Item 7A



County of Santa Cruz

DEPARTMENT OF PUBLIC WORKS

701 OCEAN STREET. ROOM 410, SANTACRUZ, CA 95050-4070 (831) 454-2160 FAX (831) 454-2385 TDD (831) 454-2123

THOMAS L. BOUCH DIRECTOR OF PUBLIC WORKS

July 8, 2004

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SUBJECT SOLDWASTE AND RECYCLING FACILITIES SITING STUDY

Dear Interested Party:

We recently received your **name on a** list of residents interested in receiving notice of meetings concerning possible siting of a new solid waste and recycling facility in Santa Cruz county. We would like to thank you for your interest in this important community facility.

The purpose of this letter is to provide **you** with some background information **on** this project. Currently there are three landfills in Santa Cruz county. the County's Buena Vista Landfill, city of Santa Cruz Landfill and city of Watsonville landfill. The County landfill will reach capacity in about IS years, and the other two smaller landfills not long after that.

The County and the four cities have agreed to mutually explore options for managing solid waste once the County landfill is full. There are many options to be explored including a new landfill within the county, shipping county waste to an out-of-county landfill either close by or distant, non-landfill management of all or portions of the waste stream, such as composting, recycling or waste-to-energy.

Because the landfill option is likely to be the least expensive and take the longest to develop, it is important to determine if that approach is **a** realistic possibility. This determination must first be assessed on **a** technical basis snd then brought to our elected officials for their decision.

An investigation of the technical feasibility is now underway, having begun in 2001 with a Citizens Advisory Group (CAG) representing a cross section of county residents and interests. The CAG identified 24 possible locations countywide and ranked these study areas. While the CAG used the best available information on environmental hazards and resources, possible land use conflicts and social concerns to develop their ranking, this initial part of the study was not intended to be exhaustive and complete. The assignment was to only identify possible locations and rank them Much more investigation is necessary to fully address all possible issues, including those briefly considered by the CAG.

Since the completion of the CAG study, one location has been dropped for technical **reasons** and the remaining 23 study areas are **now** being examined by the Santa Cruz **County** Integrated Waste Management Local Task **Force** with **the** intent to eliminate those locations that clearly do not appear to be technically feasible. The Local Task Force is **a** countywide committee representing all four cities **and the** County.

Once this screening out is completed, the remaining study areas will then receive **a** detailed on-site technical investigation of geologic, hydrologic, biotic and other physical conditions to further identify **those** study areas that have technical obstacles for development. The result of this investigation will yield **a** much smaller number of possibilities that would then be recommended to the **Santa** Cruz County Board of Supervisors for full environmental analysis under the California Environmental Quality Act.

At the same time, the other non-landfill options will have been examined and the potential for their **use** will also be brought to the Board of Supervisors. The Board will then be able to make a decision **as** to which overall approach to managing the county's waste will best serve the community.

It is very important for us to hear from you on issues that these options raise, including the local issues associated with each of the 23 study areas now under consideration. It is very important to note that **no** decisions have **been** made on whether to proceed with any of these 23 locations. We are still in the early information gathering phase.

A complete description of the history of **this** study, including specifics **on** study areas and **issues** being considered can be found at the following internet web page: <u>www.dpw.co.santa-cruz.ca.us</u> Look under the "Recycling & Solid Waste Facilities Siting Project" link.

Notices for upcoming meetings of the Integrated Waste Management Local Task Force can be found on the above web page and will be published in the local newspapers one to two weeks in advance of each meeting. Their next meeting is September 9, 2004, at the Capitola City Hall, from 8:30 to 10:30 AM. The agendas for their meetings can also be found at the above web page.

Please do not hesitate to contact the undersigned at the address listed above or by phone **at** (831) 454-2 160 for additional information.

Yours truly, THOMAS L. BOI CH virector o Public

8. Patrick Mathews Solid Waste and Recycling Manager

DDG:mh

SITINGSTUDYMH.wpd



County of Santa Cruz

DEPARTMENT OF PUBLIC WORKS

701 OCEAN STREET, ROOM410, SANTA CRUZ CA 95060-4070 (831)454-2160 FAX (831) 454-2385 TDD (831) 454-2123

THOMAS L. BOLICH DIRECTOR OF PUBLIC WORKS

SANTA CRUZ COUNTY

INTEGRATED WASTE MANAGEMENT LOCAL TASK FORCE

MEETING AGENDA

THURSDAY, SEPTEMBER 2,2004 6:30 - 9:30 PM

HENRY J. MELLO CENTER FOR THE PERFORMING ARTS 250 EAST BEACH STREET WATSONVILLE

Oral Communications Public opportunity (up to 5 minutes) to address an issue not on the agenda

- II. Additions / Deletions to Agenda Task Force may add or remove agenda items
- III. Approval of June 10,2004 Meeting Minutes (Action Item)
- IV. Written Correspondence
- V. Disposal Facility Siting Study Non-Landfill Alternatives
- VI. Review of Disposal Facility Landfill Study Areas (Action Item)

As a courtesy to those persons affected, please attend the meeting smoke and scent free.

TRANSLATION SER VICES / SERVICIOS DE TRADUCCION

Spanish language translation is available **on** an **as** needed basis. Please make advance arrangements with the Department of Public Works, in Room **410**, or by telephone at (831) **454**-2160.

Las sesiones de la Local Task Force pueden ser traducidas del inglés al español y del español al inglés. Porfavor haga arreglos anticipadamente con el Departamento de Trabajos Publicos en el cuarto numero 410, o por teléfono al numero (831) **454-2160**.

ACCOMMODATIONS FOR PERSONS WITHDISABILITIES

If you are a person with a disability and wish to attend the meeting and you require special assistance in order to participate, please contact the Department & Public Works, in Room 410, or by telephone at (831) 454-2160 at least 72 hours in advance of the meeting in order to make arrangements. Persons with disabilities may request a copy & the agenda in an alternative format. As a courtesy to those affected, please attend the meeting smoke and scent free. Agenda documents may be reviewed at the Department of Public Works, in Room 410, Governmental Center.

