

**CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**8800 Cal Center Drive  
Sacramento, California 95826

Sam Egigian, Chairman  
Michael Frost, Member  
Jesse Huff, Member

Wednesday, April 7, 1993  
10:00 a.m.  
meeting of the

## **POLICY, RESEARCH AND TECHNICAL ASSISTANCE COMMITTEE**

of the  
**CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**

8800 Cal Center Drive  
Sacramento, CA 95826

### AGENDA

Note: o Agenda items may be taken out of order.  
o If written comments are submitted, please provide 20 two-sided copies.

**Important Notice:** The Board intends that Committee Meetings will constitute the time and place where the major discussion and deliberation of a listed matter will be initiated. After consideration by the Committee, matters requiring Board action will be placed on an upcoming Board Meeting Agenda. Discussion of matters on Board Meeting Agendas may be limited if the matters are placed on the Board's Consent Agenda by the Committee. Persons interested in commenting on an item being considered by a Board Committee or the full Board are advised to make comments at the Committee meeting where the matter is considered.

1. CONSIDERATION OF AUGMENTATION OF THE "ASH QUANTIFICATION AND CHARACTERIZATION STUDY" (IWMC081) CONTRACT BETWEEN THE CIWMB AND RW BECK (not available until closer to meeting date)
2. CONSIDERATION OF ADOPTION OF THE STAFF RECOMMENDATIONS FOR THE FY 92/93 TIRE RECYCLING PROGRAM GRANT AWARDS 1
3. DISCUSSION OF THE DRAFT OUTLINE FOR THE INTEGRATED WASTE MANAGEMENT DISASTER PLAN 17

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4. PRESENTATION OF STAFF REPORT, "THE ECONOMICS OF OUT-OF-STATE WASTE DISPOSAL" 29
5. REVIEW OF THE REPORT, "SCIENCE AND TECHNOLOGY RESEARCH PRIORITIES FOR WASTE MANAGEMENT IN CALIFORNIA" BY THE CALIFORNIA COUNCIL ON SCIENCE AND TECHNOLOGY, IN RELATION TO CURRENT BOARD RESEARCH AND DEVELOPMENT ACTIVITIES 56
6. OPEN DISCUSSION
7. ADJOURNMENT

**Notice:** The Committee may hold a closed session to discuss the appointment or employment of public employees and litigation under authority of Government Code Sections 11126 (a) and (q), respectively.

For further information contact:  
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Sacramento, CA 95826

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CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

POLICY, RESEARCH AND TECHNICAL ASSISTANCE COMMITTEE

April 7, 1993

AGENDA ITEM 1

**ITEM:** Consideration of augmentation of the "Ash quantification and characterization study" (IWMC081)

**BACKGROUND:**

During the contract concept adoption process \$40,000 was allocated from the tire fund (FY 92-93) for the augmentation of the ash study. The original contract (IWMC081) was previously awarded to the lowest qualified bidder (RW BECK for \$321,940 (FY 90-91)).

As a result of the interagency agreement with CARB (FY 91-92) to demonstrate the combustion of tire derived fuel, the need for sampling feedstocks and ashes was identified. The augmentation would fund the sampling and analysis of the ashes produced during source tests conducted by CARB and ashes from other tire derived fuel combustors. Some fuels testing will also be performed. All of this work is new and extends the original contract scope to sample additional facilities using the original protocols and procedures. Because the work will take place after the 6/30/93 termination date of the original contract, staff also requests that the term of the contract be extended to 6/30/94. The work under the existing contract is nearly finished and the request for extension is not due to a delay in existing work.

**Recommendation:**

Staff recommends that the committee approve the request for a time extension and to augment the existing contract (IWMC081) with RW BECK for \$40,000 from the California Tire Recycling Management Fund.

**Estimated Cost:**

\$40,000 - California Tire Recycling Management Fund

**Time Factor:**

Augmentation needs to be complete before the June 30, 1993 termination date of the existing contract and before the source testing conducted by CARB

**APPROVED:**

Robert Z. Coagleton 5/31  
Senior Supervisor / Date

Sam Smith  
Deputy Director

3/31/93  
Date

Mantha C. Gilbert 3/31  
Branch Manager / Date

**CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**  
**POLICY, RESEARCH AND TECHNICAL ASSISTANCE COMMITTEE**  
**April 7, 1993**

**AGENDA ITEM 2**

**ITEM:** Consideration of the staff recommendations for the FY 92/93  
Tire Recycling Program Grant Awards

**BACKGROUND:**

Assembly Bill 1843 (PRC 42860 et. seq.), the Tire Recycling Act, directs the Board to award grants to businesses, enterprises, and public entities involved in tire recycling activities. Board staff developed a tire fund policy for FY 92/93 which recommended allocations of the funds available.

On December 16, 1992, the Board adopted Resolution # 92-209 which allocated \$1,000,000 to be used for Research and Business Development Grants in FY 92/93. Eligible projects include:

Research and Development

Up to \$100,000 for innovative research projects, excluding combustion, rubber in asphalt concrete and pyrolysis projects. Eligible research projects this FY are:

1. Market development and demonstration projects
2. Process and equipment improvements
3. New waste tire uses

Business Development and Feasibility  
Demonstration

Up to \$50,000 for research, technical validation, market and business plans, and economic analysis. Eligible projects this FY are:

1. Pyrolysis products market development
2. Civil engineering uses in rural communities
3. New uses
  - a. Business development
  - b. Equipment and process improvements

Ineligible projects include:

1. Use of tire-derived fuels at cement manufacturing facilities, or other solid waste combustion facilities.
2. Use of waste tire rubber in asphalt concrete.
3. Process improvement, equipment procurement, or business development for pyrolysis projects.

A notice of funds available (NOFA) was distributed on December 28, 1992, to all persons on the Board's main mailing list (those who receive Committee and Board agenda notices) and the tire mailing list through The Department of General Service, Office of Support Services. Approximately 2600 notices were sent using this mass mailing service. Notices were also sent in response to many individual phone inquiries.

In response to the NOFA's and individual phone inquiries received, over 700 application packages were distributed between January 1, 1993 and February 26, 1993. Ninety-nine (99) applications were received between January 25, 1993 and the final filing date of 3:00 pm, March 2, 1993.

Prior to evaluation, the proposals were reviewed for completeness and for eligibility. Eight (8) proposals were found to be incomplete (based upon the list of required attachments identified in the application package) and were disqualified. Five (5) proposals were found to be ineligible (based upon the eligibility criteria listed in the application package) and were disqualified. The remaining 86 proposals were evaluated based upon the evaluation criteria from the statute and provided in the application package.

Two review groups (each consisting of a technical panel and a financial panel) were formed to evaluate the grant proposals. Each group evaluated approximately one-half of the proposals. Proposals were ranked highest to lowest and grouped into three lists: A. recommended for funding; B. alternates for funding; and C. not recommended for funding.

**ANALYSIS:**

List A consists of the highest ranked proposals recommended for funding based upon staff evaluation. List B consists of proposals ranked lower than List A proposals and are recommended as alternates for funding in priority order should standard agreements not be completed for any List A proposals. Staff recommends that some proposals in Lists A and B only receive partial funding of what was requested. List C consists of proposals which staff does not recommend for funding this fiscal year. List D consists of proposals that were disqualified.

Proposals received and reviewed represented both research and business development. The projects included on Lists A and B are diverse: including pure and applied research, business development, local government, rubber separation and processing methods and product development.

Several proposals ranked in Lists A and B were submitted by either local governments or by state agencies. Due to the fact that approximately \$500,000 (earmarked for tire-related projects) for the Recycling Market Development Zone (RMDZ) Loan Program will not be awarded this fiscal year, staff recommend that the Board pursue contracts with these applicants on List A:

City of Long Beach, Used Tire Decking System, \$81,400

University of California, Davis, Soil Contamination Absorption, \$53,664

University of California, Davis, Survey & Economic Analysis of State Policies, \$55,858

Tahoe Prevention Network/CCC, Youth Club Building Construction

In addition, staff recommends that the Board enter into contracts with the following applicants on List B if funding becomes available for alternate proposals. Funding, whether by grant or contract will remain in order as shown on List B.

City of Lancaster, Scrap Tire Compost Bins, \$96,120

JAITIRE/City of Lancaster, Soccer Field Soil Development, \$50,000

By entering into the contracts, several other projects from List B would be fundable. Also, as of June 30, 1993, the Board loses its spending authority of the remaining tire funds transferred to the RMDZ Loan Program. The contracts would use most of this remainder this fiscal year.

Staff recommend that any tire funds remaining in the RMDZ Loan Program (after funding loans and the proposed contracts) be used to support the Local Government Innovations Program.

