and chloride. The cost through the state lab is \$24 per sample.

### ***9/21/94 Grass Valley Sewer/Water Facilities Planning Joint Meeting***

The Pershing County Commissioners and NDEP were present. Nelson from NDEP reviewed history of correspondence and contacts between the State and both Pershing and Humboldt Counties. Both Counties have been informed by the State that if a subdivision application were submitted for the Grass Valley area, the State would require them to have a ground water study done or a model developed showing the effect the subdivisions would have on the ground water in the area.

### ***11/3/94 Grass Valley Ground Water Monitoring***

The Pershing County Commissioners met with the Board to discuss sharing the cost of a ground water monitoring study for portions of Grass Valley. The following motion was passed. That staff contact Wateresource and notify them that Humboldt County would like to pursue a ground water monitoring system and that he contact Pershing County in a cooperative effort.

## **1995**

### ***1/3/95 Grass Valley Water/Sewer***

The proposal from Wateresource Consulting Engineer, Inc. to develop a groundwater monitoring study for Grass Valley within Humboldt and Pershing Counties was presented for review.

### ***1/17/95 Joint Meeting with Pershing Commissioners Regarding Wateresource Proposal***

Pershing County voted unanimously to fund one third of George Ball, Wateresource's proposal or \$6,490.

### ***2/6/95 Grass Valley Groundwater Monitoring Study***

Humboldt County's responsibility for two-thirds of the cost of the groundwater monitoring study in the Grass Valley area was approved at \$12,986.65.

### ***2/21/95 Grass Valley Area Groundwater Monitoring***

The contract between Wateresource Consulting Engineers and Humboldt County for the monitoring study was approved with the cost not to exceed \$19,480.

### ***6/5/95 Grass Valley Groundwater Monitoring Program***

Wateresource reviewed their preliminary report and recommendations on design and implementation of a Grass Valley area groundwater monitoring system. Sierra Environmental Monitoring (\$42 per sample) was recommended over the State Lab (\$24 per sample). The D.A. will prepare letters of understanding as suggested by Wateresource. Individual needed to do the testing will be trained by the lab.

### ***7/17/95 Humboldt County/BLM/Winnemucca Farms Land Exchange***

This is in relation to the application to BLM made by the County for 481 acres in the Grass Valley area for a recreation facility. Winnemucca Farms explained that they would like to pursue an exchange with BLM for the land. They would clean up the land and put land under cultivation and irrigation with costs borne by Winnemucca Farms. If within five years of an exchange, the County desires to develop recreational facilities, Winnemucca Farms would deed up to 250 acres of this land for the County's development.

### **9/11/95 Grass Valley Groundwater Monitoring Program**

The training/phase I two day testing begins.

### **10/2/95 Grass Valley Groundwater Monitoring**

The first samples have been taken. The results will be sent to participants and interested parties.

### **11/6/95 Grass Valley Groundwater Monitoring Program**

The authorization for purchase of a sounding device was approved.

### **11/6/95 Expansion of City Sewer**

The expansion to serve portions of the Grass Valley area in relation to the planned City sewer expansion discussed. Mayor Vesco stated that if the treatment needs become too excessive, they would have to go into a mechanical treatment facility, which is very costly. This is included in the Wateresource study. The City Council will look into this further.

### **11/13/95 Special Meeting**

The citizens did not approve of the recreational facility, based on this fact the land should be released. The motion was approved that Board relinquish 200+/- acres of original R.P. and P. lease with BLM for that particular acreage and that Board enter into some type of Memorandum of Understanding (MOU) with Winnemucca Farms as to the application of water and how it can benefit the County.

### **12/4/95 Grass Valley Groundwater Monitoring Program**

#### **Grass Valley Groundwater Monitoring Program Report November 1995 - Wateresource**

Wateresource presented final report regarding the Monitoring Program. The results indicate that 19 out of 79 tests suggest an increase in chlorides, nitrates and total dissolved solids.

The results do not suggest a valley-wide contamination from septic tanks; the program will provide information on trends in this regard over a period of time. The program will monitor water level to determine if there is a trend in this regard as well.

### **12/4/95 UNR Groundwater Survey Proposal**

Request from Dean Adams, UNR to conduct a study of groundwater wells in the Winnemucca area in cooperation with NRCS. He would design the program to fit with the current monitoring program. His program would provide additional testing data on lead, copper and coliform. The Board approved the program, and it will be funded by grants.

### ***7/17/95 Grass Valley Water/Sewer***

State Health Inspector Cindy Ulch met with the Board to discuss a septic tank/sewer hookup policy for the Grass Valley area with regard to denitrification systems. Commissioner Milton stated that he would prefer to see a sewer system installed and suggested that Board look at implementing impact fees.

## **1996**

### ***4/15/96 General Plan Amendment/Grass Valley Area***

An amendment was discussed to change the designation of an area from RR Rural Ranchette 2.5 acre minimum lot to MDR Medium Density Residential 1 dwelling per 1.25 acres for property located off W. Commander Dr. and Westmoreland Road. It was denied.

### ***6/3/96 BLM Lease/Purchase/Land Exchanges***

Requests from BLM for County comments on applications, one of which is for Winnemucca Farms on exchanges of four parcels of land in the Grass Valley and Jungo Road areas discussed. Three of the parcels under consideration are in the Grass Valley area and have been identified by BLM for disposal to local governmental entities as the need for such lands is indicated through community planning documents. Milton noted that Section 10 was marked as a potential site for a sewage disposal facility for the Grass Valley area in the Waterresource study. The Board agreed that it would not be in the County's best interest to have this section released at this time.

### ***7/8/96 Groundwater Monitoring Project***

David McLean, Jackson Road resident, and Mary Ann Hammond, Davis Lane resident discussed nitrate contamination in their wells. They both want wells in their areas included in the monitoring program. Agendized for August.

