

PLANNING DEPARTMENT COMMENTS ON DRAFT EIR:
SANTA ROSA SUBREGIONAL LONG-TERM
WASTEWATER MANAGEMENT PLAN

1. PROJECT DESCRIPTION:

The Draft EIR description of the rapid infiltration alternative differs from the descriptions provided in the "Phase 2 Report, Evaluation of Alternatives". Figures 2-1 and 4-4 of the DEIR show the proposed site of the percolation ponds as being southerly of the location shown in Figure 4-1 of the Phase 2 Report.

* The DEIR is confusing in its description of the percolation ponds. Are existing gravel pits to be used or are new ponds to be constructed? This information is critical to the determination of water quality impacts, because the existing gravel pits have no soil layer through which wastewater would pass prior to entering the exposed groundwater table.

* The amount of land needed for the ponds also differs. The DEIR states that either 100 or 120 acres would be needed, while the Phase 2 Report says 200 acres would be needed.

2. EVALUATION OF WASTEWATER MANAGEMENT SYSTEM ALTERNATIVES:

The DEIR discusses impacts of four (4) alternative wastewater systems, each involving a disposal method designed to handle all future effluent during the design period in combination with the existing irrigation program. The DEIR fails to include an alternative involving significant expansion of the irrigation program or an upland marsh in the Laguna area as requested by the County in its response to the NOP for this EIR.

spec EIR include

The DEIR fails to include analysis of a number of feasible project alternatives which involve various combinations of disposal methods. Each alternative is designed for disposal of the full amount of year 2010 effluent with the exception of the portion used for the existing irrigation program. It has been previously suggested by the County that the system not rely entirely upon one disposal mode to handle all future effluent. The DEIR should discuss modified alternatives which include such methods as irrigation, upland marsh, landscaping, water conservation, etc.

The DEIR should evaluate each alternative in terms of its ability to accommodate future expansion. For instance, what water quality impacts would result from the addition of Petaluma, Healdsburg, Windsor or other communities to the subregional system at a later

date. Preliminary evaluation of these potential impacts should be conducted at this time prior to commitment to a disposal alternative particularly since environmental constraints or significant impacts may emerge which could have a bearing on the selection of a disposal method.

Some methods of disposal provide community benefits in addition to wastewater disposal. Alternatives involving agricultural irrigation foster the retention of agricultural uses, which indirectly promote community-centered urban growth and retention of open space. The DEIR does not identify the loss of these potential future benefits where applicable.

include

3. SIGNIFICANT ADVERSE EFFECTS:

The Draft EIR relies upon an apparent misinterpretation of the word "significant" in its conclusion on page 2-10 that none of the alternatives would have a significant adverse effect on the environment.

include

Section 15002(g) refers to Section 15382 of the same CEQA Guidelines for further elaboration of the definition of significant effect. Section 15382 notes that not only are "substantial" adverse changes in the environment to be considered, but also "potentially substantial" adverse changes. Throughout the DEIR, adverse impacts are identified as potentially significant yet the summary concludes that no substantial changes will occur. While, there may be no absolute proof of substantial adverse effects there is certainly credible evidence of potential effects in numerous instances.

X

In addition, the DEIR provides very little specific information or data regarding potential or actual impacts. Section 15147 of the Guidelines states, "the information contained in the EIR shall include... information sufficient to permit full assessment of significant environmental impacts...". While supporting information and analyses of a technical nature may be placed in an appendix, it must be available to the reviewer. The DEIR repeatedly draws conclusions regarding project impacts without supporting documentation either in the body of the report or in the appendix.

Most importantly, however, the degree of specificity of the analysis does not correspond to the degree of specificity of the project. The DEIR discusses impacts only in broad generalities as would be appropriate in a General Plan EIR. The project, however, is a major construction project which will need corresponding detailed environmental assessment and review. If the City plans to prepare more detailed Supplemental EIRs at a later date, a more detailed

comprehensive analysis still is needed prior to selection of a alternative. The basic purposes of CEQA as listed in Section 15002 are not served by the DEIR in its present form. As a consequence, the DEIR does not conform to policies established in case law and expressed in Section 15003b, c, d, e, and f of the Guidelines.