PUBLIC PARTICIPATION FOR LOCAL TASK FORCE MEETINGS

As a County Committee, the Local Task Force is governed by its by-laws which state that the conduct of the Task Force shall conform to Roberts Rules of Order and the following: By-Laws, p.3, Section 2.07

- *c.* Public participation in Task Force meetings shall be allowed as follows:
 - 1. An opportunity for members of the public to directly address the Task Force on any item on the agenda of interest to the public shall be provided before or during the Task Force's consideration of the item.
 - 2. In addition, the agenda will provide for community oral communications on items not on the agenda which are within the subject matter jurisdiction of the Task Force at the beginning of each regular meeting agenda.
 - 3. The chairperson of the Task Force may establish reasonable limits on the amount of time allotted to each speaker on a particular item, and the Task Force may establish reasonable limits on the total amount of time allotted for public testimony on a particular item or the total amount of time allotted for community oral communications. When further discussion is required, the Task Force may vote to allot time in the agenda of the following meeting.

In addition, the Task Force established the following public participation policy:

- 1. Time limits for total public input on an individual agenda item are set on a case-bycase basis
- 2. Persons may speak only when recognized by the Chair.
- 3. Three minute time limit per speaker per agenda item.
- 4. Persons must limit comments to the topic at hand.
- **5.** Persons may speak once per recommended action, after the *staff* report and after the Task Force deliberation, unless in response to a question from a Task Force member.
- 6. Questions from Task Force members to members of the public must go through the Chair and responses must follow #2-4 above.

COUNTY OF SANTA CRUZ DEPARTMENT OF PUBLIC WORKS MEMORANDUM

DATE: August 23,2004

TO:	Integrated Waste Management Local Task Force	
FROM:	Dan deGrassi, Department of Public Works 831-454-3	3102
SUBJECT:	AGENDA MATERIAL FOR SEPTEMBER 2 MEETIN	NG

I. ORAL COMMUNICATIONS

Any person may address Local Task Force during its Oral Communications period. Presentations must not exceed five minutes in length, and individuals may speak only once during Oral Communications. All Oral Communications must be directed to an item not listed on today's Agenda, and must be within the jurisdiction of the Task Force. Task Force members will not take actions to respond immediately to any Oral Communications presented, but may choose to follow up at a later time, either individually, or on a subsequent Local Task Force Agenda.

II. ADDITIONS / DELETIONS TO AGENDA

III. APPROVAL OF MEETING MINUTES - April 8,2004

Minutes of the June 10,2004 meeting are attached for review and approval.

IV. WRITTEN CORRESPONDENCE

Written Correspondence that has been received since June 10,2004 is included as **Attachment A**. Outgoing correspondence is also included. This attachment contains the following:

- 1. A petition signed by 3000 Scotts Valley residents opposing Study Areas 22 and 23 (pg. A-21).
- 2. Copies of notification letters mailed out to interested parties and a Task Force meeting notice postcard (pg. A-99).
- 3. Copies of notification letters mailed out Study Area property owners (pg. A-106).
- 4. A letter from the City of Scotts Valley, including comments from the Scotts Valley Water District and a resolution from the Scotts Valley Fire Protection District, requesting removal of Study Areas 22 and 23 (pg. A-112).

V. DISPOSAL FACILITY SITING STUDY - NON-LANDFILL ALTERNATIVES

The purpose of this agenda item is to provide an overview on the status of the review **of** alternatives

to local landfill disposal of solid waste generated within Santa Cruz County. These alternatives include:

- 1. out-of-county disposal
- 2. recycling
- 3. composting
- 4. residuals conversion (also **known** as waste-to-energy).

It should be noted at the onset that, alternatives 2-4, will all still require some level of disposal, that their diversion is not 100%. These activities may greatly reduce, but will not totally eliminate, the need for landfill disposal. Furthermore, each in itself requires the acquisition of land and construction of capital improvements.

1. Out-of-County Disposal

Using out-of-county disposal for solid waste generated in Santa Cruz County will require development of local infrastructure to handle the refuse. This will include a transfer station and accompanying diversion facilities (that is, recycling and composting) to minimize the quantity of material shipped out of the county. This option can be grouped into two categories based on transportation mode:

a. Local (transport by truck)

This option involves disposal in regional landfills that can be accessed by truck and transfer trailers. Geographically, this would involve landfills in neighboring counties. Public Works has begun contact with such landfills. See Attachment B regarding contact with the Monterey Regional Waste Management Authority (Marina Landfill) in Monterey County.

b. Distant (transport by rail)

Known as "rail haul" in the industry, this option involves loading refuse into containers that are shipped by railroad to distant, usually very large landfills. Possibilities include landfills in Nevada, Utah, Oregon, Washington and Arizona. **Staff** has **begun** initial investigation into the infrastructure and cost parameters of this option and will report on this possibility next year.

2. Recycling

While each city and county in California is required by state law to reduce landfill disposal by at least 50%, many jurisdictions, including those in Santa Cruz County are working to achieve a much higher number. Common sense tells you that the more material diverted from a landfill, the longer that existing landfill will last. City and county programs to increase diversion through recycling (and reuse) are extensive and are continually being reviewed for improvement and expansion.

3. Composting

The composting of organic material is another method of reducing the need for landfill disposal. Unless done completely within a building, a composting facility would share many of the same siting difficulties as a landfill, in terms of public perception of odor and visual impacts. However, in reality, recently approved state composting regulations are so stringent that **these** issues rarely become a problem.

4.Residuals Conversion and Waste-to-Energy

In recent months the state of California has placed an increased emphasis on the development of technology to convert the residuals from what can't be recycled **or** composted into energy. These emerging technologies are, for the most part, still in the prototype phase, with very few examples of actual operating systems with a proven track record. Nonetheless, County staff will continue to monitor the development of this option and its potential for use in Santa Cruz County along with the more conventional commercially available waste-to-energy technologies (see Attachment C).

In conclusion, the staff investigation of these alternatives to a new local landfill will continue and will become the primary focus of the staff reports to the Task Force beginning early next year.