### ***8/5/96 Grass Valley Groundwater Monitoring Program***

The inclusion of Davis Lane and Jackson Road wells discussed. McLean reported that a representative from the University would be meeting with Jackson Road and Davis Lane residents to discuss the information he is collecting and about including these areas. The Board agreed to attend said meeting.

### ***8/19/96 Meeting In Grass Valley***

This meeting was scheduled by Dave McLean to discuss groundwater quality problems. The Board explained that members will not be attending meeting at 7 pm to participate as the Commissioners and will not be entering into the discussion or consider any action.

### ***9/5/96 Grass Valley Groundwater Matters***

Dean Adams with UNR presented maps they prepared showing results of historical water samples test data in the Grass Valley area. He also presented status report on progress toward designing and

implementing a supplemental groundwater monitoring program for developing areas of Humboldt County to augment the County's existing groundwater monitoring program.

The area was broken into six sections. They plotted TDS, Chlorites and Nitrates in each area. Trends are not readily apparent at several of the test sites. Some show a decrease, which appears to be the result of the wells being drilled to a deeper level. Some show that consumption of the water is not advisable.

McLean questioned who established five as a high nitrate level and Adams stated that State Health established this. Adams generalization is that the most recent data in some areas show a dramatic increase in concentrations. Adams stated that the three items were tested because they related to contamination from septic systems. Adams stated that he cannot make any recommendation as to growth or no growth at this time. Time frame to get sufficient data is approximately two years.

Adams reported a grant and in kind donations that will include cost of public meetings, education for wellhead protection, etc. The grant funds will be available in February 1997.

Les Martin expressed concern that Gold Country Estates and Star City data are not included. Adams agreed that they would be looking at this as well. The motion was approved to prepare letter of support to be included with the Nevada Nonpoint Source Program grant application.

Dave McLean and Steve Tibblas of the Grass Valley Ad Hoc Citizens Committee met with the Board to discuss groundwater, etc. in the Grass Valley area. McLean stated that approximately 20 people were present at the first meeting last night. The first request by the Committee is that the Board approve funding for a study of Grass Valley groundwater from supplemental Community Development Block Grants and/or expenditure of County funds. McLean stated that he does not feel they can count on getting the grant, and Board needs to look at alternate funding sources. McLean noted that he has requested that NDEP send letter to the County with regard to urgent need in order to meet CDBG criteria. Chairman Fransway agreed that the County would also contact NDEP and request such a letter.

McLean also requested that Board establish a Grass Valley General Improvement Fund and provide a list of itemized expenditures for capital improvement in the Grass Valley Area during FY1996-97 as residents of Grass Valley feel they are being financially neglected. It was suggested that they approach the board during the budget process. As to itemized expenditures for capital improvements, board agrees that same will be provided.

Board discussed request from Ad Hoc Citizens Committee to periodically review the finding of UNR's proposed monitoring program. This was agreeable with Adams and the Board.

### **9/30/96 Grass Valley Sewer/Groundwater Monitoring Program**

Wateresource presented their proposal to develop preliminary design and construction cost estimates for a new alternative sewer collection technology (STEP System) involving the use of existing septic tanks and small diameter sewer force mains. Cost estimate is \$12,500. George Ball, Wateresource reviewed the difference between a conventional and the STEP system. The STEP carries liquids from septic tanks only and would not be handling the septic tank solids or scum. The County would have to set up some means of operating and maintaining the facility (County department or general improvement district). The septic tank owner would be responsible for the plugging outlet of septic tank to leach line and installing required pump to pump effluent from their septic tank to the main.

Entity responsible for operation and maintenance would be responsible for maintaining the pumps; if pump failed and had to be replaced, the cost would be the property owners responsibility.

The STEP is considerably less expensive. Ball said that the conventional system found to be most feasible at the time of his 1993 report would be so costly that is almost impossible to do. He would also update cost figures for systems reviewed in his 1993 study.

Ball stated that the STEP system is a permanent system and has the same longevity as the conventional sewer system. He feels the STEP system is applicable to the Grass Valley area because everyone in the area already has a septic tank. Milton questioned if they could add to the service area outlined in the 1993 study and Ball said yes. Ball also said the system could be expanded as development occurs.

The alternative collection feasibility study at a not to exceed cost figure of \$ 12,500 was approved.

Ball also reported on the County's monitoring program. The program is almost a year old now. The majority of the sites show a slight decrease in concentration with one site showing a ten fold decrease. The Jackson Road well is being added to the program.

As to semi-annual sampling vs. quarterly sampling as suggested by McLean, Ball feels there would be very little difference in the test results. Ball also discussed Winnemucca Farms operation and its possible effect on the groundwater quality. He explained that their irrigation is creating a groundwater mound, which suggests that the potential exists for water to flow away from mound to adjacent shallow wells. The issue needs to be studied further and more monitoring wells are needed to determine what effect they are having. Ball stated that he recommended using existing wells due to the cost of drilling monitor wells.

Ball stated that the monitoring does show: a regional Grass Valley area problem does not exist at this time, Winnemucca Farms impact has not been fully defined at this point and needs more research by the firm that Winnemucca Farms and NDEP have hired; denitrification systems do work, ultimate solutions for the study are in some type of sewer system.

McLean insisted on an increase in the sampling schedule and Ball said that he would like to review the results of the third set of samples before making any determinations. McLean also questioned the length of time the water is allowed to run before the sample is taken and whether time was sufficient to adequately flush the well casing. Ball stated that he does not feel they would see much difference in levels between running water for 15 minutes or four hours. State Health Inspector Cindy Ulch agreed that there is no significant change for the three constituents being measured in the county's program.