4. HYDROLOGY, WATER QUALITY & AQUATIC LIFE:

The DEIR displays Russian River flow records and water quality data that are outdated. The updated combined flows authorized by the State Water Resources Control Board from Lake Mendocino and the recently completed Lake Sonoma should be included and accounted for in the analysis.

On page 6-28, the DEIR describes the beneficial water quality impacts of termination of discharge to the Laguna de Santa Rosa. The major factor mentioned is the reduced effect of ammonia on salmonids migration. Yet when the DEIR identifies effects of discharges on the Russian River, nothing is mentioned about the potential adverse effect of ammonia on Salmonids. The DEIR also refers to "recent studies" of Salmonid reaction to wastewater dilutions but doesn't reference the studies or include any supporting documentation which would enable the reviewer to verify the DEIR conclusions.

This option probably best!

The KGRA is characterized by unstable geology and soils. The DEIR should discuss the potential for adverse water quality impacts resulting from storage pond failure for the Geysers reinjection alternative. The DEIR should identify storage pond location(s).

The proposed indirect discharge of effluent into infiltration ponds as described in the DEIR is different from the City of Healdsburg's present disposal of effluent directly into the groundwater table previously exposed by gravel extraction. Whether or not Healdsburg's present system will be acceptable to the Regional Board is not relevant to this DEIR. The DEIR should identify the specific present condition of the waters of the Russian River Basin and quantify the resulting changes caused by the proposed wastewater discharges. In doing so, the DEIR should determine the "worst case scenario" for all impacts. If this approach were followed, it is apparent that during dry years, effluent concentrations would be significantly higher than the 20% identified on page 6-32.

What dilution rate could be expected during the high-flow direct discharges to the river, expected to occur once every 3 years?

The assumed minimum dilution of 5:1 is based upon a "typical" year, not on the "worst" year. Since the existing wastewater system has had so many problems due to "atypical" weather conditions, perhaps it would be prudent to assume the "worst" case scenario and use minimum dilution of 0.5:1 as indicated on Table 6-7 for all water quality analyses. The chart on page 6-8 would show considerably less compliance with water quality objectives and criteria under these circumstances, particularly for ammonia, nitrate-nitrogen, cadmium, and mercury.

The DEIR is lacking in background water quality data which is critical to determining the impacts of the rapid infiltration proposal, including the background river concentration of total dissolved solids and suspended solids (Table 6-6), the dissolved oxygen content and temperature levels of the river and treated wastewater prior to discharge (Table 6-8), the background river levels of ammonia and nitrate-nitrogen, which are assumed to be zero, *erroneous!* and the background concentrations of heavy metals in the river. Where are the data on receiving water and effluent quality collected by the Water Quality Control Board staff?

The DEIR on page 635 states that Alternative 2 would allow compliance with water quality objectives and criteria on Table 6-8. However, the data shown clearly show that the criteria and objectives would not be met for nitrate-nitrogen, cadmium, and mercury, even if dilution were 5:1. If dilution were less, say 0.5:1, the discharges would also not meet standards for ammonia concentration. The likelihood of compliance with the standards for dissolved oxygen and temperature cannot be assessed with the data shown in the DEIR. If the stated probable dissolved oxygen levels are 1-4 m/l then the minimum standard of 7 m/l would not be met. Is the quality of the effluent really as bad as indicated in the DEIR?

The DEIR assumes but does not demonstrate how the proposed 100:1 dilution would be achieved using the ocean outfall method. If the assumption is invalid, then the water quality impacts are understated.

The DEIR description of the process whereby the wastewater mixes with ocean water is confusing. On page 6-41, it states that the effluent is "much less dense" than ocean water and rises rapidly, thus allowing for high dilution. Later, it states that the effluent would be trapped below the thermocline due to the relatively low density of the surface waters. What are the actual density measurements?