VI. DISPOSAL FACILITY SITING STUDY - REVIEW OF LANDFILL STUDY AREAS

This item is a continuation from the meeting discussion **of** June 10,2004 on the Disposal Facility Siting Study.

The following issues are presented in this section:

- A. Background
- B. Process Schedule
- C. Access Analysis
- D. Public Water Supply Analysis
- E. Parcel Configuration and Topography Analysis

A. Background

1. Study History

Under a Memorandum of Understanding approved in 2000 by the cities of Capitola, **Santa** Cruz, Scotts Valley and Watsonville, and the County of Santa Cruz, the Santa Cruz County Integrated Waste Management Local Task Force (Local Task Force) is conducting a study to evaluate future countywide solid waste management options. This study includes examination of the feasibility for a new sanitary landfill that would have the ability to serve residents and businesses of all four cities, plus the unincorporated area. This study implements a policy of the Santa Cruz County Countywide Integrated Waste Management Plan, adopted in 1996by all 4 cities and the county, and approved by the State of California in 1999.

As a first step in this study, each city and **the** county appointed members to a Citizens Advisory Group (CAG). Members also include representatives from the Sierra Club and Farm Bureau. The charge *to* the CAG was to identify and rank possible locations for a new countywide landfill, and also to identify and rank possible locations for other countywide solid waste facilities, including a transfer

station, materials recovery facility, composting facility and residuals conversion (waste-to-energy) facility. The underlying rationale for this assignment was to examine the feasibility of disposing, within Santa Cruz County, the solid waste generated locally and the corresponding feasibility of out-of-county disposal. (The term "disposal" is used here generically and includes landfill disposal as well as other management options such as recycling, composting and waste-to-energy. Each of these other options will still require some amount of landfill disposal even if that amount is small.)

The Local Task Force study is structured to examine local options and out-of-county options and to then present the array of choices to the County Board of Supervisors, and cities, for their direction as to which path becomes the focus of the environmental review (CEQA) process. This proposed solid waste management approach is then examined in detail in an Environmental Impact Report, after which a final decision is made. Attachment D shows graphically this overall process, and approximate timeline, for establishing future disposal facilities. The local landfill option is being examined first because it is assumed to be less expensive, although more difficult and time-consuming to implement, than out-of-county options.

2. Citizens Advisory Group Final Report

The Citizens Advisory Group in June **2003**, completed its review and ranking of possible disposal facility sites within the county. Their study looked at possible locations for three types of disposal facilities: landfill, transfer station and transfer station in combination with ancillary facilities, such as materials recovery, composting or conversion technology. The Citizens Advisory Group Final Report –Landfill Siting Study addresses landfill sites only to reflect the previous Local Task Force determination that its first, and most time-consuming, step will be to examine possible landfill sites.

The Citizens Advisory Group began by selecting parcels based on a minimum size requirement. Certain areas of the county were excluded due to environmental and regulatory constraints. The resulting Study Areas were then ranked against seventeen factors addressing environmental, social and engineering issues. More detail on this portion of the study can be found in the document, Citizens Advisory Group Final Report.

The Citizens Advisory Group Final Report contains the following information: Explanation of CAG review-evaluation-rankingprocess Exclusionary Criteria – regulatory, practical, other Site Ranking Criteria Site Ranking Score Sheet with Criteria Weights Assigned List of 24 landfill Study Areas with their overall CAG ranking. List of Landfill Study Areas with no TPZ List of Landfill Study Areas with partial TPZ Background information on 24 Study Areas This report has **NOT** been reproduced with this agenda packet and is available by **calling** the telephone number listed at the beginning on this agenda memo. A copy is also available *on* the Internet at <u>http://www.dpw.co.santa-cruz.ca.us/citizensadvisorygroup.pdf.</u>

2. Local Task Force Review

In December *2003*, the Local Task Force began its examination of the information in the CAG Final Report. The Task Force is using a three-stage process to review the Study Areas identified by the CAG and narrow down the list of potential locations.

1. Initial review of in-house information to determine practical feasibility.

2. On-site technical investigation of geologic, hydrologic, biotic issues to identify potential fatal flaws.

3. Formal CEQA review to provide in-depth impact analysis of all relevant issues.

An underlying premise of this approach has been that not all of the CAG recommended Study Areas would move to each subsequent stage, that many would be dropped out. The study is now in the first stage: all **23** Study Areas are being considered in terms of their practical feasibility with the intent to select a smaller number of sites to proceed with a detailed on-site technical investigation and comparison of hydro-geologic, biotic and other conditions specific to each location.

The basis for screening out Study Areas at this initial level **of** review is one of practical considerations, i.e., a site should not proceed if there are obvious physical conditions which make that location not practically feasible to develop for a landfill. The conditions being examined are: 1) access, **2**) proximity or impact potential to public water supply resources and **3**) parcel configuration and topography.

1) Access

There may be locations where the access conditions are such that reasonable improvements cannot be made to accommodate the type and level of vehicular movement associated with a landfill. 2) **Risks** to local water resources. including specifically, proximity to oublic water supply water wells There may be study areas with hydrologic conditions that pose **an** obvious risk to local water resources and to public water supply water wells. Certain study areas may conflict with land use restrictions proposed under the state Drinking Water Source Assessment and Protection program (DWSAP). Attachment E provides detail on the DWSAP.

3) Parcel configuration and topography

There may be locations where the combination of topography and parcel configuration are not practically feasible for landfill development or provide adequate disposal capacity.

The effect of this initial screening will be to reduce the number of Study Areas that would move on to the on-site investigation stage. Having as small a number **of** Study Areas as possible for this next

phase will minimize neighborhood concern and minimize the cost for additional research that would likely reach the same conclusion, that the Study Area is not practically feasible.

The early elimination of Study Areas solely on these grounds does NOT mean that other environmental or social issues- such as proximity to <u>private</u> water supply wells or to residential development- will not be addressed with respect to any remaining Study Areas. These and other such issues most certainly will be comparatively evaluated in more detail at subsequent stages of this study. For now, however, the focus is strictly on the three factors listed above. Analysis of these three factors is presented in Section V.C. of this **staff** report, below.