### **10/7/96 Grass Valley Groundwater Monitoring Program**

John Siegfried presented items from Ad Hoc Committee. The sampling methodology for wellhead protection program and quality of the water samples being obtained discussed. Committee feels well casings are not being adequately flushed, and would like Board to select three wells representing low, moderate and high levels of contaminants to take samples for 15 minutes intervals over one hour. Hawkins noted that arsenic and heavy metals testing would require running wells longer based on discussion with State Health Inspector Cindy Ulch at 9/30 workshop. Board and Siegfried agreed there was not a need to pursue this further.

The installation of additional monitor wells discussed. Committee feels the wells currently being tested may not be properly placed to monitor for density. George Ball, Wateresource has stated in the past that he can see no need for the County to drill additional monitoring wells; Board agreed.

### **10/21/96 Grass Valley Groundwater Monitoring**

McLean had questions on the results of the latest testing and requested copies of the static water levels. He also questioned if the wells that had been dropped would be replaced. Hawkins noted that 3 were those property owners that did not wish to continue being a part of the program. Two others had been added without any authorization.

### **11/7/96 Grass Valley Groundwater Monitoring Program**

Once again McLean's requests were discussed. The Ad Hoc Citizens Committee wants the board to install groundwater-monitoring wells.

Milton stated he has talked to George Ball, Wateresource about increasing the size of the study area, and a map was presented. Ball and NDEP agree that the quantities of wells are adequate to monitor the effect of Winnemucca Farms. Chairman Fransway stated that he would ask that the McLeans not be redundant with their requests. Fransway stated that he was disappointed in the McLeans and especially the letter to the editor regarding "I don't care bears".

Later under public commentary Mrs. McLean expressed her concerns that the comments made by Chairman Fransway regarding her letter to the editor were inappropriate. She commented that she feels this was a form of harassment, and felt they were being attacked. She did also say that she did not make references to any person in her letter to the editor. She has rights under the first amendment.

With regard to the request for additional wells it was stated that Wateresource had not indicated the need as reported in Ball's 1996 report.

### **11/7/96 Acquisition of Gold Country**

It was approved to proceed with an independent review of the system to make sure system is solvent and confirm value of the system as well as the water rights and then pursue negotiations on the acquisition by purchase of the water system, its value, etc.

### **11/21/96 Grass Valley Groundwater Monitoring**

The third testing series for the monitoring program was received. George Ball, Wateresource stated that since there are wells showing an increase, Board might want to consider going to quarterly testing. Quarterly testing for one year was approved.

Hawkins reported that UNR has made the short list in regards to the grant for the monitoring program.

### **12/16/96 Grass Valley Groundwater Monitoring Program**

Staff advised that George Ball, Wateresource stated lengthy testing on three wells in connection with the monitoring program is unnecessary and one well will be sufficient.

**1997**

***1/21/97 Grass Valley Water/Sewer***

**Grass Valley Water and Sewer Feasibility Report Addendum January 1997 -  
Wateresource**

Wateresource presented updated Grass Valley water/sewer feasibility study including feasibility of STEP sewage treatment system.

An expanded planning area was incorporated in the facilities conceptual layout as directed by the County. The estimated population within the expanded planning area is 2,468 and is estimated to increase to 4,560 by the year 2012. It is estimated that the present average day wastewater produced is 487,000 gallons per day.

***2/3/97 Grass Valley Groundwater Monitoring Program***

A letter from Ad Hoc Committee requesting that the County add one domestic well on Teal Lane and two in the Delaney/Lambert Estates area to the groundwater monitoring program presented.

Delaney/Lambert is not part of Grass Valley and Dean Adams with UNR will look at areas outside of the County's scope of water sampling. The Teal Lane request will be forwarded on to George Ball, Wateresource for his recommendations.

A motion to refer this request to Dr. Adams and get his response and then bring this back to the Board for further consideration and possible action was approved.

***5/5/97 Grass Valley Groundwater Monitoring/Sewer/Water Planning***

Staff reported Dr. Dean Adams with UNR has submitted a work plan regarding groundwater monitoring in Humboldt County to the State and needs to make some minor amendments and present it to the State again for final approval.

***6/2/97 Grass Valley Groundwater Monitoring Program***

Wateresource summary was presented regarding the 17 monitoring program sites. Of the 13 sampling points that have been monitored for 1 1/2 years, 11 of them indicate an increasing trend for nitrate as nitrogen with 2 samples indicating a downward trend. This suggests that the contribution of sewage from the Grass Valley area to the groundwater system will eventually have an impact on the groundwater basin increasing the 3 primary constituents that are in the monitoring program. He did note that the majority are significantly well below the limit of 10 mg/l. The trends emphasize the important of continuing the feasibility/planning process for a waste water collection and treatment system for the densely populated portion of Grass Valley.

George Ball, Wateresource also noted that the multiple sampling performed for an hour did not indicate any significant difference. He recommends that this multiple time sampling be discontinued.

### **1/6/97 Grass Valley Groundwater Monitoring Program**

Memo from Wateresource regarding issues associated with McLean's sampling methodology presented. George Ball, Wateresource does not feel it is necessary to do multiple samples. State Health Inspector Cindy Ulch stated that extended sampling should not be performed during the winter months in that freezing could be a problem.

### **2/18/97 Grass Valley Groundwater Monitoring Program**

George Ball, Wateresource report on the latest testing for the monitoring program was presented.

Also UNR Groundwater monitoring program reported on by Chairman Milton. Adams is furnishing the work plan to NDEP. When the plan has been received by NDEP they will allocate the money for the program. Adams also wants a workshop for the Commissioners, NRCS and the Bureau of Health Protection to finalize what areas should be included in the program.

