

R. M. Johnson
 2049 BAKER LN
 SEASIDE, CA

QUESTIONS

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| 1. How many sewer hookups presently exist, and how many future hookups are planned? | 001 |
| 2. Differentiate between industrial, commercial and residential sewage flow totals and describe quality of each. | 002
003 |
| 3. What revenues are produced from residential, industrial and commercial sewage producers and what is produced from hookup fees? | 004 |
| 4. What are the present operating costs in terms of land, labor, dollars and energy? | 005
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| 6. What is the cost per million gallons to treat sewage effluent? | 009 |
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CITY OF SANTA ROSA

P.O. Box 1678
 Santa Rosa, CA 95402

SEP 24 1996

DEPARTMENT OF
 COMMUNITY DEVELOPMENT

Santa Rosa Subregional Long-Term Wastewater Project

DRAFT EIR/EIS COMMENT FORM

DUE OCTOBER 7, 1996 4:30 PM

Name: PAUL OBASAWARADate: 9-24-96Address: 7099 BAKER LN

CITY OF SANTA ROSA

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Phone: (707) 823-8881DEPARTMENT OF
COMMUNITY DEVELOPMENT**How to use:**

Please fill out the above and provide your written comments about the Draft EIR/EIS in the space provided below. You may add additional pages if needed. Please write legibly. If you prefer to type your comments on a separate page, please attach to this form. Where possible, please reference the page to which the comment refers. When you have completed your comments, please fold the form so the City's address is showing, tape the edges together, (Do not use staples), and place in the mail.

THE EIR/EIS REPORT IS FLAWED BECAUSE
IT ONLY STUDIES A FEW ALTERNATIVES. EVERY
ALTERNATIVE IS FLAWED, SO THE EIR/EIS TRIES TO
JUSTIFY AN UNACCEPTABLE ALTERNATIVE.

017

ENHANCED TREATMENT WITH ITS MASSIVE INCREMENTAL
REUSE COMPONENT ELIMINATES THE NEED FOR
RIVER DISCHARGE. THE SCREENING REPORT
ELIMINATED ENHANCED TREATMENT BECAUSE IT
WAS TOO EXPENSIVE, BUT DID NOT TAKE INTO
CONSIDERATION THE COST SAVINGS FROM COGENERATION
TECHNOLOGY.

THE EIR/EIS REPORT IS FLAWED BECAUSE IT
DOWNPLAYS FACTORS SUCH AS LOSS OF TOURISM, AND
RECOMMENDS 20% DISCHARGE, EVEN THOUGH IT
EXCEEDS ALL WASTEWATER LIMITS.

018

AN ENVIRONMENTAL PROPOSAL

By Paul Ogasawara

I am an environmentalist. I am for clean air and water, preservation of unique ecosystems, and oppose environmental degradation. So why am I advocating the construction of a power plant at the sewage treatment facility? 019

I propose building a cogeneration plant that produces energy and kills pathogens in the sewage water. Wood wastes and garbage are transported by an efficient mass transit system to fuel the power plant that utilizes gassification technology. The water is subsequently sent through a marshland ecosystem to absorb heavy metals and toxins. The water eventually enters the Russian River clean and drinkable. Waste heat is utilized in a cascading manner to run refrigerators, heat buildings, greenhouses and fish ponds. In totality, this system will solve the sewage crisis, reduce the landfill depletion, generate millions of dollars from energy and greenhouse production, and create hundreds of jobs. This solution could be utilized by every city, reduce our dependence on centralized energy producers like PG&E, and reduce environmental impacts from sewage contamination. That is why I advocate construction of a power plant.

How can I call myself an environmentalist? Because I propose cleaning up sewage until it is drinkable, reducing landfills by burning garbage and wood wastes, and using state-of-the-art technology like electrostatic precipitators to eliminate harmful pollution. Believe it or not, modern power plants can be designed to produce minimal amounts of pollution.