B. Process Schedule

The Task Force has previously approved the following general sequence for proceeding with this site selection process:

- Study Area Preliminary Selection
- **b** Public Meetings
- **D** Study Area Final Selection
- On-Site Technical Investigations
- Recommended Site Alternatives
- Formal Environmental Review

Based on the experience of recent Task Force meetings, *staff* is now proposing that the aforementioned public meetings be held during the on-site technical investigation stage of the study. **The** reasoning here is that the public input being received during the recent Task Force meetings is, at this point in the study process, serving the purpose originally envisioned for the above proposed public meetings. Public meetings that would be held after the start of the on-site technical investigation stage of the study can focus just on those Study **Areas** remaining under consideration and can focus on the type of information pertinent to the issues to be investigated during the on-site technical investigations. We therefore suggest that the Task Force consideration of the dates, location and format of these meetings be discussed early next year.

Accordingly, the following revised meeting schedule is recommended:

September 2,2004	Complete the practical feasibility screening review for access and water.
December 9,2004	Complete the feasibility screening regarding Study Area parcel

 Complete the reasonity screening regarding Study Area parcel configuration and topography issues. Final decision on which Study Areas are to have on-site investigations and recommend same to Board of Supervisors and city councils.

February 10,2005

Begin review of new Study Areas for non-landfill alternatives.

Beginning in February 2005 the review process for non-landfill Study Areas would start and run probably for three to four meetings. These non-landfill Study Areas include possible locations for stand-alone Transfer Stations and Transfer Stations in combination with Materials Recovery Facilities, Compost Facilities or Residuals Conversion Facilities. The field investigations for the landfill site candidates would begin during this time and are anticipated to take **1-3** years to complete.

Recommended Action

Approve the above schedule subject to necessary adjustments.

C. Landfill Study Area Review

1. Review of Study Areas and Preliminary Screening - Access

The purpose of this discussion is to evaluate the access to each of the twenty-three Study Areas in order to screen out those Study Areas determined to be not practically feasible. The focus of this evaluation is the access to each of these Study Areas in the context of whether it is practically feasible to improve or develop access that can serve the projected level of traffic during the landfill operation. Attachment F contains a table showing the waste quantity and traffic projections that were used in the preparation of the access analysis. The access analysis has been prepared by the Roads Engineering Section of the County Public Works Department. While this analysis is not intended to be all-inclusive, it does provide a basis for screening out Study Areas that may not be practical to develop, given available information. The full report is included with this memo as Attachment G.

This report contains an executive (narrative) summary with recommendations, an evaluation checklist for each of the **23** Study Areas and a (spreadsheet formatted) summary of the checklist. The checklist addresses conditions and necessary improvements for state highways and County roads leading to the site, conditions and necessary improvements on access roads leading from **County** roads to the site and a traffic evaluation of the road system leading to the respective site. Very **rough** estimates of costs associated with necessary improvements have been identified for each and **are** part of the checklist.

The executive summary of this report, in addition to providing a narrative on each Study Area, addresses the concept of using a remote location for a landfill that would only accept transfer trucks, **i.e.**, used in combination with a solid waste transfer station sited in a more centralized location. Under this scenario, the anticipated vehicle count would be substantially lower as the public and refuse collection vehicles would not drive to the landfill. However, the report concludes that the **same** improvements identified for the worst case high volume public access scenario would still be required to accommodate the large transfer trucks, even if there were many fewer of them. It's more a function of vehicle size rather than number of vehicles.

The first section of the checklist addresses, in detail, anticipated physical improvements to the existing county (or state) road system, including right-of-way acquisition, grading, widening, alignment, culverts and bridges. The second checklist section the same issues for access roads leading from the public road to the landfill site, plus additional property acquisition where needed for this access. The third section of the checklist addresses projected traffic improvements, pedestrian and bike lane improvements for the county road system projected as the route to the site.

The report groups its findings and recommendations, <u>regarding access only</u>, into three categories: I. Landfill site access with the most viable constructability and realistic environmental permitting factors.

II. Landfill site access with viable constructability but not highly recommended due to serious environmental permitting issues.

III. Landfill site access with both serious constructability and environmental permitting issues.

Staff is recommending that the Study Areas in the last category be dropped from further consideration based on serious issues with the ability to construct or improve access and/or significant environmental permitting constraints associated with such access.

Recommended Actions

1) Eliminate the following Study Areas from further consideration based on access being inadequate and not practically feasible to improve or develop and other reasons **as** the Task Force may specify:

Study Areas 14, 14A, 14C, 17, 18, 21, 29, 30

2. Review of Study Areas and Preliminary Screening - Public Water Supply

The purpose of this analysis is to determine whether there are obvious hydrologic flaws with any of the sites that would preclude their use as landfill sites and to evaluate the theoretical risk posed by these sites to public water supply wells. The sites were given qualitative assessments as to various hydrologic issues that will need to be addressed should they be selected for landfill siting. This is a cursory screening analysis and not meant to replace a thorough hydrologic analysis.

The analysis was conducted assuming a worst case leakage scenario and evaluated the likelihood that the leakage would create relatively immediate (i.e., before corrective measures could be implemented to protect the resource) and significant impacts to community groundwater supplies. The analysis heavily weighted the site proximity to **1**) Primary Groundwater Recharge (PGWR) areas, 2) known public water supply wells, and 3) useable groundwater aquifers and water resources. Consequently, if a public water supply well is mapped within 2000-feet of a proposed site, that site was generally given at least a "Moderate" risk rating. (While the DWSAP summary maps previously presented to the Task Force showed a 1000' radius for the two-year wellhead protection zone, the distance can

vary ftom **700** feet to 2000 feet and the more conservative distance of **2000'** was used in this analysis.) Also, if a large area of PGWR was mapped on the site and this area could not be avoided for landfill use, then that Study Area is being recommended for exclusion from further consideration, consistent with our approved siting criteria.