In addition, the DEIR indicates that this stratification occurs during all but a few months each year. What months? When does the effluent rise to the surface? How does the upwelling of waters from the ocean floor affect this process? What would be the effect of

This is illogical - is there a thermocline in these sea waters?

this upwelling on the migration of the effluent plume from the diffusers? Data relative to ocean water density should be provided in order to determine the extent and direction of plume movement.

Tables 6-9 and 6-10 should show the pre-dilution quality of the existing Santa Rosa wastewater in order to compare the wastewater with the ocean standards (Table 6-10 refers to a single sampling in 1986 which is not shown in the DEIR). The predicted concentrations on Table 6-10 are based upon an assumed 100:1 dilution, yet the DEIR does not demonstrate how 100:1 dilution will be achieved. The lead concentration even at 100:1 dilution appears to at times exceed the standard for ocean disposal. It would appear that the conclusion that ocean outfall will meet standards is not supported by the data in the DEIR.

The DEIR should discuss the potential effects of wastewater discharge on ocean water temperature. What effects on ocean aquatic life could result from temperature changes induced by wastewater discharges which move shoreward during periods of upwelling?

The argument on Page 6-44 that the existing discharges to the river have as much affect on ocean water quality as the alternative of ocean outfall does not seem to have any basis in fact. Actual comparison of the existing 1% winter-only discharge to year-round discharge of virtually all of the effluent in the system would likely not support this conclusion.

The DEIR suggests that the predesign oceanographic and biological studies that would be needed prior to construction of the ocean outfall system be included as project mitigation. Unfortunately these same studies are necessary to identify and describe project impacts. This EIR should not be certified until the studies are conducted.

In reference to the Mussel Watch Control Station, the DEIR states on page 6-44 that ocean outfall at Salmon Creek might "influence conditions in some way, making it a less suitable location for a control station". In what way could discharge influence conditions? Is this significant? On what basis does the DEIR conclude that no substantial change would occur?

The DEIR concludes that discharge to the San Pablo Bay "would be expected to have no gross adverse effect on water quality or aquatic life". What does "gross" mean? Based upon Table 6-12, concentrations of cadmium, chromium, lead, and mercury might exceed the limiting concentrations even if the assumed 10:1 dilution occurs.

More than any other alternative addressed in the DEIR, the Bay disposal alternative could be modified to avoid or substantially reduce potential adverse effects on Bay water quality through expansion of irrigation or addition of an upland marsh and elimination of the underwater outfall. This should be suggested as mitigation for potential water quality impacts in the DEIR.

The DEIR should also suggest, since each alternative has potential impacts on water quality resulting from heavy metals, that some program of "front-end" control be instituted by user agencies to reduce metals entering the treatment plant.

But how?
Is there new
technology
available?

5. PUBLIC HEALTH & SAFETY:

It should be noted that the DEIR attempts to rationalize in favor of the project by stating that no scientific studies have proven that adverse health effects result from long-term exposure of people to small amounts of harmful substances. Nonetheless, public health standards have gradually become more stringent as more is learned about such long-term effects. If the DEIR is intended to be a good faith effort at disclosure of potential adverse effects, it should identify all potential long-term effects and, if possible, suggest mitigation which could reduce those effects. Comparison of the quality of the effluent with presently accepted standards appears to indicate that some harmful substance concentrations might be exceeded. The DEIR should recognize this possibility and suggest mitigation measures to reduce the impact.

incredible!

The DEIR states on page 7-6 that the proposed effluent treatment level for rapid infiltration will contain "very low" concentrations of suspended solids. What specific levels will be produced? How will these levels compare to the existing condition in the river?