As a consumer of energy like 99.9% of all people, I accept the burden and consequences of most energy producers. Some environmentalists assail any new power plants, but I feel they are guilty of hypocrisy. To these people, I wholeheartedly invite them to turn off their gas and electricity, smash their stereos and throw away their car keys. However, I oppose construction of nuclear power plants like Diablo Canyon that are built on earthquake faults, are unnecessary with an energy surplus, and have hidden costs and dangers that negate any possible benefits. The type of power plants that I advocate will make large centralized power plants obsolete.

Energy must come from somewhere, and I feel it is irresponsible to derive the benefits of energy without contemplating the costs involved. Many selfish people do not care where energy comes from just as long as the power plant is not in their backyard. I propose a system where power plants are locally operated, used for many processes to increase efficiency, non-polluting, and of medium scale with renewable fuel sources. This will reduce our dependence on outside energy sources, fragile transmission lines, and foreign oil. If 1000 cities develop these power plants, and are integrated into the present energy grid, new growth in the economy would result, major crises could be averted, and energy prices could fall. (REMEMBER THE FIRES AND BLACKOUTS)

Too good to be true? Maybe. Prophetic? Hopefully. Attainable? Yes, if enough concerned citizens adopt this proposal. Please give careful consideration to a positive, practical, progressive problem-solving proposal.

I wrote this in 1987. PROPHETIC? POSSIBLY.

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SEP 24 1996

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SEP 24 1996

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DEPARTMENT OF COMMUNITY DEVELOPMENT
I applaud the City of Santa Rosa for giving me the opportunity to 020
offer my opinion to this wastewater problem. Most other cities only
treat their effluent to a secondary level while Santa Rosa has cleaned
their effluent to a tertiary level. However, Santa Rosa uses the tertiary
treatment as a justification to allow for a 5% effluent flow compared to a
1% streamflow ceiling most others abide by. Now the city could be
advocating a 20% limit without any comprehensive studies on the
biological impacts.

The City of Santa Rosa is attempting a good faith effort to achieve an
equitable and effective solution to this problem. Why then does the city
limit the choices to only six when a seventh alternative would increase
the variety of options? This seventh option would allow the city to
proclaim that a fair and reasonable selection of alternatives were
thoroughly examined and the public was not denied other superior
alternatives because of a flawed procedural move.

All of the six alternatives have flaws.]

#1 NO PROJECT- This isn't an alternative, it is a reality. We have not been 021
doing anything, except waste 4 million dollars in an attempt to cram a
flawed and ineffective alternative past the public.

#2 SOUTH COUNTY- This is the same area Novato, Petaluma, Sonoma and
Napa plan on dumping their sewage.

#3 COMMUNITY SEPARATOR- This one is aptly named because no one
will be able to live on these lands separating our communities once the
extent of pollution is realized. They must think people are really stupid
for them to believe groundwater injection is benign.

#4 WEST COUNTY- This will only negatively impact the Farralones /
Point Reyes National Marine Sanctuary. Extensive legal challenges are
anticipated, and the main reservoir site is controversial.

#5 GEYSERS- The only impediment to this alternative is the pumping
costs, which run from 8 to 15 million dollars PER YEAR.

#6 20% RUSSIAN- The other alternatives allow 1%, this alternative will
allow 20 TIMES that amount. I think all city and county officials and
water board members should be forced to drink this water.

#7 ENHANCED TREATMENT- Is a radically different alternative. It 022
solves the problems the others fail to do. It is feasible utilizing existing
technology. Energy conservation through cogeneration make this
alternative energy efficient and economically competitive. This solution
could be implemented on an appropriate scale throughout the region.

ENHANCED TREATMENT is a process that would pasteurize tertiary
treated sewage effluent. Heavy metals and toxics would be excluded by
monitoring and eliminating the source of pollution. The energy to do
this would be provided by solar heat concentrators, biomass

cogeneration, biogas from effluent digestion tanks and even separated garbage. Energy is a major cost for any solution, so why not generate electricity that is needed anyway and use the waste heat to treat sewage and power many other industries. 022 (cont.)