Although this analysis concentrated on groundwater issues, impacts to nearby streams and springs, as they potentially interact with the groundwater, were considered. The siting of a landfill in close proximity to any of these features does not necessarily mean leakage would create an immediate impact. A direct hydrologic connection between the landfill and these features must first exist. This study analyzed whether obvious connections exist at the candidate sites.

Attachment H provides the full text of the report prepared by the County Hydrologist for this analysis, including a summary table showing conclusions of the analysis. Summary maps of the DWSAP 2000' wellhead protection zones are also included.

Recommended Action

1) Eliminate the following Study Areas from further consideration based on separation from public water supply groundwater resource being inadequate and not practically feasible to improve, and other reasons as the Task Force may specify:

Study Areas 9, 10, 19, 20, 23

<u>3. Review of Study Areas and Preliminary Screening - Parcel Confirmation and Topography</u> The purpose of this discussion is to evaluate the each of the twenty-three Study Areas in relation to parcel configuration and topography to screen out those Study Areas determined to be not practically feasible to develop from a landfill engineering perspective. While this review was originally intended by staff to cover just **three** questionable Study Areas, it now seems prudent to conduct this review on all remaining Study Areas (i.e., those not eliminated by virtue **of** the above two practical feasibility screening factors) as a more rigorous check **prior** to the on-site investigation stage of the overall study.

Public Works had originally thought to conduct this review in-house, however, it would be more appropriate to use the services of an outside landfill engineering firm for this work. The scope of such a study should be to review existing data assembled by Public Works, and other specified sources, for each of the remaining Study Areas and to provide the Task Force with recommendations as to which Study Areas do not appear practically feasible to develop for a landfill based the physical parameters of parcel configuration and topography. This report should also give a preliminary estimate of possible disposal capacity for each remaining Study Area. This report should be available for the December meeting of the Task Force.

Recommended Action

Direct staff to obtain an evaluation from a landfill engineering firm on the remaining Study Areas with recommendations as to which Study Areas do not appear practically feasible to develop for a landfill based the physical parameters of parcel configuration and topography.

VII. ADJOURNMENT

NEXT MEETING: December 9,2004 in Santa Cruz

PRELIMINARY HYDROLOGIC ANRL'YSIS OF 23 POTENTIAL LANDFILL SITES IN SANTA CRUZ COUNTY, CALIFORNIA

Twenty-three potential sites were evaluated to determine if landfills constructed there would create obvious, relatively immediate risks to county water resources if these landfills were not properly designed to prevent leakage. The purpose of this analysis is to determine whether there are obvious hydrologic flaws with any of the sites that would preclude their use as landfill sites and to evaluate the theoretical risk posed by these sites to public water supply wells. The sites were given qualitative assessments as to various hydrologic issues that will need to be addressed should they be selected for landfill siting. This is a cursory screening analysis and not meant to replace a thorough hydrologic analysis.

The primary data sets used in this analysis are the geologic map of Santa Cruz County, a county GIS map of known public water supply well locations, the county map of primary groundwater recharge (PGWR) locations, and elevation information taken from the USGS digital elevation model for this county.

Site topographic maps, showing the site parcel boundaries, streams, and geologic information were prepared for many sites. Cross-sections were prepared for numerous sites where sufficient subsurface geologic information could be inferred. These maps and cross sections were prepared as working documents and as such have not been reproduced in this report. They are on file with the Department of Public Works.

The analysis was conducted assuming a worst case leakage scenario and evaluated the likelihood that the leakage would create relatively immediate (i.e., before corrective measures could be implemented to protect the resource) and significant impacts to community groundwater supplies. The analysis heavily weighted the site proximity to 1) PGWR areas, 2) known public water supply wells, and **3**) useable groundwater aquifers and water resources. Consequently, if a public water supply well is mapped within 2000-feet of a proposed site, that site was generally given at least a "Moderate" risk rating. Or, if a large area of PGWR was mapped on the site and this area could not be avoided by landfilling, that site was usually recommended for exclusion from further consideration.

Although this analysis concentrated on groundwater issues, impacts to nearby streams and springs, as they potentially interact with the groundwater, were considered. The siting of a landfill in close proximity to any of these features does not necessarily mean leakage would create an immediate impact. A direct hydrologic connection between the landfill and these features must first exist. This study analyzed whether obvious connections exist at the candidate sites.

<u>SITE 3:</u>

There are no public water supply wells within 2000-feet of Site **3**. The site straddles the San **Andreas** Fault and is bounded along its southern perimeter by the Pajaro River. The site **is** underlain primarily by the Purisima Formation (Fm) south of the San Andreas and shale of the Mount Pajaro area to the north. The San Andreas Fault should act as an effective barrier to groundwater flow. Construction of a landfill north of the fault would preclude groundwater impacts

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to the south and vice-versa. Proposed revisions to the county's PGWR map show some groundwater recharge in the Southern-most portion of this site. Regional studies show that the Murphy's Crossing area, located immediately to the south of this site, is a major stream flow **loss** area for the Pajaro River, indicating this area recharges the deeper aquifers in this area. It is likely that the southern one-fourth of the Site **3** is part of this recharge zone. Due to the structural deformity of bedding, likely due to the local faulting, it is unclear **as** to how much of the remaining part of Site **3**, south of the San Andreas, contributes to groundwater recharge in this area. Additional hydrogeologic studies will be required to better assess the degree that this area recharges the basin. <u>Risk Ranking: Moderate</u>

<u>SITE 4:</u>

There are no public water supply wells within 2000-feet of Site 4. This site lies to the south of the San Andreas Fault and is underlain by the Purisima Fm and possibly the middle siltstone member of the Butano Sandstone Fm. As with Site 3, this site is immediately north of a recharge zone to the deeper Pajaro Valley aquifers. A 500-foot wide swath of PGWR, as proposed in the revised PGWR map, occurs in the center of this site. Due to the structural deformity of bedding, likely due to the local faulting, it is unclear as to how much of the remaining part of Site 4 contributes to groundwater recharge in this area. Additional hydrogeologic studies will be required to better assess the degree that this area recharges the basin. The eastern half of the site, outside the PGWR area, probably does not significantly contribute to groundwater recharge. <u>Risk Ranking: Moderate</u>