There is no supporting evidence showing that the existing effluent from the Laguna plant is "relatively free" of pathogenic organisms and there is no information indicating what is meant by "relatively free". This data should be provided. The DEIR should provide specific measurements of background levels of bacteriological pollution upstream and downstream of the proposed percolation ponds and water supply facilities. There is no data supporting the statement that water quality is inferior upstream of the Laguna. If this is true, the cumulative effects of the rapid infiltration system should be discussed in Chapter 19.

(10000 ppm)

allowing 10000 ppm is not completely effective!

mouth of the lagoons

What source control program is being implemented by the user cities and how will it reduce each of the potential contaminants? How much reduction is anticipated? The DEIR should also quantify the expected reduction in metals which would be removed by the proposed treatment process?

Again - is there technology available?

What would be the impact on ocean swimmers who came into contact with effluent discharged through a broken pipe (earthquake) during a situation where the treatment plant failed to operate? Would the body-contact recreation and shellfish standards still be met? Similarly, what would be the impact on recreational opportunity in San Pablo Bay if the pipeline and treatment systems failed simultaneously?

Worst possible Scenario!

6. VEGETATION AND WILDLIFE:

Pipeline crossing of creeks for all alternatives should provide for full assessment of potential impacts, particularly during construction. Consultation with the Department of Fish and Game in advance of specific design of the crossings should be included as a mitigation measure. General measures for reducing impacts on streams should be provided in the DEIR.

The DEIR does not assess the potential for loss of riparian or wetland habitat along the Russian River as a consequence of construction of the rapid infiltration ponds. What mitigation is available?

Pipeline construction and subsequent failure or damage in the vicinity of the mouth of Salmon Creek or the Russian River could adversely affect wetlands and associated biotic resources designated for preservation in the Sonoma County Local Coastal Plan. The DEIR should provide mitigation for this potential impact.

What would be the expected loss of Redwood trees along the Highway 116 pipeline route to the ocean? What construction standards should be followed in order to avoid damage to redwoods in close proximity to the pipeline trench?

7. GEOLOGY AND SOILS:

Given the relative geologic and soil instability of the Geysers area, the DEIR should explore mitigation measures for potential failure of any storage ponds which might be located in the vicinity of the injection site.

The DEIR should include a description or mapping of the geologic hazards and soils for the proposed pipeline route to the rapid infiltration ponds. Experience with soils in the vicinity of the gravel pits has shown that pit slopes can fail if flood waters rise and flow through swales outside of the river channel. Although the SCS erosion rating is low due to the flat terrain, large amounts of water suddenly released over the alluvial soils can cause severe erosion.

The DEIR should discuss the relative risks of the bay and ocean outfall alternatives to disruption caused by earthquakes. The deep water outfalls, if damaged, would be costly to repair and probably cause system shut down for extensive periods of time. The ocean outfall crosses the San Andreas Fault at right angles under water while the Bay alternative pipeline would be largely parallel to the fault system.

8. HISTORY AND ARCHAEOLOGY:

The DEIR should expand upon the mitigation measure provided on page 10-2 to include a provision that upon completion of the record survey and testing program, the archaeologists' recommendations shall be carried out prior to initiation of construction. The requirement for archaeological survey should apply to storage ponds, pump stations and all facilities which could impact upon archaeological resources in addition to pipelines.

The historic landmarks identified on page 10-2 as being located along the pipeline corridor to the rapid infiltration ponds appear to be instead located along the northern route to the ocean.

9. RECREATION:

The potential impacts of the various alternatives on recreational opportunities are largely a function of the impacts on water quality and public health. Because the DEIR's conclusions regarding water quality and public health are questionable, it is also likely that the loss of recreational opportunities, particularly for Alternative 2, is understated.

10. LAND USE:

The DEIR does not adequately discuss the overall consistency of each of the alternatives with the Sonoma County General Plan as required in the CEQA Guidelines (Section 15125), particularly the policies concerning preservation of agricultural land and resource use of liquid and solid wastes. The DEIR should also include discussion of wastewater policies in the proposed updated general plan land use, agricultural, and resource conservation elements.