### **2/3/97 Public Commentary**

McLean presented a letter between Ad Hoc Committee and George Ball, Wateresource with regard to questions they wished answered. McLean stated it is disturbing to him that Ball has not addressed the questions. These are tax dollars, and McLean feels Ball should respond. McCormick pointed out that the contract is between the Board and Wateresource, not individual residents. Such requests should be brought to the board.

### **4/7/97 Grass Valley Groundwater Monitoring Program and Water/Sewer System Planning**

The engineering services proposal from Wateresource for investigation/evaluation of funding sources for a Grass Valley Sewer System, preparing a conceptualization of Phase I on the sewer project and presenting a summary report to the Board presented. The total for Tasks 1-5 is a not to exceed amount of \$19,900. The motion was approved.

### **9/2/97 Grass Valley Groundwater Monitoring Program**

Information was presented for the most current testing of the 17 wells in the monitoring program. Of the 13 sampling points that have been monitored for the 1 3/4 years, 9 of them indicate an increasing trend of nitrate as nitrogen, 3 samples indicate a downward trend and one of them remains fairly flat. This suggests that the contribution of sewage from the Grass Valley area to the groundwater system is impacting the groundwater basin. The significant majority of the nitrate as nitrogen values are well below the 10 mg/l limit, with 6 of the 17 values at or below 1.0 mg/l s of the 6/97 sampling; however, 9 of the 17 values were below 1.0 mg/l just three months previous. These trends emphasize the importance of Humboldt County continuing the feasibility/planning process for a wastewater collection and a treatment system for the densely populated portion of Grass Valley.

## **12/1/97 Grass Valley Groundwater Monitoring Program**

The memo from Ball regarding the latest testing of the 17 wells in the monitoring program was presented. Of the 13 sampling points that have been monitored for two years, 8 of them indicate an increasing trend for nitrate as nitrogen, 3 samples indicate a downward trend for nitrate as nitrogen and 2 of them remain fairly flat. All four sampling points that have been monitored for the last year show an increasing trend for nitrate as nitrogen concentrations. This suggests that the contribution of sewage from the Grass Valley area to the groundwater system is impacting the groundwater basin. Again he emphasized the continuation of the feasibility/planning process for a wastewater collection and treatment system for the densely populated portion of Grass Valley.

George Ball, Waterresource also noted that two of the sites are flat lined for nitrates. The sites are located in the southern most region of Grass Valley up gradient of the predominant septic systems input to the groundwater system and as such are seemingly unaffected by the influence of septic sewage entering the groundwater.

## **1998**

### **1/26/98 Grass Valley Water Quality and Sewer Planning Matters**

#### **Grass Valley Sewer Collection/Treatment System (Phase I) Concept and Funding Investigation/Evaluation January 1998 - Waterresource**

George Ball, Waterresource reported on Grass Valley area water quality and sewer planning matters. Results of the Grass Valley Groundwater Monitoring Program reported on by Ball. He noted that six wells which are sampled and reported separately to the Bureau of Health Protection Services annually have been included as part of his summary. Of the 13 sampling points that have been monitored by the County for 27 months, 10 of them indicate an increasing trend for nitrates. All four sampling points that have been monitored for the last 15 months show an increasing trend for nitrate concentrations. This suggests that the contribution of infiltrating sewage from the Grass Valley area to the groundwater system is impacting the groundwater basin. Again the trends emphasize the importance of Humboldt County continuing the feasibility/planning process for a wastewater collection and treatment system to serve the densely populated portion of Grass Valley. The Gold Country and Winnemucca Farms wells are indicating an increase. In his opinion there is not a crisis situation at this time but trends indicate the need for continued monitoring and work toward development of a wastewater collection/treatment system to serve the densely populated portion of Grass Valley.

Ball also presented sewer Collection/Treatment System (Phase I) Concept and Funding Investigation/Evaluation information. Ball explained that the primary objective of this investigation was to evaluate the various funding avenues available to the County for purposes of constructing a sewer collection and treatment system in Grass Valley. Funding areas researched were NDEP, USDA, CDBG, EDA and others.

Phase I area is comprised of approximately 750 units with sewer flow per household at 375 gallons per day/unit. The STEP system has a probable construction cost estimate of \$6,272,000. As to sewer treatment and disposal, alternatives were researched:

- a. A stand-alone treatment plant and disposal system in Grass Valley having a preliminary cost estimate of \$2,035,000 to construct.
- b. A short term connection to Winnemucca Farms treatment and disposal system for considerably less capital investment, followed by a second project in the future to expand Winnemucca Farms' system to accommodate their and Grass Valley's growth.
- c. A short term and/or long term connection to the City of Winnemucca collection, treatment and disposal system with possible participation by/with Winnemucca Farms to achieve economies of scale possible from the combined operation.

Ball suggested that the Board approve the preparation of funding request applications for the treatment and disposal system in Grass Valley. While the loan application is under review, several concurrent tasks should be explored:

- a. Meetings and application to BLM to obtain the requirements and conditions of obtaining Section 10 for the treatment and disposal site.
- b. Interest and benefits to Winnemucca Farms in a joint project to treat and dispose of the Grass Valley waste water on Winnemucca Farms property for short term and long term periods.
- c. Interest and benefits to the City of Winnemucca in a joint project to treat and dispose of the Grass Valley waste water in location(s) suitable to the City for short term and long term periods.
- d. Form a task force of County, City and Winnemucca Farms representatives to study the costs and advantages and disadvantages of combining wastewater treatment facilities' construction and operations for both short term and long-term horizons.

Ball stated that the next step is for the Board to make a determination on whether a sewer system is needed and when. If it is determined that it is needed then a financial analysis needs to be completed. Board also needs to determine if connection to the City sewer or Winnemucca Farms are viable alternatives. Board needs to hold a public hearing in Grass Valley to keep the residents informed.