SITES 6A and 6B:

There are no public water supply wells within 2000-feet of Sites 6A or 6B. These sites straddle the San Andreas Fault and are underlain primarily by Purisima Fm to the south of the fault and Mount Pajaro Shale and Mount Madonna Sandstone to the north. A landfill on the north side of the fault would be hydrologically separated from the Pajaro basin. *On* the south side of the fault there would be a hydrologic connection via the Purisima. However, this portion of the Purisima apparently is not overly permeable, based on the lack of high permeability soils in this area. With the exception of some ephemeral streams along the southern edges of these sites, there is no PGWR mapped there. Further evaluation of the recharge potential of the Purisima would need to be evaluated if the landfill were proposed to be constructed on the south side of the fault. Construction on the north side of the fault would create a low risk to county water resources. <u>Risk Rankine: Low to Moderate</u>

<u>SITE 7:</u>

There are no public water supply wells located within 2000-feet of Site 7 nor is there any PGWR mapped in the vicinity. The site is underlain by Mount Pajaro Shale and Mount Madonna Sandstone. The site lies on the north side of the San **Andreas** Fault and is hydrologically separated from the Pajaro basin. <u>Risk Rankine: Low</u>

<u>SITE 9:</u>

There are no public water supply wells located within 2000-feet of Site **9**. Approximately 28% of the site is mapped **as** PGWR. Site **9** is underlain primarily by the fluvial facies of the Aromas Sand Fm and to a lesser extent, older flood plain deposits. While sand may dominate the composition of the fluvial facies, where silt and clay layering occur, the permeability of overlying soils may not quite meet the criteria for PGWR. But, both of the geologic units underlying the site act as water-supply aquifers to the region and this area is believed to be a main recharge area to the groundwater basin. <u>Risk Ranking: High, recommend exclusion from further consideration</u>.

<u>SITE 10:</u>

There are no public water supply wells located within 2000-feet of Site 10. The site is underlain primarily by the fluvial facies of the Aromas Sand Fm, colluvium derived from the Aromas Fm, and to a lesser extent, older flood plain deposits. Both of the geologic units underlying the site act as water-supply aquifers to the region and this area is believed to be a **main** recharge area, even though less than a tenth of the site is mapped as PGWR. <u>Risk Ranking: High, recommend exclusion from further consideration</u>.

<u>SITE 11:</u>

There are no public water supply wells within 2000-feet of Site 11. Site 11 is underlain by the fluvial facies of the Aromas Fm capped with a thin layer of the eolian facies. Watsonville Terrace deposits occur beneath the Aromas Fm here but, are likely also very close to the groundwater table. Groundwater is very shallow at this location; probably within 10-feet of mean sea level. Because the Aromas and terrace deposits are local aquifer units, a leaking landfill has the potential to impact these units. However, the shallow aquifers immediately down-gradient from this area are impacted by high levels of boron, nitrate, chloride and high conductance. Seawater intrusion, due to overpumping of the groundwater basin has impacted most of the shallow and deep aquifers between the Site 11 and the coast. Unless seawater intrusion is reversed, a highly unlikely scenario, leakage at this site should be considered a low **risk** to local water supplies. **Risk** Ranking: Low to Moderate

SITE 14. 14A. and 14C:

There are 5 public water supply wells within 2000-feet of Site 14/14C and no public water supply wells within 2000-feet of Site 14A. The site is entirely underlain by the upper hydrostratigraphic units of the Purisima Fm. Between the Purisima water-transmitting hydrostratigraphic units are flow inhibiting layers of cemented sandstone, siltstone and shale. As a result, groundwater in the Purisima flows more easily within the bedding plane direction. Minor amounts of PGWR are mapped along the site perimeters where the site boundaries overlap stream alluvium. Based on the dip of the bedding within the Purisima, it is possible that the groundwater capture zones in wells located up-gradient (northwest from the sites) may be intercepted by landfill excavation. However, further analysis is needed to determine each well construction, stratigraphy, and groundwater elevation. If the groundwater elevation or the gravel packs are constructed below 300-feet, relative to mean sea level (msl), then the risk to these wells from a landfill leak may actually be low.

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Additional hydrogeologic studies are needed to better assess risk to local wells. <u>Risk Ranking:</u> <u>Moderate to High</u>

SITE 15:

There are no public water supply wells within 2000-feet of Site **15**. Approximately **25%** of the site is mapped as PGWR. This PGWR area probably corresponds to the outcrop of the important "A" hydrostratigraphic unit. However, because this site is *so* large, a landfill could be designed to preclude filling over PGWR surfaces or excavating into the "A" unit. Otherwise, if the landfill were excavated into this unit and leakage were to occur, contaminants could migrate relatively rapidly and potentially impact water quality in Soquel Creek. Risk ranking dependent on development restrictions placed on landfill design and further hydrogeologic studies of the site. Risk Ranking: Low to High

SITE 16:

There is one public water supply well within 2000-feet **of** Site **16**. There is no PGWR mapped at this location. Because of the well and possible landfill locations and the dip of the Purisima Fm, and likely groundwater flow direction there is a minimal chance that the nearby well would be impacted from leakage from the landfill. Risk Ranking: Moderate

SITE 17:

There is one public water supply well within 2000-feet of Site 17 on the opposite side of the West Branch of Soquel Creek. PGWR is mapped in the southeast corner of the site and occupies about 20% of the site area. This recharge zone probably represents the outcrop area of a sandy unit within the Purisima Fm that dips approximately **5** degrees to the south-southeast. **The** landfill should not be constructed over this PGWR area. Based on the orientation of bedding, landfill, stream and well locations there is only a minimal chance that this well would be impacted from landfill leakage. <u>Risk Ranking: Moderate</u>

Site 18:

There are two public water supply wells within 2000-feet of Site 16. This site is underlain by basar Purisima Fm with the exception of a small area of Lompico Fm in the northwest comer and alluvium along the western boundary southwest quadrant. The basal Lompico Fm consists primarily of siltstone in this region. A north-south cross-section through this site reveals the Lompico Fm is likely to occur directly below the alluvium and Purisima Fm. Approximately 14% of the site area is mapped as PGWR. This area occurs along the northern and northwest site boundaries and may correspond to outcrops of the Lompico Fm. **The** Lompico Fm is the primary aquifer in this region and the Scotts Valley area and should be protected from contamination. Blackburn Gulch, located immediately to the west of Site 18, may be an important groundwater recharge area for the Lompico Fm. A landfill appears feasible at Site 18 as long as the landfill excavation does not extend below the base of the lower permeability Purisima Fm nor should the

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landfill be placed over the alleviated valley in the central region of the site. As long as the landfill cells are contained within the Purisima Fm, there is little chance that the 2 public water supply wells would be impacted from landfill leakage. Risk Rankine: Moderate

<u>SITE 19</u>

There are no public water supply wells within 2000-feet of Site 19 and only a small area of PGWR mapped in the extreme southwest corner of the site. Surficially this site is underlain by the conglomeratic member of the Butano Sandstone Fm and the Monterey Fm. The Lompico Fm is likely to occur directly beneath the Monterey Fm at this site. This area is a recharge location for the Lompico, the groundwater from which flows toward Scotts Valley to the south. There are several district production wells 1.5- to 2-miles directly down gradient from the landfill that extract groundwater from the Lompico Fm. Construction of a landfill at this location would place wastes directly atop the Lompico Fm and the Butano Fm which likely contributes groundwater to the more permeable Lompico Fm in this area. <u>Risk Ranking: High, recommend exclusion from further consideration</u>

SITE 20:

There are **4** public water supply wells within 2000-feet of Site **20**, **2** of which are located within the site boundary. The proposed revisions to the PGWR mapping show that approximately 21% of the site is PGWR. This site also occurs in the most permeable and important hydrostratigraphic unit in the Purisima, the "A" unit.

SITE 21:

There **are** no public water supply wells within 2000-feet of Site 21. The site is underlain almost entirely by the "AA" hydrostratigraphic unit of the Purisima Fm. Small areas of PGWR are mapped in the northeast and southeast comers of **the** site. These probably represent outcrops of sandy units within the Purisima Fm. These sandy units, which appear to dip to the east-southeast, would not be intercepted by the excavation of a landfill on this site. Directly south of Site **21** is Arana Gulch. **The** creek in the gulch is mapped **as** a perennial stream up to an elevation **of** approximately 530-feet msl, which **seems** abnormally high for this area. If groundwater truly occurs at this elevation on Site 21, then high groundwater is likely to be encountered during excavation **on** parcel 101-121-25. <u>Risk Ranking: Low to moderate</u>

SITE 22:

There are no public water supply wells within 2000-feet of Site 22. This site is primarily underlain by the "AA" hydrostratigraphic unit of the Purisima Fm. Small portions of the site overlie alluvium along Branciforte and granite Creeks. And Santa Cruz Mudstone crops out along the western edge of the site. The Santa Cruz Mudstone should act as an effective barrier to downward groundwater flow in this area, but it is not clear if this unit underlies the site to the Branciforte watershed. Along Branciforte Creek the Purisima appears to be sitting directly on top of granitic basement rocks. Risk Rankine: Low

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SITE 23:

There are 4 public water supply wells within 2000-feet of Site 23. Three of these wells draw groundwater from the Santa Margarita and Lompico formations along Carbonera Creek. The fourth well appears to belong to a business and its construction is unknown, but appears it may draw groundwater from fractured granite. With the exception of the extreme northwest comer, Site 23 is entirely underlain by basal Purisima Fm, similar to Site 22. Groundwater flow in the Purisima beneath this site is cut off on the east and west by streams and downward percolation is inhibited by the Santa Cruz Mudstone. There may be a thin wedge of Santa Margarita Fm beneath the mudstone on the west side of the site. There doesn't appear to be any hydrologic connection between groundwater in the Purisima at this site and the wells immediately to the west. Stream flow in Redwood Creek immediately south from parcel 056-281-12 and west of parcels 101-221-01 and -02 is mapped as originating at an elevation of approximately 800-feet msl. Hydrologically this is an anomaly, suggesting some geologic structure may be causing the groundwater to occur at such a high elevation. The origin of Redwood Creek corresponds to a northwest-southeastoriented photolineament that appears on aerial photos and topographic maps. This feature may be a fault which is acting as a barrier to groundwater flow to the southeast. Regardless of **the** cause of the high groundwater, it could be problematic for landfill construction here. Dewatering of the groundwater would probably impact flow in Redwood Creek. Although a landfill is unlikely to pose a risk to local wells, there is a good possibility that stream flow to Redwood Creek would be impacted. Risk Ranking: High, recommend exclusion from further consideration

SITE 25:

There are 2 public water supply wells within 2000-feet of Site 25; however, these wells are hydrologically separated from the site by the deeply incised Mill Creek. PGWR areas are mapped along the southern stream courses and a 16-acrepatch along the east side of the site. Although not mapped PGWR, the outcrops of Santa Margarita probably play an important role in capturing storm water and transmitting it down to the underlying granites. The site is underlain by granitic rocks of the Ben Lomond Mountain and Santa Margarita Sandstone. Limestone is mined in the region and there is the possibility that some limestone could be buried under the Santa Margarita on the northern parcels. Groundwater flow in fractured aquifer systems, such as those found in granites and limestone are often unpredictable and because these fractures can be quite large, flow can be **very** rapid. Leakage, should it occur at a landfill here, shouldn't impact any public supply wells. However, leakage might cause a relatively rapid water quality impact in Mill or San Vicente Creeks. Risk Ranking: Moderate to High

SITE 29:

There are no public water supply wells within 2000-feet of Site 29. This site is completely underlain by the Santa Cruz Mudstone. The Santa Cruz Mudstone generally yields very little groundwater to wells. Two flowing streams, Cascade and White **Oaks** Creeks, *are* deeply incised into the topography at this site. There don't appear to be any groundwater related issues related to landfill construction at this location. <u>Risk Ranking: Low</u>

SITE 30:

There are no public water supply wells within 2000-feet of Site 30. This site is completely underlain by the Santa Cruz Mudstone with the exception of alluvium that occurs along the southeast border of the site. White House Creek cuts the site from east to west along the south third of the site. There don't appear to be any groundwater related issues related to landfill construction at this location. <u>Risk Ranking: Low</u>

GENERAL SITE HYDROLOGIC CONSIDERATIONS:

There are numerous hydrologic issues that should be considered when selecting a location for a landfill. Although modem landfills, those built since 1990, are unlikely to leak, additional precautions should be employed where feasible to provide additional levels of protection to the public and environment. Staff has identified some of these issues, which are listed in no particular order relative to their importance.