The DEIR should include the potential conflicts of the ocean outfall alternatives with the Sonoma County Local Coastal Plan, particularly the environmental resource designations in the areas where the outfall

pipelines cross the coastal margin. The requirement for obtaining a coastal permit should also be mentioned. The DEIR should include discussion of the LCP policies on pages III-6, III-7, III-13, III-16, and III-17 as well as Coastal Act policies # 30230, 30231, 30233(a), 30236, and 30240 and then relationship to the Alternative 3.

The DEIR refers to "Anderson Valley" on page 12-9, but probably means "Alexander Valley". The DEIR should identify and assess the land use impacts of any proposed storage pond in the Alexander Valley.

The rapid infiltration alternative may be inconsistent with the Aggregate Resources Management (Specific) Plan, depending upon the location of the ponds. The DEIR should discuss this project in relation to that plan. The proposed mitigation measure regarding gravel operation reclamation plans would require a specific plan amendment and if the updated general plan is adopted as proposed, a general plan amendment as well.

The DEIR does not identify or describe the impact of the loss of 100 to 200 acres of highly productive agricultural land if the percolation ponds are built.

The DEIR does not identify potential land use benefits of the creation of an upland marsh at the Bay margin.

11. PERMITS:

Section 12-5 discusses the various permits and entitlements which must be obtained prior to construction of each alternative. The following should be added:

- * a. a coastal permit from the County of Sonoma for pipeline construction through the Coastal Zone
- * b. a determination that the project is consistent with the Sonoma County General Plan as provided in Government Code Section #65402
- * c. stream alteration agreements from the Department of Fish & Game.

12. AIR QUALITY:

- * The DEIR states on page 15-10 that the ongoing pasture irrigation program demonstrates that the concentrations of metals in the wastewater are too low to harm vegetation. But no supporting monitoring data or analysis is provided. If this statement is true then it should be supported. If not, it should be dropped.

include

13. SOCIOECONOMICS:

The DEIR should discuss the impacts of each alternative on employment in the affected areas. What would be the long-term impact of the Geysers alternative on geothermal operations and related employment? What would be the impact of percolation ponds on businesses and employment dependent upon river oriented recreation? What would be the impact of ocean disposal on coastal dependent fishing, tourism, and recreation? What would be the impact of the Bay alternative on bay oriented recreation and tourism, and other bay dependent businesses?

14. GROWTH & SECONDARY IMPACTS:

This section of the DEIR and the portion of the summary section on page 2-8 are inaccurate and incomplete. The DEIR correctly points out that the wastewater project, if designed to accommodate population in excess of the service area's planned growth, would be considered growth inducing. The DEIR also correctly points out that the proposed design capacity for all of the alternatives in fact exceeds the capacity needed to meet planned growth. However, the DEIR then incorrectly concludes that none of the alternatives are growth inducing.

Particularly the Ocean outfall option, with its virtually unlimited discharge volume

Selection of the subregional system design period presents a dilemma regarding the growth question. There are obvious economic and environmental benefits in designing and constructing certain facilities for periods longer than addressed in community general plans (usually year 2005). If, in an effort to take advantage of these efficiencies, the selected design period is longer than 2005, then the DEIR must recognize this fact and identify the project as growth inducing. Other mitigation, if available, then be included for reducing the growth-inducing impact.

On the other hand, if it is the intent of the City to construct a project which is not growth-inducing, then these efficiencies may not be realized. The discussion of this issue in the DEIR fails to address this project design dilemma. The issue is important to the selection of disposal alternatives because some disposal methods (such as farmland irrigation) offer the potential for incremental expansion while others (such as ocean outfall) are dependent upon future unplanned growth in order to be cost effective. The issue is also central to the discussion of whether one alternative should be selected for 75-85% of future effluent flow or whether a coordinated system of diverse disposal methods in different locations should be

constructed. Use of a combination of alternatives increases the potential to design in accordance with adopted growth policies economically and efficiently.