**STAFF COMMENTS:**

Board staff recommend the Committee take the following actions:

1. Approve the staff application evaluation process
2. Approve the attached resolution awarding grant funding to proposals on List A and alternates on List B as funding is available
3. Submit this item to the full Board for approval on April 28, 1993

**ATTACHMENTS:**

1. Resolution 93-\_\_\_\_, Adoption of the Tire Recycling Program Grant Awards FY 92/93.
2. Lists A, B, C, and D

Prepared by: Michael Contreras *MC* Phone 255-2318

Reviewed by: *RE* Ranny Eckstrom, Rob Boughton *REB* Phone 255-2656

Reviewed by: Martha Gildart *MG* Phone 255-2414

Legal Review: *[Signature]* *R 2:30* Date/Time 3-25-93

California Integrated Waste Management Board  
Resolution 93-          
April 28, 1993

Adoption of the  
Tire Recycling Program  
Grant Awards FY 92/93

WHEREAS, the Tire Recycling Act (Public Resources Code [PRC] 42800 et. seq.) requires the reduction of the landfill disposal and stockpiling of used whole tires by 25 percent within four years of full implementation of a statewide tire recycling program and to recycle and reclaim used tires and used tire components to the greatest extent possible in order to recover valuable natural resources; and

WHEREAS, PRC Section 42871(a) requires the California Integrated Waste Management Board (hereinafter referred to as the "Board") to initiate a tire recycling program which promotes and develops alternatives to the landfill disposal and stockpiling of used whole tires; and

WHEREAS, the tire recycling program includes the awarding of grants to businesses, other enterprises, and public entities involved in research aimed at developing technologies or improving current activities and applications that result in reduced landfill disposal of used whole tires; and

WHEREAS, the Board on December 16, 1992 adopted Resolution 92-209 which allocated \$1,000,000 to be used for Research and Business Development Grants in FY 92/93; and

WHEREAS, Resolution 92-209 further stated that due to limited funds available, the Board limited grant funding to the following eligible projects:

Research and Development

Up to \$100,000 for innovative research projects, excluding combustion, rubber in asphalt concrete and pyrolysis projects. Eligible research projects this FY are:

1. Market development and demonstration projects
2. Process and equipment improvements
3. New waste tire uses

Business Development and Feasibility

Demonstration

Up to \$50,000 for research, technical validation, market and business plans, and economic analysis. Eligible projects this FY are:

1. Pyrolysis products market development
2. Civil engineering uses in rural communities
3. New uses
  - a. Business development
  - b. Equipment and process improvements

**WHEREAS**, approximately 2600 Notice Of Funds Available (NOFA) were mailed; and

**WHEREAS**, over 700 application packages were distributed; and

**WHEREAS**, a total of 99 grant applications were received before the final filing date of March 2, 1993; and

**WHEREAS**, PRC Sections 42874 and 42875 established evaluation factors for grant proposals and the Grant Program 1992-93 Information and Application assigned the maximum number of points for each factor; and

**WHEREAS**, the Application Instruction Clarification dated February 18, 1993, stated that project proposals must score a minimum of 70 points to be eligible to receive grant funding and that funding will be awarded in order of scores; and

**WHEREAS**, Board staff have reviewed and evaluated all proposals based upon the evaluation factors aforementioned and categorized them into 4 lists: List A - recommended for funding; List B - alternates for funding; List C - not recommended for funding; and List D - disqualified; and

**WHEREAS**, the Recycling Market Development Zone (RMDZ) Loan Program has \$500,000 (tire funds) unencumbered for tire projects this fiscal year; and

**WHEREAS**, the Local Government Innovations Program was allocated \$473,000 by resolution 92-209 for tire-related projects; and

**WHEREAS**, on April 7, 1993, the Policy, Research and Technical Assistance Committee considered this issue.

**NOW, THEREFORE, BE IT RESOLVED** that the Board hereby awards grants to the attached List A from the California Tire Recycling Management Fund for FY 92/93; and

**BE IT FURTHER RESOLVED** that the Board directs staff to pursue standard agreements with the grant applicants on List A; and

**BE IT FURTHER RESOLVED** that the Board directs staff to pursue contracts with those applicants below using unencumbered funds from the RMDZ Loan Program:

City of Long Beach, Used Tire Decking System, \$81,400

University of California, Davis, Soil Contamination Absorption, \$53,664

University of California, Davis, Survey & Economic Analysis of State Policies, \$55,858

Tahoe Prevention Network/CCC, Youth Club Building Construction, \$60,983; and

**BE IT FURTHER RESOLVED** that if a standard agreement or contract is not completed for any grant applicant on List A, then the Board directs staff to substitute an alternate grant applicant from List B in order until the \$1,000,000 grant funding is exhausted and to enter into contracts with the following applicants on List B should their order on List B become eligible for funding:

City of Lancaster, Scrap Tire Compost Bins, \$96,120

JAITIRE/City of Lancaster, Soccer Field Soil Development, \$50,000; and

**BE IT FURTHER RESOLVED** that the remaining unencumbered funds from the RMDZ Loan Program be used to augment the Local Government Innovations Program this fiscal year.

#### **Certification**

The undersigned Executive Director of the California Integrated Waste Management Board does hereby certify that the foregoing is a full, true and correct copy of a resolution duly and regularly adopted at a meeting of the California Integrated Waste Management Board held on April 28, 1993.

Dated:

Ralph E. Chandler  
Executive Director

## Tire Recycling Program Grant

Date 03/26/93

## List A: Staff Recommendations for Project Funding in Priority Order

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
City of Long Beach Used Tire Decking System	96	19	\$81,400	\$81,400
Champion Recycling Recycled Carbon Black Market Development	36	36	\$100,000	\$50,000
Burke Industries Residential Roofing Shakes	14	43	\$94,025	\$94,025
US Rubber Recycling Shop Waste Recycling/Manufacturing	60	36	\$50,000	\$50,000
BAS Recycling Inc Playground Safety Mats	27	37	\$100,000	\$100,000
Marine Forests Society Artificial Marine Habitat from Rec Tires	84	30	\$100,000	\$100,000
Univ of Calif, Davis Soil Contamination Absorption	82	57	\$53,664	\$53,664
eco-Tech International Ozone Disintegration of Tires	20	7	\$100,000	\$60,000
Calif Recycling Co Noise Barrier Sound Absorbing	32	19	\$50,000	\$50,000
Univ of Calif, Davis Survey & Econ Analysis of State Policies	81	57	\$55,858	\$55,858
The Tireless Effort Delineator Base Development	35	21	\$88,000	\$60,000
Tahoe Prevention Network Youthclub Building Construction	72	9	\$87,203	\$60,983
Lydia M. Frenzel Ultra-High Pressure Water Jetting	43	3	\$49,445	\$49,445
PACE Playground Safety Covering	92	38	\$79,815	\$30,000
Mortimer Tree Service Tire Barriers for Tree Roots	9	56	\$48,000	\$36,000
Total Projects Selected	15			
Total Funding Requested & Recommended			\$1,137,410	\$931,375
* Possible Contract				

## Tire Recycling Program Grant

Date 03/25/93

## List B: Staff Recommendations for Alternate Projects in Priority Order

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
City of Lancaster Scrap Tire Compost Bins	30	19	\$96,120	\$96,120
SRI Electromag Radiation Absorbers	64	41	\$99,781	\$99,781
Enviro-Med Terra Flex Mat Test Installation	52	37	\$50,000	\$20,000
AET Systems Subsurface Effluent Dispersion System	80	43	\$100,000	\$50,000
Manhole Adjusting, Inc Tire Recycling Plant Equipment	97	19	\$100,000	\$50,000
Hap Fisher Assoc Utility Pole Crossarm Filler	8	43	\$100,000	\$50,000
Geremia, Pasztor, Sadler Self-compacting Construction Material	86	34	\$99,834	\$20,000
Carsonite International Noise Barrier Prototype	3	1	\$49,250	\$49,250
Action Engineering Rail Support Retainers	34	19	\$100,000	\$60,000
T.I.R.E. Tire Derived Product Improvements	45	19	\$100,000	\$50,000
JaiTire Industries Soccer Field Soil Development	51	0	\$50,000	\$50,000
Jin Cheng Corporation Renurub Catalytic Scrap Rubber Recycling	24	1	\$50,000	\$30,000
Dave's Tire & Wheel Use of Cut Waste Tires for Backfill	41	34	\$99,700	\$30,000
PRK International Carbon Black Market Research	47	30	\$50,000	\$30,000
Reed Corporation Oil Recovery Product Development	89	1	\$100,000	\$33,600
Total Projects Selected	15			
Total Funding Requested & Recommended			\$1,244,685	\$718,750