After questions from the audience, Ball explained that based on test data collected over the last couple of years, the nitrate value increases are directly related to septic tanks. Ball noted that Grass Valley discharges to the Humboldt River and not the other way around as commented by Boggio. Ball also clarified that monitoring wells consists of existing individual domestic wells. As to possible impact on increasing values by Winnemucca Farms waste water discharge, Winnemucca Farms is now treating waste from the potato plant and not discharging it directly onto the ground as done in the past.

Ball also explained that the groundwater flow is from the south to the north and the majority of monitoring wells are up gradient of Winnemucca Farms so he does not believe trend indicates what Winnemucca Farms has or has not done.

Motion approved to request Wateresource to put together a proposal for the submittal of a feasibility report and preparation of a financial analysis for a sewer collection/treatment system in the Grass Valley area as well as proceed with funding applications.

## ***2/2/98 Grass Valley Groundwater Monitoring Program/Sewer/Water Issues***

MBAS (Methyl Blue Active Substances) testing will be included in the next sampling as recommended by State Health Inspector Cindy Ulch to clear up the debate on the effect of septic tanks vs. Winnemucca Farms on groundwater quality.

It was also decided to include the Grass Valley School in the costing, etc. so it would not have to be added later.

### ***3/9/98 Grass Valley Groundwater Monitoring Program***

Update regarding Dean Adams UNR monitoring program was presented. The first samples were taken.

### ***6/1/98 Grass Valley Groundwater Monitoring Program***

Report from George Ball, Wateresource regarding the most recent set of testing was presented. Ball is recommending that some sites be monitored every six months. Ball and Dean Adams both indicated that the MBAS test which tests for detergents won't be able to pinpoint the source since waste from both Winnemucca Farms and septics have detergent in it.

### ***6/15/98 Grass Valley Groundwater Monitoring program***

Report recommendation from George Ball, Wateresource regarding monitoring program sampling, etc. presented for consideration and action. The information is for three constituents (TDS, nitrate as nitrogen and chloride) and static water levels. Of the 17 sites, 13 have been sampled for 30 months and 4 have been sampled for 18 months. With the inclusion of the date from March 1998 the graphs indicate an upward trend in Nitrate concentrations at all sites except for 250 McNeil and Sunset Drive, the trend for Mercury Avenue changed from decreasing to increasing since the last testing. Based on an analysis of the data Ball recommended that sampling of 11 of the wells be every six months and 5 of them continue at 3 months. Ball is recommending monitoring only 3 of the wells for MBAS. MBAS measurement is an indicator of sewage source and is a common element from detergent. He is unable to draw a conclusion from the date because levels are below the accuracy of the test.

### ***7/13/98 Grass Valley Groundwater Monitoring Program***

Follow up on recommendation from George Ball, Wateresource's report from the 6/15 meeting. Per Board's direction MacLean's comments to Ball regarding changed to the program were forwarded and Ball was to make any changes that Ball may recommend. Ball stands by his initial recommendations.

### ***8/3/98 Grass Valley Groundwater Monitoring Program Update***

George Ball, Wateresource's Report on recent sampling presented. Three of the wells continue to indicate an upward trend in Nitrate, while one well continues to indicate a downward trend. The MBAS concentrations are still below the water quality standard. Therefore no additional MBAS testing is recommended.

### ***12/21/98 Grass Valley Groundwater Monitoring Program***

The program update from the September testing, report by George Ball, Wateresource presented. In summary, of the 14 upward slope trending sites from nitrates, three are minor or relatively flat slope; a majority of the monitoring sites continue to show an increasing trend. The monitoring results are showing a cyclical trend as well as some interesting changes, i.e., well site #8 (Jackson Road) which has demonstrated a downward trend in nitrate for one year. With the next six months monitoring

date, Wateresource will provide a more analytical, in depth evaluation of the data. Wateresource will advise of the estimated professional services cost and review same with the Board prior to performing the in depth evaluation.

### **10/19/98 Gold Country Water System Acquisition**

Status of the acquisitions presented. Hawkins reported that it is 95% complete. She also reported that the Grass Valley Water Service Ordinance is being drafted and should be set for public hearing. The tentative agreement to purchase Gold Country Water System includes a ten-year owner financing in the amount of \$300,000. Board needs to make a determination today that the medium term financing is necessary. The motion was made and passed that the board has determined that medium term financing in the amount of \$300,000 over ten years at 6% interest is necessary for the purchase based on items previously stated and direct staff to publish notice of intent to enter into medium term financing.

## **1999**

### **3/8/99 Grass Valley Phase I Sewer System**

#### **Grass Valley Phase I Sewer System Funding Request Proposal March 3, 1999 - Wateresource**

Professional engineering services proposal from Wateresource of regional sewer system concept and preparation of funding application(s) for Phase I of the Grass Valley Sewer System discussed with George Ball, Wateresource. Estimated fee to perform Phase I (Regional System Concept Review) is not to exceed \$8500 and services will be invoiced on a time and expense basis, pursuant with the current Schedule of Fees. Estimated duration of Phase I is ten weeks. Ball noted that the tasks associated with Phase II would be finalized and a fee determined after completion of Phase I. Phase I includes Regional System Concept review which requires discussions with the County, City and Winnemucca Farms to ascertain if there is a future feasibility for integration of these entities into a regional sewer system. Milton noted that if they proceed with Phase I Dr Parlasca should be included in the discussions due to fact that he has a subdivision development plan for Vista Ridge, which includes a sewer system. Motion was approved to proceed with Phase I sewer system with the three tasks as outlined at a cost not to exceed \$8500.

### **6/7/99 Grass Valley Groundwater Monitoring Program Update**

The Monitoring Program update was presented. George Ball, Wateresource noted that 7 wells continue to have an upward trend in Nitrate. Three wells have a downward or near flat trend. Ball noted that well 11 changed from a slight upward trend to a slight downward trend since the last sampling. He recommended moving two more wells to six-month sampling intervals.