Topography: Sites with large topographic variation (i.e., those sites located in the mountains) tend to encounter problems with perched or high groundwater. Dewatering these areas may impact flow to local springs and **streams**. Preventing flow into the landfill from the adjacent bedrock requires additional engineering design and maintenance. Faulting is one mechanism causing groundwater to be perched **or** retained at elevations higher than expected. If faulting causes high groundwater at a particular site, the fault may need to be age-dated to verify it is not active or the landfill set back from this structure.

Rainfall: In general, areas of **less** rainfall are preferential to areas with higher rainfall. More rainfall requires more drainage maintenance and leachate control. Because leachate leakage is the main source of groundwater contamination, at least at pre-1990 landfills, the less leachate generated the less potential for leakage.

Shallow Groundwater: Landfills should be constructed in areas where they will not come into contact with groundwater. If site is proposed in an area of shallow groundwater, the highest anticipated groundwater level should be determined for that area prior to design and construction.

Groundwater Recharge Areas: Because 1) landfills employ large tracts of land and 2) groundwater is the primary source of potable water supply for this county, landfills should be sited outside the prime groundwater recharge areas for the county aquifers. Also, and where possible, it is preferable to construct a landfill on a non-aquifer geologic unit.

Public Water Supply Wells: Because groundwater is the primary source of potable water supply for this county, landfills should be sited outside the groundwater capture areas of public water supply wells (those wells serving small to large communities versus individual wells).

SAN	TA CRUZ COUNTY LAN	IDFILL SIT	ING ST	UDY AREAS					
НУР	ROLOGIC ANALYSIS S	UMMARY							
			AREA			EST	PUB.		
STUD	PARCEL NUMBER(S)	GEOL	WITHIN PGWR	AQUIFER UNIT(S)	NEAREST STREAM	ANNL	WELLS w/in 2000'	GW IMPACT SIGNIFIC.	SITE HYDROLOGIC ISSUES
ო	110-191-10	Tmp,Tmm, Tp,hcg,qal	%9	Alluvium	Pajaro R.,ephem stream	22-23"	None	Moderate	Potential GW recharge area for PV
4	110-181-06	Tp,Tps, Tbm,Qyf	11%	Alluvium, Purisima	Pajaro R.,2 ephem streams	22	None	Moderate	Potential GW recharge area for PV
6A	110-111-02,04	Tmp,Tmm, Tp,Tps	<1%	Purisima	Coward Crk,Hughes Crk	24-26	None	Low to Moderate	South half provides some GW recharge to PV
68	110-031-20,21, 110-111- 05,06	Tmp,Tmm, Tp,Tps	%0	Purisima	Cow Crk,I ruyhes Crk	24-26	None	Low to Moderate	South half provides some GW recharge to PV
7	106-441-01	Tmm,Tmp	%0	Mt. Madonna SS?	Green Valley Crk	30-34	None	Low	Outside S Cruz Co Aquifer influence
o	109-041-13	Qaf, Qof	28%	Aromas, Alluvium	Green Valley Crk	26-28	None	Exclude	GW recharge area to PV, Large area of PGWR
10	109-061-02,05,34, 109-101- 34	Qaf,Qof,Qtl ,QTc,Qal	%6	Aromas, Alluvium	Green Valley Crk	26-28	None	Exclude	GW recharge area to PV
11	052-011-09,11,30,40,41,72	Qae,Qaf, Qwf	%0	Aromas	Harkin Slough	22	None	Low to Moderate	Permeable soils/aquifer, but aquifer impacted by Ag and seawater intrusion
14	105-321-08, 105-121-39,40	Tp (C,D?)	3%	Purisima	Trout Gulch Crk	30	5	Moderate to High	On Tp but, not prime units, unknown impact to local wells
14A	040-281-04	Tp (C,D?)	8%	Purisima	Trout Gulch Crk	30	None	Moderate to High	On Tp but, not prime units, unknown impact to local wells
14C	105-321-08, 105-121-39,40, 040-281-04	Tp (A,B)	5%	Purisima	Soq. Crk, Mangles Gulch	30	сı	Moderate to High	On Tp but, not prime units, unknown impact to local wells
15	099-141-01, 104-021-04	Tp (A)	25%	Purisima	Soq. Crk, Grover Gulch	33-35	None	Low to High	Above "A" unit of Tp, and some PGWR, development restrictions important to protect groundwater
All im PGWF	pact significance ratings assur	ne leakage oc harge Area	curs at L	andfill					

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Item 78

Pacific Fishery Management Council 7700 NE Ambassador Place, Suite 200 Portland, Oregon 97220-1384

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Subject: Time Frame to Respond to Meetings and Issues

Gentlemen

The Santa Cruz County Fish & Game Advisory Commission is very interested in the Ocean Fishing Regulations. It follows then that this Commission is very interested in your meetings as they affect the Ocean Fishing Regulations in the Montrey Bay and Santa Cruz County as a whole.

However, our time frame for public comment is as follows:

- 1.) This Commission usually meets once a month, on the first Thursday of the month.
- 2.) An item of concern needs to be put on our meeting agenda to give the public proper notice
- 3.) After giving the approiate notice this commission is then able to take action

Your current method of notifying us usually does not allow the proper time frame for public notice. We would appreciate it very much *if* you would increase your time frame of notice in order for us to react.

Your prompt attention to this letter is appreciated.

Santa Cruz County Fish & Game Advisory Commission