\* Possible Contract

## Tire Recycling Program Grant

Date 03/25/93

## List C: Staff Recommendations Not to Fund in FY 1992-93

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
Katherine A. Patrick Operation Shred	2	1	\$70,800	\$0
Gregory Amonson Protective Barricade	5	1	\$94,000	\$0
B&B Tire Sales Construct Storage Bins	6	36	\$288,000	\$0
McMillan Unlimited Inc. Tirecade	7	71	\$150,000	\$0
Paul E. Fisher Photo Decomposition	10	43	\$80,700	\$0
Paul E. Fisher Mechanical Fabrication	11	43	\$100,000	\$0
Earth Care Technologies Dem. of Pyrolysis Technology	15	19	\$50,000	\$0
<del>T.I.R.E. Farms</del> T.I.R.E. Farms	16	49	\$90,000	\$0
Cooperative Action Network Cooperative Project to Dispose of Tires	18	1	\$50,000	\$0
Neo-Geo NEO-GEO Tire Recycling Program	21	40	\$50,000	\$0
Retread Barns Retread Barns	22	29	\$98,385	\$0
Waste Tire Grinder Co. Inc Waste Tire Rubber Reduction Tech & Econ	26	0	\$100,000	\$0
The Treadmill Tire Tiles	28	0	\$100,000	\$0
Research Technologies Inc. Tire Encapsulation Procedure /Device	29	0	\$100,000	\$0
Truthful Products Co. Inc. Recycling Micro Powder Rubber from Tires	31	19	\$164,540	\$0
Mercer Rubber Inc System for Removing Rubber from Tires	33	19	\$100,000	\$0
JAS Designs Design & Prototyping of Rec Equip	37	7	\$22,820	\$0

Company Name Project Title	Project No	County	Funds Requested	Funds Recommend
Coalition Technologies Ltd. Sulfonation Research	39	0	\$100,000	\$0
Patrick J. Meyers Theory to Practice Recycling	40	19	\$76,380	\$0
Pacific Surplus Pressure Fluidizing Machine	42	44	\$18,500	\$0
Richard K. Kilgore Tire Packers Consolidated	44	19	\$100,000	\$0
CalCoast Analytical, ITL Recycled Used Tires for Paint Industry	46	1	\$50,000	\$0
EPIC Thermo Plastics	48	1	\$100,000	\$0
Moore Enviro-Chemica FSR to Reduce Tire Waste	49	42	\$27,860	\$0
Neil Lee Export Waste Tires	50	19	\$100,000	\$0
BUD Campbell Engineering River Levee Product Demonstration	54	36	\$100,000	\$0
Fresno Tire Disposal San Joaquin Valley Tire Recycling Project	55	10	\$50,000	\$0
CONDATA, Inc Market Develop Waste Tire Pyrolytic Char	56	43	\$50,000	\$0
Safe-Hit Corp Soundwall	57	1	\$50,000	\$0
B&S Transport, Inc. Highway Barriers/Dividers	58	30	\$100,000	\$0
Polytechnica New Composite Struc Materials	59	5	\$100,000	\$0
Western Research Association Literature Research	61	36	\$100,000	\$0
RK Equipment Company WDB Demonstration Wind Diversion	62	19	\$100,000	\$0
Koretoff Industries Produce and Market Matts	63	10	\$49,693	\$0
U.S. 1st Research & Development Irrigation Drainage Demonstration	65	35	\$50,000	\$0
H. Adam Bösschieter Crumb Rubber Binder Investigation	66	10	\$21,350	\$0

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
Recycle 2000 Compact 3000 Tire Granulation Machine	67	19	\$100,000	\$0
Eurectec SVIT Crumb Rubber Press	68	19	\$100,000	\$0
Robert F. Gattinella New Age Coating for California	69	33	\$50,000	\$0
Harry Niedecken Recycled Tire Material for Wall Construc	70	1	\$99,750	\$0
Henry L. Smith Calif Tire Homes Market Develop Researc	71	37	\$100,000	\$0
Process Fuels, Inc. The Tyrecycle Process	73	0	\$100,000	\$0
Arvin Aurora FSR for Punch-out Products from Scrap Ti	75	56	\$72,557	\$0
Paul Stimson Tires	76	19	\$100,000	\$0
Larry Tarantino Slope Stabilization Net	77	30	\$100,000	\$0
Larry Tarantino Retaining Wall Development	78	30	\$100,000	\$0
Akton Associates, Inc Point of Collection tire shredder	83	7	\$30,000	\$0
Wong and Associates Modular Waste Waste Tire Panels	85	39	\$100,000	\$0
R & B Enterprises Prototype Building	88	21	\$100,000	\$0
Manhole Adjusting Contractors Develop Markets for Recycling Tires	90	19	\$50,000	\$0
Charles R. Appleby Tire Sidewalls for Slope Stabilization	91	7	\$54,640	\$0
Richard L. Fine Duradrain R Flexible Landscape Drainage	93	31	\$55,290	\$0
Super Vision International Tireplus Recycling	94	19	\$150,000	\$0
Astra Enterprises, Inc Comprehensive System for Discarded Tires	95	7	\$100,000	\$0
B&S Transport Waste Tire Management Program	98	30	\$100,000	\$0

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
Auror Rubber Corp Manufacturing Mat Floorings	99	56	\$50,000	\$0
Total Projects Selected Total Funding Requested & Recommended	56		\$4,765,265	\$0

## Tire Recycling Program Grant

Date 03/25/93

## List D: Projects Determined to be Ineligible

Company Name Project Title	Project No	County	Funds Requested	Funds Recommended
Shannon Steffey Rubber Tire Recycler	1	1	\$150,000	\$0
Baeyco Construction Waste Tire Research	4	19	\$96,500	\$0
Albert J. Boone Posts and Guard Rails	12	0	\$50,000	\$0
Kenneth May Emergency Brake Systems	13	1	\$50,000	\$0
San Diego County Solid Waste Road Chip Seal	17	37	\$96,704	\$0
Michael Reynolds Solar Survival Architecture	19	1	\$100,000	\$0
Jin Cheng Corp Skygas	23	1	\$100,000	\$0
Larry Emmons Wheelstops	25	19	\$100,000	\$0
Henry Company Asphalt Roof Coating	38	19	\$50,000	\$0
Univ of MO-Rolla Reclaimed Rubber Coatings	53	0	\$75,000	\$0
MTCI Energy Recovery from Waste Tires	74	19	\$99,918	\$0
Pan American Resources Inc Destructive Distillation	79	1	\$11,350	\$0
Honey Lake Industries Tire Recycling Project	87	4	\$150,000	\$0
Total Projects Selected	13			
Total Funding Requested & Recommended			\$1,129,472	\$0

County Codes and Names

<u>COUNTYCODE</u>	<u>COUNTYNAME</u>
1	ALAMEDA
2	ALPINE
3	AMADOR
4	BUTTE
5	CALAVERAS
6	COLUSA
7	CONTRA COSTA
8	DEL NORTE
9	EL DORADO
10	FRESNO
11	GLENN
12	HUMBOLDT
13	IMPERIAL
14	INYO
15	KERN
16	KINGS
17	LAKE
18	LASSEN
19	LOS ANGELES
20	MADERA
21	MARIN
22	MARIPOSA
23	MENDOCINO
24	MERCED
25	MODOC
26	MONO
27	MONTEREY
28	NAPA
29	NEVADA
30	ORANGE
31	PLACER
32	PLUMAS
33	RIVERSIDE
34	SACRAMENTO
35	SAN BENITO
36	SAN BERNARDINO
37	SAN DIEGO
38	SAN FRANCISCO
39	SAN JOAQUIN
40	SAN LUIS OBISPO
41	SAN MATEO
42	SANTA BARBARA
43	SANTA CLARA
44	SANTA CRUZ
45	SHASTA
46	SIERRA
47	SISKIYOU
48	SOLANO
49	SONOMA
50	STANISLAUS
51	SUTTER
52	TEHAMA
53	TRINITY
54	TULARE
55	TUOLUMNE
56	VENTURA
57	YOLO
58	VIRIA

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

POLICY, RESEARCH AND TECHNICAL ASSISTANCE COMMITTEE  
APRIL 7, 1993

AGENDA ITEM 3

**ITEM:** Discussion of the Draft Outline for the Integrated Waste Management Disaster Plan.

**BACKGROUND:**

Assembly Bill 2920 (Lee, 1992) requires the Board, in cooperation with the Governor's Office of Emergency Services (OES), to prepare an Integrated Waste Management Disaster Plan (Plan). The Plan must provide for the handling, storage, processing, transportation, diversion from disposal sites, or disposal where absolutely necessary, of solid waste, resulting from a state of emergency or local emergency. Staff of the Special Studies Section prepared a background report entitled Solid Waste Disaster Report: A Summary of Disasters and Solid Waste Management Actions, which included recommendations for the preparation of the Plan. The report was presented to the Policy, Research and Technical Assistance (PR&TA) Committee at its February 3, 1993 meeting. Both the Committee and the Board accepted the report and staff was directed to prepare a draft Plan outline for consideration at the Committee's April 7, 1993 meeting.