* The design period selected for the project alternatives relies upon 2010 growth and assumptions regarding urban expansion which are not in conformance with adopted policies. As a result, all of the alternatives are growth-inducing. *up-dated Gen. Plan.*

Page 18-9 of the DEIR begins a discussion of the Santa Rosa region in the middle 21st century. Reference is made to modifications which would accommodate sewage flows through 2040. What modifications are necessary? What currently proposed facilities are designed to accommodate growth to 2040? What are the impacts of this year 2040 growth on traffic, noise, air quality, water quality, etc.? What are the implications for the various communities in the central county area of dependency of 50 years of growth to support its wastewater system?

13. OTHER ENVIRONMENTAL CONSIDERATIONS:

The DEIR should compare the impacts of construction and operation of each of the alternatives with the continued operation of the existing disposal system. What would be necessary in order to avoid growth limitations in the service area? What impacts would result from incremental expansion of the existing storage and irrigation program in the Laguna area? What would be the status of the Tolay Lake project if no other system were approved?

The DEIR fails to identify potentially significant unavoidable adverse effects resulting from each alternative as required in the CEQA Guidelines. Instead it terms each of the potential impacts as not significant. The DEIR should at least provide an explanation of how it determined whether or not a change is substantial enough to be called "significant". A major failing of the report is its unsupported and undocumented conclusions regarding environmental impacts that are often debated by experts who disagree, and are at least potentially significant as far as is known. The burden of reasonable public disclosure of potential impacts should rest with the Lead Agency and its EIR, not with the public and reviewing agencies.

Section 19.4 of the DEIR should examine more closely the potential impacts of alternatives which may be cumulative with other projects in the area. What are the combined effects of the existing discharges to the Russian River Basin? How would the alternatives measurably reduce or increase these effects? The report also fails to address the cumulative effects of ocean disposal with offshore oil

drilling and other projects being considered by the federal government, including disposal of decommissioned submarines and excavation of mineral deposits at Gorda Ridge?

The DEIR should describe in detail the potential for irreversible contamination of groundwater and introduction of toxic materials into the food chain that it refers to briefly on page 19-4. How do the alternatives compare regarding the potential for these two impacts to occur in the long-term? How can the DEIR state that these two potential impacts are irreversible and then conclude that no significant impacts will occur?

(Contradictions)

14. SLUDGE DISPOSAL:

Page 4-20 of the DEIR refers to "recent tests" of sludge showing "very low" concentrations of toxic materials. The test data should be shown in the EIR as well as the sampling methodology so that it can be determined whether or not the tests were conducted on the sludge which has been stored at the treatment facility since prior to the institution of the industrial pretreatment program. If the sludge quality data in Chapter 5 of the Phase 2 Report are indicative only of the quality of the sludge presently emanating from the treatment plant, then it remains questionable whether or not the "old sludge" could or should be land applied.

The DEIR should describe the impact of the present landfilling of sludge. There are both operational and landfill capacity impacts which will occur until the land application method is operational.

In the event that the City embarks on a program of agricultural application of sludge, would the program involve co-disposal of sludge and wastewater? If so, would the irrigation potential of the land be reduced?

The DEIR gives conflicting information regarding the present sludge production from the Laguna plant. Is it 12 or 20 dry tons per day?

The DEIR should suggest how the application rates of privately marketed composted sludge will be controlled so as to avoid phytotoxicity. The program will not help retain agricultural uses in Sonoma County if deed restrictions against agricultural use of farmland is required because of levels of toxic materials. A possible mitigation would be mandatory, strongly-enforced, front-end controls on potentially harmful materials as part of the wastewater system.

The reference in the DEIR at the end of Chapter 4 to Technical Memorandum T23 should be changed, to since, according to city staff, T23 is not available for public review. Apparently Chapter 5 of the Phase 2 Report has replaced T23 as the reference for this subject.