## **12/6/99 Grass Valley Sewer Update**

### **Grass Valley Phase I Sewer System Phase I - Regional System Concept Review November 30, 1999 - Waterresource**

George Ball, Waterresource presented the final Technical Memorandum for the Grass Valley Sewer System, Phase I (Regional System Concept Review). Cost estimate for the plan including an environmental assessment is \$70,000. The collection system including engineering and construction management is estimated at \$7,930,000. Treatment, including engineering and construction administration is estimated at \$2,650,000. Total estimated cost is \$10,650,000.

Ball noted that the need and participants to create a Regional Wastewater Treatment and Disposal Facility in the Grass Valley area exists; the timing does not appear to be feasible, primarily due to the overall economy of Humboldt County. Development of funding resources appears feasible particularly in a joint venture scenario. The project is listed on the Nevada State Revolving Loan Fund Project Priority List for fiscal year 2001, for a total of \$10,850,000. This project priority list indicates a loan award date of April of 2001. He recommends that Humboldt County continue to submit a project priority-listing request for this project in the future.

The need for a Grass Valley treatment and disposal facility is highlighted by the groundwater quality impact from septic tank affluent. A wastewater treatment and disposal facility will be required in the future to manage the wastewater and protect the groundwater resource. Ball noted that 14 of the 17 sites included in the Grass Valley Groundwater Monitoring program have shown an increase in total dissolved solids and nitrates. He did comment that the County does not have a groundwater crisis at this time, which would require immediate action, although the septage affluent is adversely affecting the Grass Valley groundwater resource.

The board agreed to Milton's suggestion to change their focus as an interim measure and modify Ball's contract to develop standards for well construction to meet minimum standards the State has adopted and institute a policy/ordinance requiring new and replacement septic tanks to be denitrifying septic tanks.

The Gold Country Water System has fallen through, and the County putting in their own water system would take many years with regard to obtaining water rights, etc.

## **2000**

### **1/3/00 Grass Valley Sewer Matters**

George Ball, Waterresource presented scope of work related to well inspection and septic systems and Professional Services Proposal related thereto. The professional services estimate for a preliminary study to explore initial steps to form a on site waste management system that would alleviate the nitrate buildup and plant the organizational seeds toward the eventual development of a community sewer system, as well as develop an active roll in domestic well construction management, is \$17,310.00 which is a maximum not to exceed fee. Time frame is 14-16 weeks to prepare and present the final report. The motion was approved.

### **1/18/00 Contract With Wateresource**

Approval of contract with Wateresource for on site Waste and Domestic Well Management System for Grass Valley. An additional \$2570 for the workshop requested by the Board.

### **7/10/00 Grass Valley On Site Wastewater and Domestic Well Management Program**

The draft Technical Memorandum on the Onsite Wastewater and Domestic Well Management Program for Grass Valley from George Ball, Wateresource was presented.

Ball outlined several needs set forth in the memo with regard to both the Well Management Program and the on site Wastewater Management Program. Ball noted that the Management Programs would require additional staff, as the Building Department currently does not have the sufficient staff to handle the additional workload.

### **11/20/00 Grass Valley/Wastewater and Domestic Well Management Program**

#### **Technical Memorandum Grass Valley Preliminary Water and Wastewater Management Plan**

Ball presented the final technical memo for the On Site Wastewater and Domestic Well Management Program for Grass Valley. The conclusion from the Grass Valley Groundwater Monitoring Program, to date, suggests that the increasing trend in nitrate concentration is primarily a result of the increase in individual sewage disposal systems in the Grass Valley area. Therefore, a program to develop a management scenario to reduce nitrate input to the groundwater resource in Grass Valley is a goal. The Division of Water Resources has indicated a desire to assist and cooperate with Humboldt County in developing an administrative management program permitting and oversight provided by the state and some construction inspection provided by the County Building Dept. The operation maintenance and management of individual wells and domestic sewage remains the responsibility of the household property owner.

Installed costs of the onsite treatments and disposal systems described in the report range from \$2000 to \$10,000. It was noted that the County would need to develop ordinances to govern domestic well and onsite disposal system management. Ball also advised that Humboldt County, through the D.A. and Building Official, have initiated development of an interlocal agreement for Delegation of Supervision of Construction of Domestic Wells with the Division of Water Resources.

The remaining Task 5 involves a public workshop to review the proposals presented in the Technical Memo. The workshop will be sometime in the spring.

### **10/16/00 Domestic Well Water Study**

#### **A Reconnaissance of Domestic Well Water Quality Around Winnemucca, Nevada**

Dean Adams with UN,R made a presentation on their Domestic Well Water study for the Winnemucca area.

Chairman Milton requested that increasing the size of County's well monitoring program to include some of the UN,R sites be placed on a future agenda.

## **Summaries of Previous Studies by Waterresource Consulting Engineers, Inc.<sup>1</sup>**

### ***Grass Valley Water and Sewer Feasibility Report, December 1993***

This feasibility report was prepared to give Humboldt County an understanding of the water and sewer infrastructure requirements to provide these utilities in Grass Valley and their probable economic impact. The report served as a preliminary guide and planning tool for development of future projects.

### ***Grass Valley Groundwater Monitoring Program Report, November 1995***

The purpose of this report was to describe and document the implementation of the Grass Valley Water Quality Monitoring Program. The report also provides guidelines for the continuation and future modification of the program.

### ***Grass Valley Water and Sewer Feasibility Report Addendum, January 1997***

This report was prepared as an alternative sewer collection system based on emerging technology relating to a septic tank effluent pumping (STEP) system in comparison to a community gravity sewer collection system as presented in the 1993 Report. One of the main purposes of the report was to compare the cost of the gravity collection system and the STEP system.