According to the procedures outlined in the Board's Style Manual, ~~Legislatively-mandated and Board-requested reports~~ are to be written by a designated report writer working under the guidance of a report team. A report team has been established for the Plan and includes representation from the following areas: PR&TA Committee Member Advisors, Policy & Evaluation Office, Legal Office, Legislation Office, Public Affairs & Education Office, Research & Technology Development Division, Permitting & Compliance Division, Planning & Assistance Division, and Administration & Finance Division. In addition, OES has designated staff that will provide oversight during the development of the Plan.

Two meetings of the report team have been held in which the contents of the Plan were scoped. Input was also provided by OES staff. The work plan and accompanying draft Plan outline which resulted from those efforts is attached.

**ANALYSIS:**

In its presentation to the Committee on February 3, 1993, Board staff identified four problem areas concerning solid waste management during emergencies. The four problem areas are identified below:

- o Need for closer coordination between the Board and federal, state and local relief officials regarding disaster preparedness.
- o Need for establishing procedures to allow for the emergency operation of solid waste facilities to meet the needs of affected jurisdictions during an emergency.
- o Need for state, local and regional plans or guidelines for cleaning up disaster debris which places emphasis on diverting materials from disposal.
- o Need for information gathering at the local level to ensure that accurate data is recorded for diversion/disposal tracking and for substantiation of reimbursable costs associated with disaster cleanup.

To address these problem areas the report writer and team have developed a set of four specific objectives for the Plan which are identified in the draft outline. Those objectives and the means by which they will be achieved are discussed below:

1. Specify Procedures for the Board to Follow When Responding to Local, State or Federal Emergencies.

The draft outline includes a description of the state's emergency management system and describes the roles and responsibilities of the agencies which participate in solid waste management activities during an emergency. In addition, the Board staff's command and control structure is detailed along with the responsibilities of the response team members. As an interim measure, Board staff will follow the approach described in the outline until the Plan is finalized or another procedure is adopted.

2. Identify Mechanisms to Allow the Board and Local Government to Provide for the Emergency Operation of Solid Waste Facilities Outside of Their Permit Conditions During Local, State, or Federal Emergencies.

AB 2920 allows the Board to adopt regulations, including emergency regulations, necessary to carry out the Plan. Staff recommends that permanent emergency regulations be promulgated concurrent with the preparation of the Plan. The purpose of the regulations will be to preserve public health and safety, and the general welfare during an emergency by allowing for the waiver of specified standards. The regulations should include provisions for relaxed restrictions in the following areas: origin of waste, daily

permitted tonnages, transfer of solid wastes, allowance to accept various types of nonhazardous wastes, and hours of facility operation.

The drafting of regulations is considered to be an activity which is separate from the preparation of the Integrated Waste Management Disaster Plan. Hence, the framework for the regulations is not scoped in the outline nor are other considerations addressed, such as the need to comply with the California Environmental Quality Act. Staffing for this activity will be considered separately by the Executive Office.

3. Provide Information Which Will Help Local Government Prepare for a Disaster and Outline an Approach by Which the Board can Provide Technical Support to Local Government to Assist Them in Their Efforts to Recover and Reuse Disaster Debris Following a Disaster.

The draft outline details information concerning the handling, disposal, storage, diversion and ultimate disposal, where necessary, of solid waste following a disaster. Particular attention is given to those activities which will encourage recovery and reuse of disaster debris. ~~This information can be used by local government to~~ facilitate their own emergency response planning efforts.

The draft outline also specifies that Diversion Assistance Branch staff will participate on the Board's emergency response team. Diversion Assistance Branch staff will work directly with local officials and others in the affected jurisdiction to facilitate diversion and resource recovery activities. The Branch staff will also participate, as necessary, in activities coordinated through the OES Emergency Operations Center or Disaster Field Office.

4. Identify Record Keeping Guidelines for Local Government to Ensure That Accurate Record Are Kept Concerning the Handling, Transportation, Diversion, and Disposal of Solid Waste Following a Disaster.

Most of the disaster-related clean up costs which are incurred by local government during an emergency disaster are reimbursable by OES or the federal government. However, full reimbursement of eligible expenditures depends on adequate record keeping. Information concerning the types and quantities of waste disposed may be also be needed to substantiate diversion/disposal claims, and to assess the effect of disaster debris on landfill capacity. The Plan will include sections which discuss these issues and will

offer guidance to local government as to what record keeping measures are necessary following a disaster.

As proposed, the four objectives would govern the development of the Plan mandated by AB 2920.

**STAFF COMMENTS:**

Board staff have developed three options for the committee to consider in regard to the submitted report:

1. Accept the draft Plan outline and place the approval of the outline on the Board consent calendar for the April Board meeting. Direct the report writer and the report team to begin drafting the Plan in accordance with the procedures detailed in the Style Manual.
2. Accept the draft Plan outline and direct the report writer to prepare an agenda item on the outline for consideration by the full Board.
3. Direct the report writer to make specified changes to the draft Plan outline and bring the Report back to Committee for further consideration at its May meeting.

Staff recommends that the Committee select option 1.

**ATTACHMENTS:**

1. Integrated Waste Management Disaster Plan work plan and outline.

Prepared by: Roger Formanek RAF Phone: 255-2425

Reviewed by: Tom Unsell SA for HTU DmDerry Phone: 255-2350

Legal Review: R Date/Time: 2/13/93

## INTEGRATED WASTE MANAGEMENT DISASTER PLAN

## WORK PLAN

**BACKGROUND:**

In response to the many disasters which have afflicted the state in recent years, the Board directed staff of the Special Studies Section to prepare a report that evaluates and summarizes state and local solid waste management handling procedures during disaster events. Concurrently, Assembly Bill 2920 (Lee, 1992) passed into law requiring the Board, in cooperation with the Governor's Office of Emergency Services (OES), to prepare an Integrated Waste Management Disaster Plan (Plan). The Plan must provide for the handling, storage, processing, transportation, diversion from disposal sites, or disposal where absolutely necessary, of solid waste, resulting from state of emergency or local emergencies as defined. The law allows the Board to adopt regulations, including emergency regulations, necessary to carry out the Plan.

Subsequently, in the report entitled Solid Waste Disaster Report: A Summary of Disasters and Solid Waste Management Actions, Board staff reviewed state and local responses to recent disasters and made recommendations for the implementation of AB 2920. ~~The disaster events which were analyzed in the report include the~~ Loma Prieta Earthquake, Humboldt Earthquake, Oakland Hills Fire, L.A. Civil Unrest, Big Bear/Landers Earthquake, and Calaveras/Shasta County Fires. The report was presented to the Policy, Research and Technical Assistance Committee at its February 3, 1993 meeting. Both the Committee and the Board accepted the report and staff was directed to prepare a draft Plan outline for consideration by the Committee.

This work plan and the proposed outline contained herein are intended to provide sufficient information to scope the contents of the Plan and to guide the Plan preparation. The work plan and the outline will be presented to the Policy, Research and Technical Assistance Committee at its April 7, 1993 meeting.

**DISASTER PLAN WRITING PROCEDURE:**

The procedures for preparing the Plan are detailed in the Board's Style Manual. The Style Manual specifies that Legislatively-mandated and Board-requested documents are to be prepared by a designated report writer working under the guidance of a report team. The report writer leads the report team as its coordinator and is responsible for setting meeting dates, writing the work plan, and coordinating with others as the report makes its way through the writing and editing chain. Roger Formanek has been

designated as the writer to date. The report team is as follows:

Mercy Caputi (PE)	Phil Guadanino (AF)
Jeff Danzinger (BD)	Liza Smith (PAE)
Steve DeMello (PA)	Tom Unsell (RTD)
Michelle Fadelli (LEG)	Bernie Vlach (PC)
Donna Fox (LEGAL)	

The preparation of the Plan will be done with the oversight of Tom Fantes and Paul Jacks of OES.

**SCHEDULE:**

The enacting legislation does not specify a date by which the Plan must be prepared. The work plan and the draft Plan outline will be presented to the Policy, Research and Technical Assistance Committee at its April 7, 1993 meeting. Following Committee and Board approval, staff will proceed with the drafting of the Plan. A conceptual schedule is attached.