The enhanced treated water could be used for landscape irrigation and totally eliminate the need to build more dams and eventually phase out the need to irrigate more farmlands. A massive and comprehensive retrofitting needs to be implemented, so it needs to be phased in gradually. First, all new development must have double piping. Second, all existing residences must be retrofitted for drinking and eating water in a logical and gradual manner. Once people realize that their water bill will decrease rapidly by not using drinking water to irrigate their landscapes, they will demand access to enhanced treated water.

People are trying to solve the sewage problem, and plan on spending millions to do it. Unfortunately, the sewage crisis is just a symptom of unplanned or poorly planned growth, and nothing can be solved until this issue is addressed. The population of Sonoma County has doubled in less than 30 years, but the infrastructure was designed for a lot less growth. Proper planning should include double piping of all future development, appropriate diversion of development profits back into infrastructure upgrading, and more development along mass transit corridors. I noticed that both reduced growth alternatives were rejected from the short list, thus denying the public a choice on which direction Sonoma County will opt for. The City of Santa Rosa is planning on spending \$700,000 just on public relations with seven to eight million dollars for studies on whichever option is chosen. Would'nt this money be better spent on solving the problem like Enhanced Treatment?

Enhanced Treatment advocates solving the sewage into drinking water supplies problem by creating a new water district that utilizes Lake Sonoma as its source. Make a deal with Marin County to provide a longterm water source to Marin if Marin agrees to construct the delivery system. Guerneville and even communities like Camp Meeker could tie into it.

Finally, I would like to be the first person to publically advocate the removal of all the members of the Water Board. The only difference between the 1986 discharge that resulted in censure and an \$100,000 fine and present operations is that the water board has lowered the standards so Santa Rosa is not breaking the law. New information on the hazards to drinking water in the United States makes me want to tighten laws and raise the standards, not lower them. I would just like to see them held accountable for their actions.

their regulations to allow approval. Gravel pit use may be treated as rapid infiltration to infiltration to the Russian River, and would be equivalent to 20% discharge.

Rapid infiltration would likely be considered a discharge to the Russian River. The proposed 20% Russian River discharge greatly exceeds limits allowed in the current Basin Plan. Proposed Basin Plan revisions have not been finalized, and the Inland Surface Waters Plan is currently under judicial review. The proposed Basin Plan revisions would allow exceptions to a general 1% discharge limitation. Although it may be possible to receive approval for a 20% discharge, it may be doubtful that such a large increase in discharge would be approved, and the ultimate requirements for this type of discharge remain uncertain.

8. Manageable and Reliable System.

Because this alternative relies on maximum conservation to reduce wastewater flows, the feasibility of this level of conservation is a critical issue. It is not yet known whether it will be feasible to achieve a 4,300 MG reduction in wastewater flows through conservation. Also, while some forms of conservation, such as retrofit result in permanent flow reductions, other types of conservation measures may not be permanent if they require behavioral modification or maintenance of new systems by private citizens (e.g. composting toilets, greywater systems, drought drill). If the public ceases to implement conservation measures the system would not be able to deal with increased flows. Reliability of a conservation-based system may be marginal, unless conservation measures are designed to be permanent features of the system.

VOLUME I SCREENING REPORT ALTERNATIVE 4A

If they say that 20% discharge is illegal in the screening report, why do they now advocate such an alternative? In fact, even though they say it is doubtful that approval for a 20% discharge is likely, the City of Santa Rosa is actively pushing this obviously illegal alternative.

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ALTERNATIVE 4A

OBJECTIVES

1. ACCOMMODATE PROJECTED GROWTH.

This alternative exceeds the wastewater flows projected in the currently adopted subregional entities general plans. It allows for sensibly and properly planned growth along rail mass transit corridors.

2. PROTECT PUBLIC HEALTH AND SAFETY.

This alternative is the only alternative which treats wastewater to a quaternary level. Pasteurization eliminates pathogenic bacteria, viruses and organisms. It is a new and innovative way to eliminate dangers and emphasize reuse. Additional studies are needed to determine impacts of wastewater and additional monitoring is needed to determine existing impacts of wastewater in our waterways and drinking water supplies.