### ***Sewer Collection/Treatment System Phase I Concept and Funding Investigation/Evaluation, January 1998***

The primary objective of this investigation was to evaluate the various funding avenues available to Humboldt County for purposes of constructing a sewer collection and treatment system in Grass Valley. In addition, the investigation further delineated the area for the initial phase of the sewer collection system.

### ***Grass Valley Phase I Sewer System Funding Request Proposal, March 3, 1999***

The proposal reviewed the Regional System Concept and accomplished the funding application process for the proposed Grass Valley Phase I sewer collection and treatment system. The proposal

---

<sup>1</sup> Waterresource Consulting Engineers, Inc. various reports dated 1993-2000

was based on utilizing the 1993 Water and Sewer Feasibility Report together with the 1997 Report Amendment, as well as the 1998 Report, for the preliminary engineering report required by the funding agencies to the maximum extent possible. The proposal was in two phases. The first phase was intended to provide direction regarding the potential for a regional sewer program. The second phase was to prepare and submit the application to the funding agencies.

### ***Grass Valley Phase I Sewer System Phase I - Regional System Concept Review, November 30, 1999***

This Technical Memorandum was to present the progress of meeting the objectives of the Phase I March 3, 1999 proposal. Task I, which was forming a review committee was accomplished. The committee consisted of Humboldt County, City of Winnemucca, Winnemucca Farms, Vista Ridge Development, NDEP and a Waterresource technical advisor.

Waterresource did not perform Task 2 of the 1999 proposal, regarding a conference with the funding agencies. Entering into a Grass Valley Regional Sewer System project at this time is not in the best interest of Humboldt County.

The need and participants to create a Regional Wastewater Treatment and Disposal Facility in the Grass Valley area exists. The timing does not appear to be feasible, due to the overall economy at this time. Developments of funding resources appear feasible in a joint venture scenario. A wastewater treatment and disposal facility will be required in the future to protect the groundwater resource.

### ***Grass Valley Preliminary Water and Wastewater Management Plan, October 19, 2000***

This technical memorandum is the outcome of the Grass Valley Groundwater Monitoring Program. The results of the program suggest that the increasing trend is a result of the increase in Individual Sewage Disposal Systems in the Grass Valley area. A program to develop a management scenario to reduce Nitrate input to the groundwater resource in Grass Valley is an important goal and the details are outlined in this memorandum.

## **Summary of UNR's Study**

### ***A Reconnaissance of Domestic Well Water Quality Around Winnemucca, Nevada - Dean Adams UN,R Final Report<sup>2</sup>***

Forty-eight wells in the Winnemucca area were monitored quarterly for two years for nitrate and other dissolved constituents for the purpose of determining the chemical quality of the groundwater reservoir. The presence of many potential contamination sources in the area, as well as substantial increases in population and development during the last decade pose an inherent threat to regional aquifers. Seven of the forty-eight monitored wells exceeded the primary drinking water standard of 10 mg-N/L for nitrate and an additional seven wells exceeded the secondary standard for total dissolved solids of 1000 mg/L. The findings indicate that anthropogenic activity may be at least partially responsible for the deterioration of well water quality in the Winnemucca area. Further monitoring is

---

<sup>2</sup> University of Nevada Reno, Dean Adams and staff July 2000

recommended to accurately assess the severity of contamination, and a more detailed evaluation is needed to ascertain the principal causes of pollution. In the meantime, activities that are known to release nitrate into groundwater should be carefully scrutinized or discouraged. The Commission should review recommendations from this study.

# GRASS VALLEY GROUNDWATER SUMMARY REPORT

## TABLE OF CONTENTS

Summary.....	1
<b>1991</b> .....	<b>1</b>
3/13/91 Grass Valley Water Study Update .....	1
<b>1992</b> .....	<b>1</b>
4/2/92 Grass Valley Moratorium .....	1
11/12/92 Water/Wastewater Planning for Grass Valley .....	1
<b>1993</b> .....	<b>2</b>
1/4/93 Grass Valley Moratorium .....	2
1/21/93 Grass Valley Sewer/Water and Ground Water Study .....	2
2/4/93 Grass Valley Area Parcel Maps.....	2
3/18/93 Grass Valley Sewer/Water Feasibility Study Proposals.....	3
4/15/93 Privatization of Grass Valley Sewer/Water .....	3
4/27/93 Special Meeting.....	3
5/6/93 Grass Valley Water/Sewer Feasibility Study.....	3
5/17/93 Grass Valley Sewer/Water Feasibility Study Contract .....	3
8/23/93 Special Meeting At Grass Valley School.....	4
8/24/93 Grass Valley Water/Sewer .....	4
9/28/93 & 11/22/93 Special Meetings.....	4
<i>Grass Valley Water and Sewer Feasibility Report December 1993 - Waterresource</i> .....	<b>4</b>
<b>1994</b> .....	<b>5</b>
1/19/94 Grass Valley Sewer and Water Draft Feasibility Study .....	5
5/2/94 Grass Valley Sewer/Water Feasibility Study (Grass Valley School) .....	5
6/6/94 Grass Valley Sewer/Water Feasibility Study.....	6
6/20/94 Grass Valley Sewer/Water .....	6
6/20/94 Development Standards/Les Martin.....	6
7/5/94 & 8/15/94 Grass Valley Sewer/Water .....	6
9/21/94 Grass Valley Sewer/Water Facilities Planning Joint Meeting.....	6
11/3/94 Grass Valley Ground Water Monitoring.....	7
<b>1995</b> .....	<b>7</b>
1/3/95 Grass Valley Water/Sewer.....	7
1/17/95 Joint Meeting with Pershing Commissioners Regarding Waterresource Proposal .....	7
2/6/95 Grass Valley Groundwater Monitoring Study.....	7
2/21/95 Grass Valley Area Groundwater Monitoring .....	7
6/5/95 Grass Valley Groundwater Monitoring Program.....	7
7/17/95 Humboldt County/BLM/Winnemucca Farms Land Exchange .....	7
9/11/95 Grass Valley Groundwater Monitoring Program .....	8
10/2/95 Grass Valley Groundwater Monitoring .....	8
11/6/95 Grass Valley Groundwater Monitoring Program .....	8
11/6/95 Expansion of City Sewer.....	8
11/13/95 Special Meeting .....	8
12/4/95 Grass Valley Groundwater Monitoring Program .....	8
<i>Grass Valley Groundwater Monitoring Program Report November 1995 - Waterresource</i> .....	<b>8</b>
12/4/95 UNR Groundwater Survey Proposal.....	8
7/17/95 Grass Valley Water/Sewer .....	9
<b>1996</b> .....	<b>9</b>
4/15/96 General Plan Amendment/Grass Valley Area .....	9
6/3/96 BLM Lease/Purchase/Land Exchanges .....	9
7/8/96 Groundwater Monitoring Project.....	9
8/5/96 Grass Valley Groundwater Monitoring Program.....	9
8/19/96 Meeting In Grass Valley.....	9