**COST:**

The Plan will be prepared by Board staff in cooperation with OES staff. The Board will need to dedicate one staff person full-time for approximately ten months to act as report writer, in addition to the part-time support of the report team members. Printing and distribution costs will be borne by the Board.

The Plan is not expected to impose costs on local government.

# INTEGRATED WASTE MANAGEMENT DISASTER PLAN

## DRAFT OUTLINE

### I. Introduction.

#### A. Purpose of Integrated Waste Management Disaster Plan (Plan).

1. Overview of Board.
2. Disaster plan required by AB 2920.
3. Who will use plan.
4. Applicability; state of emergencies and local emergencies as defined in Emergency Services Act.
5. Prepared in cooperation with OES and local government.
6. Relationship of Plan to State Emergency Plan.

#### B. Plan Organization.

1. Description of Plan format and contents.

### II. Discussion of Disaster Events.

#### A. Types of Disaster Events.

#### B. Overview of Recent Disasters (Loma Prieta EQ, Oakland Hills Fire, Humboldt EQ, Los Angeles Riots, Yucca Valley Desert EQ, Shasta and Calaveras County Fires, Southern California Flooding).

#### C. Priority Solid Waste Management Concerns Identified In Analysis of Recent Disasters.

1. Need for pre-disaster planning.
2. Need for interagency coordination.
3. Need to establish procedures to allow for the emergency operation of solid waste facilities.
4. Need for accurate record keeping.

### III. Plan Objectives.

- A. Specify Procedures for Board to Follow When Responding to Local, State or Federal Emergencies.
- B. Identify Mechanisms to Allow the Board and Local Government to Provide for the Emergency Operation of Solid Waste Facilities Outside of Their Permit Conditions During Local, State, or Federal Emergencies.
- C. Provide Information Which Will Help Local Government Prepare for a Disaster and Outline an Approach by Which the Board can Provide Technical Support to Local Government to Assist Them in Their Efforts to Recover and Reuse Disaster Debris Following a Disaster.
- D. Identify Record Keeping Guidelines for Local Government to Follow to Ensure That Accurate Record Are Kept Concerning the Handling, Transportation, Diversion, and Disposal of Solid Waste Following a Disaster. (This information is important to substantiate reimbursable disaster-related costs, to verify diversion/disposal claims, and to assess the effect of disaster debris on landfill capacity.)

### IV. Emergency Management Organization.

- A. Mutual Aid System.
- B. Roles and Responsibilities.
  - 1. Governor's Office
    - a. Office of Emergency Services.
  - 2. Cal/EPA.
    - a. IWMB.
    - b. Department of Toxic Substances Control.
    - c. State Water Resources Control Board.
  - 3. Local Jurisdictions.
    - a. LEA.
    - b. City Councils/County Board of Supervisors.

4. Other Agencies.

- a. Federal Emergency Management Agency.
- b. State Office of Emergency Services.

V. IWMB Command and Control Structure.

A. Emergency Response Team.

1. Assistant Director or designee, Public Affairs and Education Office (PAE).
2. Compliance Branch Manager or designee, Permitting and Compliance Division (PC).
3. Diversion Assistance Branch Manager or designee, Planning and Assistance Division (PA).
4. Health and Safety Officer or designee, Administration and Finance Division (AF).

B. Roles and Responsibilities of Team Members.

1. PAE Assistant Director or designee.

- a. Primary point of contact for the Board following a disaster event.
- b. Responsibilities are non-technical.
- c. Duties include: notifying other team members at the time of a disaster and coordinating initial response activities; information gathering and tracking with respect to Board's response activities; responding to information requests from the public, press or other agencies; and preparing necessary informational documents.

2. PC Compliance Branch Manager or designee.

- a. Technical point of contact for permitting and compliance activities.
- b. Interfaces with federal, state and local government emergency response staff. Provides guidance and assistance to LEAs, and the regulated community.
- c. Participates in activities coordinated through the OES Emergency Operations Center or Disaster Field Office.

3. PA Diversion Assistance Branch Manager or designee.
  - a. Technical point of contact for diversion assistance during the immediate and sustained stages of removal and cleanup following a disaster.
  - b. Provides guidance to local officials and others in order to facilitate diversion activities and resource recovery.
  - c. Participates, as necessary, in activities coordinated through the OES Emergency Operations Center or Disaster Field Office.
4. AF Health and Safety Officer or designee.
  - a. Provides technical support to IWMB emergency response team members with respect to health and safety concerns surrounding the handling, storage, reuse/recycling or disposal of solid waste following a disaster.
  - b. Participates in activities coordinated through the OES Emergency Operations Center or Disaster Field Office on as-need basis.

#### VI. Standards Waiver Mechanism.

(Staff recommends that permanent emergency regulations be promulgated concurrent with the preparation of the Plan. The regulations will waive specified standards during an emergency. The purpose of the regulations will be to preserve public health and safety, and the general welfare during an emergency. The regulations should include provisions for relaxed restrictions in the following areas: origin of waste, daily permitted tonnages, transfer of solid wastes, allowance to accept various types of nonhazardous wastes, and hours of facility operation.

The drafting of regulations is considered to be an activity which is separate from the preparation of the Integrated Waste Management Disaster Plan. Hence, the framework for the regulations is not scoped in the outline nor are other considerations addressed, such as the need to comply with CEQA.)

VII. Information to Facilitate Maximum Diversion of Solid Waste Resulting From a State or Local Emergency.

- A. Immediate Emergency Response for the Handling, Storage, Processing, Transportation, Diversion, or Disposal Following Disasters.
  - 1. Discussion of types and origin of materials which will be generated from a disaster.
  - 2. Determination whether debris is hazardous.
  - 3. Removal of disaster debris.
  - 4. Storage of debris.
  - 5. Mechanisms for diversion.
- B. Sustained Response for the Reuse and Recycling of Disaster Debris During Reconstruction.
  - 1. Types of waste to target for diversion.
  - 2. Existing markets for targeted materials.
  - 3. Private and public sector entities which can divert targeted material.
  - 4. Procurement preferences and minimum content requirements.
  - 5. Contractual agreements.

VIII. Guidance For Record-Keeping.

- A. Information Required to Support Reimbursement Claims to Recover Disaster-Related Expenditures.
- B. Information Necessary to Substantiate Diversion/Disposal Claims.
- C. Information Needed to Assess the Effect of Disaster Debris on Landfill Capacity.

Conceptual Schedule For  
Integrated Waste Management Disaster Plan

ID	Name	Duration	February Feb	March Mar	April Apr	May May	June Jun	July Jul	August Aug	September Sep	October Oct	November Nov	December Dec	January Jan	February Feb	March Mar	April Apr
1	first draft plan	122ed															
2	revision of first draft	60ed															
3	public workshops	60ed															
4	finalize second draft - present to	58ed															
5	committee and board	1d															

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

POLICY COMMITTEE

APRIL 7, 1993

AGENDA ITEM 4

**ITEM:** Presentation of staff report, "The Economics of Out-of-State Waste Disposal".

**BACKGROUND:**

At the request of the Executive Office, staff in the Economic Research and Forecasting Section conducted an analysis examining the potential effects that waste exportation could have on the Board's principal funding source, the Integrated Waste Management Account (IWMA).

**ANALYSIS:**

Currently, a \$.75 per ton fee levied at landfills throughout California is deposited into the IWMA. If jurisdictions choose to export waste, the \$.75 per ton tip fee could not at present be legally collected. The study concludes that the potential impact of export on the IWMA is a decrease of between \$8.2 and \$11 million annually in the near-term and a possible decrease of between \$16.5 and \$22 million yearly in the long-run. The potential impact that new landfills within indian reservations and the enactment of Subtitle D could have on these estimates was also examined. Waste flow restriction practices were also examined in the study.

**STAFF COMMENTS:**

The attached report is provided for discussion

**ATTACHMENTS:**

1. CIWMB Fiscal Impact Report: The Economics of Out-of-State Waste Disposal

Prepared by: Stacie Sormano Phone: (916) 255-2706

Reviewed by: Dennis Meyers DM Phone: (916) 255-2634

**IWMA**  
**FISCAL IMPACT REPORT**  
**THE ECONOMICS OF OUT-OF-STATE WASTE DISPOSAL**

**MARCH 1993**



**PREPARED BY THE**  
**Economic Research and Forecasting Section**

**Author: Stacie Sormano**  
**Manager: Dennis Meyers**

**CIWMB Fiscal Impact Report:**

**The Economics of Out-of-State Waste Disposal**

Rates charged for non-hazardous solid waste disposal have increased dramatically in the last few years. As a result counties throughout California have been looking into alternative methods of waste disposal. One option currently being considered is the prospect of exporting solid waste to states with lower tipping fees. The economic viability of export is contingent upon;

- 1) landfill capacity of out-of-state landfills,
- 2) tipping fees outside of California,
- 3) transportation rates,
- 4) tipping fees within California, and
- 5) landfill closure schedules within California.