3. MAXIMIZE RECLAMATION AND REUSE

This alternative utilizes 100% of the wastewater inflow to the treatment plant for reclamation through double piping, wetlands creation, urban irrigation, residential reuse, and agricultural irrigation. It meets the objective. the ability to reuse 100% of the wastewater generated requires detailed design for further evaluation.

4. PROTECTS BENEFICIAL USES OF RECEIVING WATERS.

Direct receiving waters are wetlands along the Laguna de Santa Rosa and San Pablo Bay. The wastewater would be recovered after passing through the wetlands and reused so no wastewater would reach the river ,ocean or bay.

5. OPTIMIZE WATER CONSERVATION.

This alternative conserves 31% of the wastewater generated. It mostly meets the objective. Because this alternative relies on maximum conservation to reduce wastewater flows, the feasibility of this level of conservation is a critical issue. Studies need to be done to determine optimum levels of conservation.

6. WEATHER INDEPENDENT SYSTEM.

This alternative is weather independent. Additional storage is provided to enhance system flexibility.

7. SATISFY REGULATION AND GUIDELINES.

This alternative should satisfy regulations and guidelines because no water is dumped in the bay, river or ocean, and beneficial wetlands are created.

8. MANAGEABLE AND RELIABLE SYSTEM.

Because this system relies on maximum conservation to reduce wastewater flows, the feasibility of this level of conservation is a critical issue. It will require a strong commitment on the part of the City of Santa Rosa to vigorously promote conservation. The cogeneration facility with utilization of energy in a cascading manner should prove to be efficient and manageable. 7100 MG of Storage should increase reliability of the system.

9. ECONOMICALLY FEASIBLE AND SUCCESSFULLY FINANCED.

This alternative has high initial capital costs. However, if the revenues generated from cogeneration are factored in, this alternative should prove to be economically profitable over a 20 year period. The cogeneration facility will provide jobs and new business.

KEY ENVIRONMENTAL CATEGORIES

1. GEOLOGY AND SOILS.

Reservoir and wetland sites can be constructed if appropriate mitigation is implemented. Sonoma County General Plan indicates areas with high or moderate potential for landslides and liquifaction within the reservoir system. Additional study is required.

2. HYDROLOGY.

Further studies are required to evaluate the potential increase in flood hazard of wetlands within the 100 year flood plain.

3. GROUNDWATER.

Pasteurized wastewater poses less risk of groundwater contamination than unpasteurized wastewater. Additional study is required.

4. WATER QUALITY.

Pasteurization eliminates pathogenic bacteria, viruses and organisms. No other alternative does the same. All wastewater is reused so no wastewater is dumped into a bay, river or ocean. Pasteurization eliminates the need and cost of chlorination. Chlorination byproducts such as trihalomethanes have been shown to be carcinogenic. Toxics and heavy metals should be diverted before entering the system. Sources need to be identified and monitored, and polluters should bear the cleanup costs. Additional studies are required.

5. WATER CONSERVATION.

This alternative provides the maximum conservation of water to reduce wastewater inflow.

6. WETLANDS.

This alternative calls for the creation of 1000 acres of wetlands in the Laguna de Santa Rosa. Historically, the Laguna had a much larger wetland ecosystem. This alternative also calls for the creation of a 500 acre wetland near San Pablo Bay. Further work will be required to identify specific sites for wetlands and to determine the feasibility and acceptability of the proposal.

7. SPECIAL STATUS SPECIES.

Critical habitat for species listed pursuant to the Federal Endangered Species Act has not been designated in the vicinity of the components of this alternative. However, there are at least 1 threatened or endangered wildlife species, 3 threatened or endangered plant species, and 4 other special status species which may be substantially affected by the actions connected with this alternative. Further studies are required to evaluate the significance of this alternatives' affects on special status species and their related habitat and to identify additional special status species which may be adversely affected by the actions of this alternative.