9/5/96 Grass Valley Groundwater Matters.....	9
9/30/96 Grass Valley Sewer/Groundwater Monitoring Program.....	10
10/7/96 Grass Valley Groundwater Monitoring Program.....	11
10/21/96 Grass Valley Groundwater Monitoring.....	12
11/7/96 Grass Valley Groundwater Monitoring Program.....	12
11/7/96 Acquisition of Gold Country.....	12
11/21/96 Grass Valley Groundwater Monitoring.....	12
12/16/96 Grass Valley Groundwater Monitoring Program.....	12
<b>1997.....</b>	<b>13</b>
1/21/97 Grass Valley Water/Sewer.....	13
<i>Grass Valley Water and Sewer Feasibility Report Addendum January 1997 - Waterresource.....</i>	<i>13</i>
2/3/97 Grass Valley Groundwater Monitoring Program.....	13
5/5/97 Grass Valley Groundwater Monitoring/Sewer/Water Planning.....	13
6/2/97 Grass Valley Groundwater Monitoring Program.....	13
1/6/97 Grass Valley Groundwater Monitoring Program.....	14
2/18/97 Grass Valley Groundwater Monitoring Program.....	14
2/3/97 Public Commentary.....	14
4/7/97 Grass Valley Groundwater Monitoring Program and Water/Sewer System Planning.....	14
9/2/97 Grass Valley Groundwater Monitoring Program.....	14
12/1/97 Grass Valley Groundwater Monitoring Program.....	15
<b>1998.....</b>	<b>15</b>
1/26/98 Grass Valley Water Quality and Sewer Planning Matters.....	15
<i>Grass Valley Sewer Collection/Treatment System (Phase I) Concept and Funding Investigation/Evaluation January 1998 - Waterresource.....</i>	<i>15</i>
2/2/98 Grass Valley Groundwater Monitoring Program/Sewer/Water Issues.....	16
3/9/98 Grass Valley Groundwater Monitoring Program.....	17
6/1/98 Grass Valley Groundwater Monitoring Program.....	17
6/15/98 Grass Valley Groundwater Monitoring program.....	17
7/13/98 Grass Valley Groundwater Monitoring Program.....	17
8/3/98 Grass Valley Groundwater Monitoring Program Update.....	17
12/21/98 Grass Valley Groundwater Monitoring Program.....	17
10/19/98 Gold Country Water System Acquisition.....	18
<b>1999.....</b>	<b>18</b>
3/8/99 Grass Valley Phase I Sewer System.....	18
<i>Grass Valley Phase I Sewer System Funding Request Proposal March 3, 1999 - Waterresource.....</i>	<i>18</i>
6/7/99 Grass Valley Groundwater Monitoring Program Update.....	18
12/6/99 Grass Valley Sewer Update.....	19
<i>Grass Valley Phase I Sewer System Phase I - Regional System Concept Review November 30, 1999 - Waterresource.....</i>	<i>19</i>
<b>2000.....</b>	<b>19</b>
1/3/00 Grass Valley Sewer Matters.....	19
1/18/00 Contract With Waterresource.....	20
7/10/00 Grass Valley On Site Wastewater and Domestic Well Management Program.....	20
11/20/00 Grass Valley/Wastewater and Domestic Well Management Program.....	20
<i>Technical Memorandum Grass Valley Preliminary Water and Wastewater Management Plan.....</i>	<i>20</i>
10/16/00 Domestic Well Water Study.....	20
<i>A Reconnaissance of Domestic Well Water Quality Around Winnemucca, Nevada.....</i>	<i>20</i>
<b>Summaries of Previous Studies by Waterresource Consulting Engineers, Inc. ....</b>	<b>21</b>
Grass Valley Water and Sewer Feasibility Report, December 1993.....	21
Grass Valley Groundwater Monitoring Program Report, November 1995.....	21
Grass Valley Water and Sewer Feasibility Report Addendum, January 1997.....	21
Sewer Collection/Treatment System Phase I Concept and Funding Investigation/Evaluation, January 1998....	21
Grass Valley Phase I Sewer System Funding Request Proposal, March 3, 1999.....	21
Grass Valley Phase I Sewer System Phase I - Regional System Concept Review, November 30, 1999.....	22

Grass Valley Preliminary Water and Wastewater Management Plan, October 19, 2000 ..... 22

**Summary of UNR's Study ..... 22**

A Reconnaissance of Domestic Well Water Quality Around Winnemucca, Nevada - Dean Adams UN,R Final Report..... 22