Those jurisdictions incurring scarce landfill capacity and tip fees in excess of the total cost of out-of-state landfill disposal are those most likely to implement some type of out-of-state disposal program.

Presently, the two most likely out-of-state destinations for California's waste are sites near Phoenix, Arizona and in East Carbon, Utah. There is no work currently being done at the

Phoenix site; however, representatives of the East Carbon landfill are currently soliciting long-term disposal contracts. East Carbon is currently soliciting twenty year contracts. Officials from East Carbon believe that their current operational optimum is approximately 20,000 tons of solid waste per day.<sup>1</sup> The optimal operational capacity is restricted only by East Carbon's ability to operate efficiently. Since total capacity can be expanded by 50% without applying for additional permits in the state of Utah, it is assumed that daily capacity can also be expanded by 50%. It is assumed that the facility would have difficulty physically accommodating the additional staff and machinery if more than 30,000 tons were landfilled daily.<sup>2</sup> The life of the Utah facility is estimated to be approximately forty to fifty years.<sup>3</sup> Comparable data for the potential Arizona landfill are not available though it is reasonable to assume that its lifetime and capacity constraints will be comparable to the East Carbon site. Thus, current capacity projections for out-of-state landfills range from 30,000 tons per day in the near-term to 60,000 tons per day in the long-term.

The East Carbon, Utah landfill is currently quoting transportation by rail and tip fees that total approximately \$40 per ton.<sup>4</sup> Costs not factored into this rate include transportation to

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<sup>1</sup>Hallissy, Erin, Contra Costa Cities May Use Utah Dump. San Francisco Chronicle, December 14, 1992.

<sup>2</sup>In a phone conversation with the project manager for the East Carbon landfill for the state of Utah, Roy Vanos, on January 25, 1993, he confirmed that the East Carbon, Utah site had the ability to expand its capacity by 50% without acquiring additional permits. It was therefore reasoned that if total capacity were increased then the operational space would also increase. The 50% estimate is only a ballpark figure.

<sup>3</sup>Hallissy. The life of the landfill was also confirmed by Roy Vanos in a phone conversation on January 25, 1993.

<sup>4</sup>This estimate was given by staff in the Local Assistance Branch of the CIWMB. The March 1992 issue of Landfill Price Digest cited an estimate of \$50 per ton in its article LA County Reaches Accords On Rail Hauling. Even if the higher estimate is accurate, it would have very little net effect on the results presented in

the loading facilities, construction of loading facilities, specially constructed railroad cars and any type of transport fees levied on the waste as it travels to its destination. In order to estimate the maximum potential impact on the Integrated Waste Management Account (IWMA) several assumptions will be made that minimize cost estimates. For the purpose of this analysis we will consider \$40 a ton to be the equivalent of a gate fee within each county's jurisdiction since transportation must be provided whether the waste is taken directly to a landfill or to a loading facility for transportation by rail. Construction of loading facilities and specially constructed railroad cars are capital goods that incur costs which can be amortized over several years. Lacking indications to the contrary, their impact on per ton disposal costs are assumed to be negligible. It is currently impossible to pre-determine what fees, if any, will be levied on rail hauled waste, so again, the cost is assumed to be negligible. In order to determine which California counties will find it cost effective to haul waste out-of-state, the \$40 per ton transportation and landfill charges quoted will be considered the effective tip fee facing local jurisdictions.

Assuming that local governments will attempt to maximize economic efficiency, those counties which face current in-state tipping fees in excess of the out-of-state (\$40 per ton) fees are likely to consider exporting their waste to an out-of-state disposal site. For the purpose of this study, it is assumed that the highest priced landfill within each jurisdiction represents the true marginal cost of waste disposal. Therefore, any new landfill constructed after the closure of existing lower priced landfills within the jurisdiction would set their tip

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this study.

fees at or above the highest current tip fee being charged. Fourteen jurisdictions within California currently face maximum tip fees in excess of \$40 per ton:

Contra Costa	Los Angeles	Del Norte
San Mateo	Tuolumne	Nevada
Alameda	San Bernardino	Sierra
Stanislaus	Ventura	Humboldt
Mendocino.		

Of these counties, Contra Costa,<sup>5</sup> Los Angeles, Del Norte, San Mateo, Tuolumne and Nevada will be in need of new landfill capacity within the next five years<sup>6</sup> (see Table I).

The remaining eight counties will need to acquire new capacity within the next fifteen years (see Table II).<sup>7</sup>

The impact on the taxable waste stream landfilled within California is dependent on the ability of other states to penetrate California's waste market. Two factors that might effect the penetration rate are; 1) available landfill capacity outside of California, and 2) available rail haul capacity.<sup>8</sup> Earlier we established the landfill capacity available for out-of-state

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<sup>5</sup>Contra Costa county acquired landfill capacity at Keller Canyon after the publication of the CIWMB's study, Reaching the Limit: An Interim Report on Landfill Capacity in California, however, gate fees at this facility are \$76 per ton and transfer station fees for waste landfilled at this facility exceed \$80 per ton, thus, landfilling at East Carbon would continue to be economically beneficial for Contra Costa at \$40 per ton.

<sup>6</sup>The base year for these projections was January 1990. Therefore, as of January 1, 1990 there was five years of expected capacity left. The total capacity expiring in 1995.

<sup>7</sup>CIWMB publication, Reaching the Limit: An Interim Report on Landfill Capacity in California. p 14.

<sup>8</sup>For the purposes of this study, it is assumed that the most likely method of transportation utilized for out-of-state export would be via the railroad.

waste at 30,000 tons per day in the near-term and 60,000 tons per day in the long-term. Daily tonnage is currently just over 40,000 tons for the six counties cited above that could be seeking additional capacity in the near-future (see Table I: Totals for Shaded Area) and just under 60,000 tons for the eight counties seeking capacity in the long-term (see Table I and II: Table I Shaded totals and Table II Totals). Representatives from Southern Pacific Railroad confirmed that the current railroad system could accommodate the entire load.<sup>9</sup> Thus, the upper limit on the volume of waste leaving the state is constrained by the amount of out-of-state landfill capacity. The near-term limit on waste rail hauled out-of-state is approximately 30,000 tons per day. In the long-term the amount of waste leaving the state will most likely be constrained at the 60,000 tons per day capacity assumed for the East Carbon and Phoenix landfills.

Due to the extent of their urban development, their current landfill capacity and tip fees, Contra Costa and Los Angeles counties are the most likely candidates for out-of-state disposal in the near-term.<sup>10</sup> Current projections indicate that all landfills within these counties are expected to run out of capacity by 1993 and 1994, respectively.<sup>11</sup> These two counties account for approximately one percent and thirty-two percent, respectively, of California's waste stream (see Table I).<sup>12</sup> The total amount of waste landfilled in these two

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<sup>9</sup>Interview with Chuck Travis of Southern Pacific Railroad on January 20, 1993.

<sup>10</sup>Although Napa county's landfill tip fees have not reached \$40 per ton, which is the minimum threshold for inclusion in the category that is considering out-of-state landfilling for this study, they are currently considering out-of-state rail haul as a waste disposal option.

<sup>11</sup>CIWMB publication, Reaching the Limit: An Interim Report on Landfill Capacity in California. p 14.

<sup>12</sup>Napa county is responsible for .5% of California's waste stream.

counties in 1990 was approximately 38,000 tons per day (see Table I: Totals for Contra Costa and Los Angeles Counties), or 13.9 million tons per year.<sup>13</sup> Due to the capacity constraint of the East Carbon landfill, the maximum amount of waste that could be exported is 30,000 tons per day, or nearly 11 million tons per year. This could result in a revenue loss of over \$8.2 million for the Integrated Waste Management Account (IWMA) at its present rate of \$.75 per ton, or nearly \$11 million at the statutory ceiling of \$1 per ton. Total disposal for the thirteen jurisdictions considered likely candidates for participation in an out-of-state rail haul program is approximately 59,883 tons per day (see Table I and II: Table I Shaded Totals and Table II Totals), or nearly 22 million tons per year. The long-term limit, imposed by the presumed out-of-state landfill capacity of 60,000 tons per day could result in a revenue loss of approximately \$16.5 million for the IWMA at the present rate of \$.75 per ton, or nearly \$22 million at the statutory ceiling of \$1 per ton.