PLANNING DEPARTMENT COMMENTS ON PHASE 2 REPORT:
LONG TERM STUDY OF TREATMENT OF DISPOSAL
ALTERNATIVES

At the completion of the City's Phase 1 Report in March of this year, the Planning Department recommended that the Board of Supervisors submit comments to the North Coast Regional Water Quality Control Board regarding the selection of wastewater disposal alternatives for further study by the City of Santa Rosa. While the Board adopted a modified version of the policies proposed by the department, several principles based upon General Plan goals and policies were included in the Board Action (attached Resolution #86-0637A). They were:

1. Methods of Disposal:

- * a. The primary method of disposal should be a combination of reclamation by agricultural irrigation at the rate of crop usage and export to the Geysers for reinjection into the steam fields.
 - b. Creation of an upland marsh as a secondary option.
 - c. Landscaping and golf course irrigation.
 - d. Water conservation and inflow/infiltration reduction to supplement the above options.
- * 2. Reclamation and reuse of wastewater as a resource should be a high priority.
 - * 3. Wastewater system alternatives should to the extent feasible provide for diversification of treatment and disposal methods so as to reduce the risk of adverse effects resulting from upset conditions.
 - * 4. The wastewater system alternatives should be designed based upon adopted general plan policies of the service area and other affected jurisdictions, including the Sonoma County General Plan.
 - * 5. Consideration should be given to incorporating other wastewater systems in the County into the regional system.

The Board also resolved to utilize these criteria to evaluate any wastewater projects submitted to it for review for consistency with the County General Plan.

The Planning Department recommends that the Board of Supervisors re-evaluate the proposed methods of disposal now that the Phase 2 studies have been completed and submit recommendations to the City and Regional Water Quality Control Board. The above criteria #2-5 should be reaffirmed. If appropriate, additional criteria should be added based upon the discussions below and at the workshop on January 13, 1986.

The department offers the following comments on the wastewater system disposal alternatives:

General Considerations Regarding Alternatives



The design criteria now being proposed for all alternatives provide sewage disposal services to population and employment in excess of the planned growth in the service area. The design year of 2010 increases the design capacity of the selected system by an estimated 18,500 people and 12,590 jobs (based upon the CH2M Hill Phase 1 Technical Report). Design capacity is also based upon the assumption that Rohnert Park will amend its general plan and "no annexation" policy. Capacity is thereby increased by an additional 14,600 people and 5,070 jobs. By modifying the proposed project design to conform to adopted growth policies, alternatives which rely upon combinations of several modes of disposal and incremental construction are more preferable economically and environmentally.

The design flow coefficients and inflow/infiltration rates developed for sizing the facilities are important in the determination of the capacity of the system. In order to allocate and monitor remaining capacity as development proceeds systematic and consistently-applied design assumptions are needed. The Board of Supervisors should recommend that the City and Water Quality Control Board adopt the design assumptions as formal policy for determination of available sewer service capacity in the future.

Reclamation of wastewater for agricultural irrigation and marsh creation provide the additional benefits of open space and retention of agricultural uses. Marsh creation along the bay fringe would also provide an opportunity to restore some of the diminishing wetland habitat to the bay.

While water conservation is by no means a complete wastewater solution, it is a viable option as part of a diversified approach. The City has instituted voluntary conservation and education programs, but no mandatory measures are indicated in the Phase 2 Report or Draft EIR.

Another disposal option has been suggested by drilling firms employed by geothermal developers at the Geysers. Deep well injection is briefly discussed in the Phase 2 Report. It is rejected due to uncertainty over the availability of fracture zones in the geologic formations at depths of 6-10,000 feet in the Santa Rosa area due to the cost of exploration drilling. The City has also rejected a suggestion that it conduct further studies of this option. If the fracture zones are similar to those in the Geysers area, this option could provide emergency wastewater disposal at relatively low cost, which makes it attractive as a supplement to other disposal methods. It would not, however, constitute a resource use of the effluent.