8/9. VEGETATION AND WILDLIFE

This alternative could impact wildlife and associated habitats. The Tolay Lake and Santa Rosa Plain reservoirs could displace the existing habitat, but it will also create additional habitat. Species diversity could be altered by the temporary or permanent displacement of resident species from the extant habitat of the reservoirs and wetland creation /restoration sites and the addition of species into the newly created habitat areas. Migration corridors

may be blocked by reservoir construction at the reservoir sites though corridors have not been identified. Further studies are needed to determine present diversity indices and habitat values, predict changes in these values through wetland and reservoir creation/restoration, evaluate the impacts of water quality on vegetation communities and their associated wildlife habitat and identify migration corridors that are associated with storage reservoir sites.

10. FISHERIES.

Discharge could affect warm water fish in the Laguna de Santa Rosa wetlands and San Pablo Bay wetlands and anadromous fish that migrate past the discharge. The impact on anadromous fish is currently being studied. The discharge of pasteurized wastewater may actually help support resident warm water fish, but analysis of effluent toxicity data, and the native fish abundance is necessary to evaluate this potential.

11. TRANSPORTATION

This alternative will have short term construction impacts. Operational impacts associated with increased wastewater flows are expected to be mitigable. This issue will not distinguish between alternatives.

12. AIR QUALITY

Cogeneration facility will produce some air pollution. The amount and quality of pollution can be mitigated through the implementation of secondary superheaters, agglomerative and condensing gas scrubbers, lime slurry sulphur scrubbers and electrostatic precipitators.

13. NOISE.

This alternative will have short term construction impacts. Operational impacts associated with increased wastewater flows are expected to be mitigable. This issue will not distinguish between alternatives.

14. VISUAL RESOURCES.

The storage required for this alternative creates potential impacts on visual resources due to the multiple reservoir sites, especially at the storage pond in the Santa Rosa Plain. Additional study is needed and sites determined.

15. CULTURAL/HISTORICAL RESOURCES.

Many indian sites exist throughout Sonoma County. These need to be identified and studied before any construction proceeds.

16. LAND USE

This alternative advocates expansion of agricultural lands. This alternative rejects unplanned urban sprawl and proposes double piping in all new development.

17. SERVICES AND UTILITIES.

This alternative does not result in an increased demand for services or utilities which exceeds capacity of the existing infrastructure. This alternative produces approximately 5 million dollars worth of electricity each year which will offset the 2 million dollars per year in processing and pumping costs of sewage effluent. Double piping in new development will make the developers who profit from growth pay for implementation, and reduce the burden on existing ratepayers. Pasteurized wastewater will cost a lot less than using drinking water to irrigate urban landscapes, thus reducing water bills and conserving drinking water supplies.

18. SAFETY AND HAZARDS.

Infiltration of pasteurized wastewater from reservoirs and agricultural/urban irrigation will pose less threat than unpasteurized wastewater. Additional studies are needed. This alternative proposes cogeneration which will produce some air pollution. However, with modern pollution control technologies, this problem is mitigable. The combustion of sewage sludge and biomass from wetlands solves two other problems that no other alternative addresses. Toxic ash can be encapsulated in construction materials and used for base material along rail mass transit corridors.

19. SOCIO-ECONOMICS.

This alternative can be implemented on a smaller scale all along the Russian River communities and even in the Bay area and State to truly solve our wastewater crisis. Pasteurization of wastewater is a new concept for many, but many existing examples of this technology demonstrate the efficacy of enhanced treatment. The main problem is the resistance to progressive thought by the entrenched bureaucracy and the denial of regressives that sewage wastewater poses any danger to the public. The Russian River does not need 20% wastewater, it does not need 1% wastewater. The drinking water drawn from the Russian River requires so much

chloramination that the chlorination byproducts like the trihalomethanes pose a serious threat to public safety. The EPA has been discovering that chloramination of public drinking water causes fish toxicities even at low concentrations.

This alternative is a high initial cost alternative, but future electrical generation and increased business make this a very promising alternative.