#### **ADDITIONAL ISSUES AND CAVEATS**

Several additional issues and caveats should be examined that could affect the conclusions drawn by this study. The assumptions used in the study and several other factors may increase or decrease the ultimate impact that waste exportation could have on the IWMA. The additional issues and caveats include: 1) assumptions used within the study, 2) the inclusion of Indian reservations as a possible export destination, 3) the effects of Subtitle D

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<sup>13</sup>Napa county produces waste at a rate of 688 tons per day or just over 250 thousand tons per year. Combined with the totals for Los Angeles and Contra Costa counties the total tons per day is 38.5, or just over 4 million tons per year.

on landfill capacity, and 4) various legal issues pertaining to the flow of waste.

This analysis depicts a worst case scenario. Some of the assumptions used in this analysis were simply educated guesses which filled in the blanks when a total lack of information was present. Deviations in these assumptions would alter the conclusions drawn from this analysis. There are two factors which could significantly alter the outcome of this analysis: 1) the assumptions regarding the amount of waste that can be landfilled out-of-state on a daily basis, and 2) the existence of current contracts which could impact the implementation of out-of-state disposal.

A cap of 30,000 tons per day was assumed for the East Carbon site in the near future and a total of 60,000 tons per day in the long-term due to the addition of a Phoenix landfill. Since there is no daily capacity limit at the East Carbon site, staff relied on estimates of an optimal operating capacity of 20,000 tons per day. Under Utah's permit laws, total capacity of a landfill can be increased up to 50% without additional permits. Staff assumed that if total capacity increased by 50%, then daily optimal operating capacity would also increase by 50%, then daily optimal operating capacity would also increase by 50% to 30,000 tons per day. Assumptions regarding the Phoenix site are strictly assumptions. There is reason to believe that Waste Management Inc. is currently looking for property conducive to the construction of a "mega-landfill" in the Phoenix area. If no land is acquired in Phoenix, Waste Management Inc. could seek real estate in other states, such as Nevada. In all likelihood, a "mega-landfill" conducive to rail haul could be sited within the next five years

depending on the host state's permit laws. Due to the total lack of information regarding this project, staff assumed that this landfill would exhibit similar characteristics to the East Carbon site. This speculation is dependent on the size and permit requirements of the landfill's host state. Either of these factors could increase or decrease the amount of capacity available to landfill out-of-state waste.

The underlying assumption regarding the amount of waste that out-of-state landfills can accommodate does not incorporate existing contracts for the acceptance of waste not originating in California. Pre-negotiated contracts would have priority over new contracts with out-of-state waste generators. Unless special preference is given to host state generators, the remaining capacity would most logically be sold to the highest bidder. The fact that East Carbon is currently soliciting contracts at \$40 per ton, which is below the cost many counties are incurring for landfill capacity in California, leads one to the conclusion that Utah waste generators are not willing to pay the portion of the \$40 fee which is a tip fee. Thus, it becomes economically beneficial for officials at the East Carbon site to pursue contracts with generators willing to pay \$40 per ton, namely California. Nonetheless, East Carbon most likely does have existing contracts that must be honored before California waste can be accepted. The impact that these contract have on the amount of landfill space available for California's waste is unknown and may or may not impact the conclusions drawn in this analysis.

## Indian Reservations

Waste would also be considered an export if it were landfilled within an Indian reservation. Due to the fact that Indian reservations are autonomous in the state in which they are located, the Board would be unable to levy the IWM Fee on waste landfilled at Indian reservations. This creates the same problem for the Board that landfilling in another state creates; the possibility of diminished revenues for the IWMA.

Three waste facilities are currently being pursued by Indian reservations within California. The Torres-Martinez reservation is in the process of siting a waste sludge recycling facility and Campo Indian reservation is in the process of siting a municipal solid waste landfill. Both of these facilities will receive waste that is currently being landfilled within the CIWMB's jurisdiction. Thus, both will reduce the amount of waste which will be subject to the IWM Fee. The La Posta incinerator is the third waste facility; however, it accepts only hazardous waste and will not affect the IWM Account.

The Torres-Martinez reservation is located in the Imperial Valley. The reservation is currently proceeding with construction of a sludge treatment facility; however, they have not received final approval from the United States Bureau of Indian Affairs. The proposed facility has the capacity to process 1,800 tons of waste sludge per day. While this waste will be diverted from California landfills, thus reducing the amount of fees being collected for the IWM Account, this diversion and recycling of sludge assists local jurisdictions in their

pursuit of AB 939 goals. Consequently, the diversion caused by the Torres-Martinez facility should not be added to the calculations totalling the losses to the IWM Account due to waste exports.

The Campo reservation is also pursuing approval to site a waste facility, in this case a municipal solid waste landfill. They are currently awaiting approval from federal, state and local government agencies before they begin construction. If construction approval is received in a timely manner, construction could begin in March or April, with the possibility of completion as early as mid-summer. The reservation is trying to obtain approval to accept up to 3,000 tons of waste per day.<sup>14</sup> If the project is approved, the reservation will have the potential to accept between 780 thousand and 1.1 million tons of waste per year from California. At the current rate of \$.75 per ton the IWMA would face a **\$587 to \$821 thousand** reduction in the IWMA and possibly as much as **\$1.1 million** reduction if the fee were increased to \$1 per ton. This would be in addition to any reductions incurred due to out-of-state landfilling.

Considering that there are over one hundred reservations within California, relatively few have pursued the option of hosting waste facilities. Only one additional reservation has shown interest in hosting a landfill: Los Cayotes. In the summer of 1992 this reservation signed a contract with Chambers Development to conduct a series of environmental impact studies; however, the company never sought exploration permits which would allow them

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<sup>14</sup>This information was obtained from a telephone conversation between staff and Michael Connolly, Director of the El Campo Reservation Environmental Protection Agency, on February 11, 1993.

access to the reservation and the work was never done.<sup>15</sup> Pat Henney and John Rydzik of the Bureau of Indian Affairs agree that the two main factors keeping additional reservations from siting landfills are: 1) a lack of land on some reservations (Indian reservations range in size from 12 to 25,000 acres) and 2) reservations close to population centers which generate the bulk of California's waste do not consider the development of a landfill to be the highest use of their property, thus, they pursue other economic development projects.<sup>16</sup>

#### Subtitle D

Subtitle D refers to Federal regulations which specify the minimum requirements landfills must meet to ensure public health and safety. After Subtitle D goes into effect on October 9, 1993, landfills that do not adhere to the requirements specified will either: 1) have to retrofit to bring the existing landfill into compliance, or 2) close. Current estimates project that over 60% of Utah's landfills will close due to Subtitle D.<sup>17</sup> This raises three questions regarding California's ability to export waste to landfills in Utah: 1) does the facility at East Carbon, Utah comply with Subtitle D standards, 2) will the closure of 60% of Utah's landfills severely limit the capacity within Utah, and if so, would this decrease the ability of East Carbon to accommodate out-of-state waste, and 3) will the price of landfilling waste increase

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<sup>15</sup>This information was obtained in a phone interview with John Rydzik of the Bureau of Indian Affairs on March 22, 1993.

<sup>16</sup>This information was obtained in a March 22, 1993 phone interview.

<sup>17</sup>More Than 60 Percent of Utah's Landfills May Close Over Sub D. Solid Waste Report, Vol. 24 No. 6, February 11, 1993. p 45.

due to the decrease in landfill capacity.

East Carbon currently meets the requirements specified in Subtitle D.<sup>18</sup> Therefore, the landfill will continue to operate at its current capacity.

The February 11, 1993 issue of "Solid Waste Report" states that over 60% of Utah's landfills will close due to Subtitle D.<sup>19</sup> While this seems like a large number of landfills, further investigation revealed that it is a relatively small percentage of Utah's total landfill capacity. Most of the landfills that are scheduled to close are small, rural, unlined and often open landfills. While some jurisdictions will no longer have landfill capacity, in most cases they can obtain access to landfills in a neighboring jurisdiction.<sup>20</sup> To date there has been only one contract entered into between a jurisdiction in northeastern Utah and the East Carbon facility. The specifics of the contract are unknown; however, the jurisdiction has historically produced only 80 to 90 thousand tons of waste per year. Assuming that all of the northeastern jurisdiction's waste will be landfilled at East Carbon, reducing its ability to accept imported waste by a like amount, then the potential annual loss from out-of-state landfilling on the IWMA will be reduced by \$67,500 at the current fee level of \$.75 per ton, or \$90,000 at the statutory maximum of \$1.00 per ton. Given that the total potential

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<sup>18</sup>Confirmed during an interview with Roy Vanos who works for the state of Utah specializing in municipal solid waste on February 26, 1993.

<sup>19</sup>More Than 60 Percent of Utah's Landfills May Close Over Sub D. Solid Waste Report, Vol. 24 No. 6, February 11, 1993. p 45.