Alternative 1 Geysers Reinjection

This alternative reuses wastewater as a resource and has the potential to become a partial solution to the regions wastewater system needs. It supports a land use consistent with the County General Plan. Questions regarding the amount of wastewater which could be safely injected and the willingness of geothermal developers to guarantee acceptance of a specified quantity of effluent have not been resolved. As a result, the high operation and maintenance cost and recent economic conditions in the energy business may not justify selection of this option as a partial solution. The risk of upset for this alternative still involves the Russian River with storage and pipeline facilities located in a relatively unstable geologic environment.

Alternative 2 Rapid Infiltration

Disposal of the wastewater through percolation ponds is a potential resource use of wastewater, provided that effluent quality meets drinking water standards. The pond location is upstream of major water supplies at Wohler Bridge and possibly Windsor. However, the presently proposed treatment level may not be sufficient to assure that this standard is met during low flows in the river.

The percolation pond method could be part of a diversified combination of disposal methods. The amount of effluent disposed of in this manner would have to be reduced to the extent that existing water supplies were assured of protection. Unfortunately, the cost (with additional treatment) may not justify the project as a partial solution only. Limitations on the amount of effluent which could be accommodated would also limit this alternative's potential to accommodate other systems in the region. Another disadvantage is that accidents or upset conditions could adversely affect Russian River beneficial uses.

Alternative 3 Ocean Disposal

The disposal of effluent into the ocean is purely a disposal project with no resource use or reclamation benefit. It is inconsistent with present General Plan policy directing resource use of liquid and solid wastes. The amount of wastewater which could theoretically be dumped into the ocean is greater than the amount which could be accommodated in any other alternative due to the dilution potential. In order to make this alternative economically feasible, however it would probably require sizing the pipeline to accommodate growth throughout its structural life of 40-50 years. It would therefore be a growth-inducing project.

It is probably the best alternative in terms of its ability to accommodate effluent from other systems in the region, such as Windsor. However, Petaluma and Healdsburg, for instance, would have to extend pipelines to connect to the disposal pipe.

The risk of adverse water quality effects resulting from upset conditions is probably minor, although the present quality of ocean waters along the North Coast is probably as "pristine" as any and the value to scientific research is probably incalculable. Damage to the pipeline in this fault zone would result in time-consuming and costly repair, during which time disposal could not take place. This alternative does not meet the criterion of reliance upon a combination of diverse disposal methods and locations.

Alternative 4 San Pablo Bay Disposal

The City's proposed bay disposal option includes the benefit of an upland freshwater marsh, which should be viewed as a resource use of wastewater. However, after passing through the marsh, the effluent would be discharged year-round into the bay via an outfall pipe. There is a substantial issue regarding the amount of effluent which could be discharged into the Bay due to the cumulative effect of numerous existing discharges and the Bay Water Quality Control Board adoption of new wastewater discharge standards.

This alternative is similar to ocean disposal in that the system would be dependent upon a single mode of disposal probably requiring lengthy and large pipelines in order to achieve cost efficiencies. It is not well suited to incremental expansion as needed to meet planned growth in the service area. Repair of damaged pipelines in the bay would also necessitate time consuming and costly repair.

This alternative would accommodate the Petaluma system if the quantity of effluent discharged did not exceed whatever limits were adopted by bay regulatory authorities to protect the water quality.

There are potentially feasible modifications to this alternative which have been suggested by various parties (But not analyzed in the Phase 2 Report) which might better meet the Board's criteria. Elimination of the year round pipeline discharge to the bay, combined with an expanded agricultural reclamation program would increase the resource use potential of this alternative. The marsh would be retained and bay discharge would be limited to winter months. Under this alternative, the existing disposal system in the west Santa Rosa plain would be used in combination with the bay system, thereby providing two smaller workable disposal systems and reduced risk to receiving waters.

Based upon the above parameters, the Planning Department recommends a ranking of the above alternatives as follows:

- Best: Modified bay disposal
- 2: Geysers reinjection
- 3: Rapid infiltration
- 4: Bay outfall
- 5: Ocean outfall