20. ENERGY.

This alternative uses substantial amounts of energy, but also generates substantial amounts of energy. Over a 20 year period, all of the other alternatives will consume millions of dollars worth of energy, but cogeneration will produce millions of dollars worth of energy. The waste heat is utilized in a cascading manner to produce process steam, pasteurize sewage effluent, run refrigeration units, heat and cool buildings, heat and cool greenhouses, and assist aquaculture production.

A COMPREHENSIVE SOLUTION

By Paul Ogasawara

In formulating a longterm solution to the sewage crisis in Sonoma County, planners have so far failed to present a solution that actually solves the problem. Two major options* involve piping effluent over twenty miles, dumping in the Bay or Ocean. This just translocates the problem and creates new problems and health risks. These two options will cost over 150 million dollars and have a projected lifetime of 25 years. Yearly pumping costs are estimated at 7 million dollars per year. Although both pipelines cross major faults, planners say the pipe will only break in one place. Many other faults make these 2 options totally unacceptable. TH
W.
1A

Santa Rosa say they will choose between these two options. Too bad both are ineffective, temporary and costly. Sonoma County needs a solution that helps solve many problems confronting residents, one that controls growth with proper planning. Uncontrolled growth and deficient planning are the causes of these problems, sewage is only a symptom. A comprehensive solution must alleviate the causes before solving symptoms. Sonomans need a solution that cleans up the wastewater, not transport it.

Coupled with waste treatment, traffic congestion, bottle-necks, and unsafe roadways are threatening the quality of life in Sonoma County. Development of a mass transit system is imperative not only because it will create new jobs, conserve energy, solve the Bay Area commute, increase the mobility of thousands poor and elderly who do not drive, increase tourism through the wine country, and is easily implemented, it is possible to transport goods and materials quickly and economically. Mass transit is part of the solution.

Promoting a goal of cleaning the sewage and eliminating any health hazard is a key point in sewage alternatives. All new alternatives should advocate toxic material exclusion by monitoring and prevention of toxic entry. Sewage treatment to a tertiary level should begin any logical 21 st Century solution. A quaternary level of treatment is accomplished by using two processes. First, waste water is sent into a heat exchanger to pasteurize it. This process kills all harmful viruses and bacteria, just like pasteurizing milk. Second, this water is sent into a maze of dikes and waterways. This marshland ecosystem is designed and planted with various vegetations known for their adsorptive abilities. These processes in combination, cleans the wastewater until it truly poses no health hazard.

*NOTE ULTRAVIOLET RADIATION CAN DISINFECT WASTEWATER
BUT IT COSTS A LOT IN ENERGY (473,000 \$/YEAR)
UTILIZING COGENERATION WILL MAKE UV TREATMENT
ECONOMICALLY FEASIBLE AND ADD ANOTHER LAYER OF SAFETY

One important factor is the pasteurization process. An inexpensive energy source is required. Garbage, wood by-products, orchard and vineyard prunings, garden trimmings and even sewage sludge provide an endless supply. Today, millions are spent each year hauling tons of useable garbage to a landfill which will fill up by 1994. By burning wood material and garbage, steam energy is produced that is converted into electricity. Revenue is generated and pumping costs negated. Waste heat, a steam byproduct, is used to pasteurize tertiary treated sewage water. This cogeneration technology utilizes a cascading energy system. Waste heat from the pasteurization process could power heat pumps to heat and cool buildings. Finally the waste heat is used to heat greenhouses. This efficient use of energy makes economic and environmental sense. Costs are shared, problems solved, new businesses initiated, and sewage fees reasonable, not like the other options which plan on tripling rates.

Transportation costs presently total millions each year. Each day, at least three truckloads of sludge are dumped at the landfill. Trucks transport hundreds of loads of garbage daily. This costly process also adversely impacts roadways. Presently, rail lines run to only 4 miles away from the Llano Treatment Facility, 7 more to the Mecham Road Landfill. If SP doesn't tear up the track, and if only 11 miles of tracks are constructed, The Sewage Treatment Facility and the Mecham Road Landfill could be serviced by a rail transport system. Rail transport is ten times more efficient than trucks, and road repair costs are skyrocketing, so rails make perfect economic sense. In twenty years, rail transport conserves enough energy to extend our oil reserves another twenty years. If present trends continue, we will exhaust all our oil reserves approximately in the year 2040.

Building a new rail system will cost plenty. It will also create thousands of new jobs. Increased efficiency results if passengers utilize the tracks during the day while goods and materials are transported at night. Energy saved will pay for the whole system in ten years. The cost of not starting a rail transportation system will increase each year. PART could have been completed around the bay for 5 billion dollars, today, those costs total 50 billion.

Hopefully, ten years from now, when drilling off our coasts fouls our beaches, and people line up for gas, people won't wonder why we didn't start mass transit sooner. Maybe enough energy could have been saved and energy consumption reduced so drilling wasn't necessary.

The biggest positive aspect of this solution is the adaptability of the process. Every city produces garbage and sewage. Cogeneration systems are cost effective, and productive. The North Coast with its timber, could supply an endless source of high quality fuel, transported by rail.

Plants may be scaled up or down to fit each unique situation. This plan could become a model for other cities to emulate. Cloverdale and Ukiah could clean up their systems and stop polluting Sonoma and Marin Counties' drinking water. A landfill crisis facing America could be solved. Groundwater contamination reduced. Energy production becomes decentralized and cheaper. A new economy developed, generating jobs and tax revenues.

One final aspect deals with growth. Unplanned growth has caused the crisis, and is threatening the quality of life of everyone. Planning today will determine what our future will be. If present plans continue, gridlock, higher fees, moratoriums on new growth, and reduced services will prevail. Implementation of a modern mass transit system is a high priority in solving many problems. Growth should be restricted in the cities, and new cities along rail lines be developed. Greenways and bikeways established. Railroad stations renovated. Redesign older cities to unsnarl traffic while retaining original character and values. Make rail line focus point of use and accessibility for many people.

Three main points presented in this solution; One, make new developments build separate sewage treatment facilities. This would equitably shift waste fee burdens from established residents to new developers. Two, hold a design contest to develop Windsor and other new cities properly. This would involve fair competition among the finest designers in the country, instead of paying millions to a single, inept, biased, unimaginative 'consultant'. Third, hold a design contest for a new, twenty-first century mass transit system. Emphasize hybrid vehicles that run on rail or road. State a goal of a 30 minute commute to the City from Santa Rosa.

This solution is new, and innovative. It is effective. It solves the sewage crisis and presents new opportunities for proper, healthy growth. Proper planning will increase our quality of life, increase protection and services, and prevent dumping waste on each other. The initial costs are high, but other options will cost millions more in the future and ultimately fail.

This solution is a step towards the 21st century. Let us step forward to a brighter, cleaner, healthier future, not back into obsolete and costly failures. Remember, our future is not a matter of chance, it is a matter of choice.

Paul G. Green

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PAUL OGASAWARA

PROTOTYPE COGENERATION FACILITY

COST	REVENUE	DESCRIPTION
80-100 MD		CONSTRUCTION COSTS
	8 MD/YR	ELECTRICITY AND STEAM GENERATED 20 YRS- 160 MD
6 MD/YR		OPERATING COSTS 20 YRS- 120 MD
	4 MD/YR	TIPPING FEES 20 YRS - 80 MD
25 MD		CONSTRUCTION COSTS HOUSING- 500 PEOPLE
	7 MD	DEVELOPMENT FEES
20 MD		CONSTRUCTION COST -20 ACRES OF GREENHOUSES
	3 MD	GREENHOUSE PRODUCTION PROFITS /YR
20 MD	.5 MD	AQUACULTURE PRODUCTION PROFITS / YR
<hr/>		
275MD	317 MD	$317-275= 42$ MD OVER 20 YEARS = 2MD / YR PROFIT

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COGENERATION SCHEMATIC