<sup>20</sup>Confirmed in a February 26, 1993, interview with Roy Vanos.

decrease in IWMA revenues due to waste exportation runs between \$8.2 and \$11 million in the near-term and between \$16.5 and \$22 million in the long-term; the contract between the northeast jurisdiction in Utah and East Carbon will have little overall effect on the potential impact on the IWMA.

While the impact that Subtitle D will have on Utah's capacity is minimal, it is likely that landfills in some areas will increase their prices due to the increase in demand and lack of alternative landfill capacity. It is estimated that fees will rise from \$13 to \$20 per ton at the Salt Lake Valley facility, an increase of \$7 per ton.<sup>21</sup> If it is assumed that the \$7 increase represents an average increase, then it can be determined that if fees at East Carbon increase they will increase approximately \$7, from \$40 to \$47 per ton. Due to the fact that only jurisdictions facing tip fees at or above \$50 per ton were considered probable candidates for waste export, it can be concluded that the increase in fees due to Subtitle D will have little or no effect on California's potential to export waste.

The East Carbon Facility complies with the mandate of Subtitle D, enabling the facility to remain open. The decline in capacity throughout Utah is likely to ease the impact that waste export will have on the IWMA by no more than \$90 thousand annually. In short, Subtitle D is likely to have only a minimal impact on East Carbon's ability to accept waste from out-of-state; thus, it is unlikely that Subtitle D will ease the impact that waste exportation is projected to have on the IWMA.

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<sup>21</sup>More Than 60 Percent of Utah's Landfills May Close Over Sub D. Solid Waste Report, Vol. 24 No. 6, February 11, 1993. p 45.

## Waste Flow Restrictions

The exportation of waste will undoubtedly create some problems for regulators in the state of California. If policy makers choose to take action in an attempt to mitigate these problems, the lessons learned from other states may be helpful.

The transfer of waste from one jurisdiction to another and from state to state has created problems for regulators who must carry out state mandated programs. Several attempts have been made to control the flow of waste with varying degrees of success. Some states have tried to control the flow of waste by using financial mechanisms to create incentives or disincentives to transporting waste outside the jurisdiction. Others have successfully banned the transport of waste outside the jurisdiction.

Several states hoping to end an influx of waste from out-of-state have tried to impose fees on imported waste. These fees have been contested as an infringement on the Commerce Clause of the United States Constitution. Fees that have been found in violation of the Commerce Clause are restricted to those levied in excess of fees incurred within the state and fees levied in states that do not impose fees on in-state waste.

Flow laws have been used to control the flow of waste within a state. These laws restrict the flow of waste from leaving a specific jurisdiction. A North Hempstead law in the state of New York which prohibited the flow of waste from leaving the jurisdiction was recently

upheld in court.<sup>22</sup> Waste haulers were transporting waste to a nearby jurisdiction's landfill to take advantage of lower tip fees. A newly constructed landfill within the jurisdiction had tip fees far in excess of those in the neighboring jurisdiction. Officials within the North Hempstead jurisdiction argued, in court, that they had built their landfill with the expectation of receiving a certain amount of waste from the communities within their jurisdiction. Without that waste it would be impossible to plan for the accommodation of future landfill needs. The court agreed with the officials from North Hempstead and the waste generated within the jurisdiction was ordered to be landfilled within the jurisdiction.

While some jurisdictions have successfully controlled the flow of waste in their jurisdiction, other attempts have been blocked by courts. Arguing that any flow restriction is an infringement upon the Commerce Clause in the United States Constitution, rulings in both Minneapolis, Minnesota and Montgomery, Alabama struck down attempts to control the flow of waste.<sup>23</sup>

Transferring waste between jurisdictions and states creates a multitude of problems for government officials. Attempts to control the flow of waste have encountered legal questions regarding the autonomy of states and the extent to which local governments have a right to control the resources within their jurisdictions. Flow control laws that restrict local flow have been more successful than laws restricting the flow of waste from one state to another;

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<sup>22</sup>Enos, Gary. Ruling Supports Waste Planning. City and State, January 18, 1993. p 2.

<sup>23</sup>This information was obtained from the March 11, 1993 Solid Waste Report in an article titled, U.S. Judge Again Rules for Private Haulers in Flow Control Case.

however, the nature of the problem should always be considered when policy options are being formulated to ensure an appropriate outcome.

**Attachments:**

1. **Tables I and II**
2. **Article: Rail Haul Gains Approval as New Projects Proceed**
3. **Article: Cal/EPA and Campo Mission Indians Sign Solid Waste Facility Agreement**
4. **Article: More Than 60 Percent of Utah's Landfills May Close Over Sub D**
5. **Article: Federal Court Update on Out-of-State MSW**
6. **Article: Ruling Supports Waste Planning**
7. **Article: Judge Again Rules For Private Haulers in Flow Control Case**

**1/ TABLE I  
COUNTIES WITH LESS THAN FIVE YEARS REMAINING LANDFILL CAPACITY  
AS OF JANUARY 1, 1990 1/**

**Shaded counties face maximum tip fees greater than \$40/ton**

<u>COUNTY</u>	<u>YEARS OF REMAINING CAPACITY*</u>	<u>MAXIMUM TIP FEE</u>	<u>DAILY DISPOSAL TONNAGE</u>	<u>% OF TOTAL WASTE IN CA</u>	<u>ANNUAL IMPACT ON IWMA AT \$.75/TON</u>
Contra Costa	2/ 3	\$74	843	0.72%	(\$230,771.25)
Los Angeles	4	\$51	36,986	31.74%	(\$10,124,917.50)
Del Norte	2	app. \$42	N/A	N/A	N/A
Napa	3/ 4	\$31	668	0.57%	(\$182,865.00)
San Mateo	4	\$40	2,427	2.08%	(\$684,391.25)
Kings	2	\$30	222	0.19%	(\$60,772.50)
Merced	4	\$15	543	0.47%	(\$148,646.25)
Madera	1	\$22	115	0.10%	(\$31,481.25)
Tuolumne	3	\$52	178	0.15%	(\$47,906.25)
Nevada	0	\$133	151	0.13%	(\$41,336.25)
<b>TOTALS FOR CONTRA COSTA AND LOS ANGELES COUNTIES:</b>			<b>37,829</b>	<b>32.46%</b>	<b>(\$10,355,688.75)</b>
<b>TOTALS FOR SHADED AREA:</b>			<b>40,582</b>	<b>34.82%</b>	<b>(\$11,109,322.50)</b>

**1/ TABLE II  
COUNTIES WITH \$40 PER TON TIP FEES AND 15 YEARS OR LESS OF CAPACITY AS OF JANUARY 1, 1990**

<u>COUNTY</u>	<u>YEARS OF REMAINING CAPACITY*</u>	<u>MAXIMUM TIP FEE</u>	<u>DAILY DISPOSAL TONNAGE</u>	<u>% OF TOTAL WASTE IN CA</u>	<u>ANNUAL IMPACT ON IWMA AT \$.75/TON</u>
Alameda	15	\$52	8,219	7.05%	(\$2,249,951.25)
San Bernardino	11	\$68	5,479	4.70%	(\$1,499,876.25)
Sierra	15	\$48	31	0.03%	(\$8,486.25)
Stanislaus	9	\$40	1,058	0.91%	(\$289,627.50)
Ventura	4/ 11	\$41	3,479	2.99%	(\$952,376.25)
Humboldt	9	\$48	367	0.31%	(\$100,466.25)
Mendocino	9	app. \$82	668	0.57%	(\$182,865.00)
<b>TOTALS</b>			<b>19,301</b>	<b>16.56%</b>	<b>(\$5,283,648.75)</b>

**TABLE I SHADED TOTALS PLUS**

**TABLE II TOTALS: 59,883 51.39% (\$16,392,971.25)**

1/ Data from CIWMB publication: "Reaching 'the Limit: An Interim Report on Landfill Capacity in California" published April 29, 1992.

2/ Contra Costa has increased its landfill capacity since the 1992 study was completed, however, it currently faces tipping fees of \$76 per ton, far in excess of the \$40 per ton tipping and transportation fee for East Carbon, Utah. Thus, they are still considered export candidates.

3/ As of January 1, 1993 Napa county estimates that they have approximately 7 to 8 months of remaining capacity.

4/ Bailard landfill is currently experiencing problems. If this site closes Ventura county would need additional capacity earlier than anticipated.

## CALIFORNIA Rail-Hauling Gains Approval As New Projects Proceed

In Los Angeles recently, county officials gave a demonstration of one possible future for Southern California's waste disposal. As a number of officials from Los Angeles County communities looked on, 20-ton metal containers were lifted onto flatbed rail cars and shipped to a landfill 800 miles away.

The Sanitation Districts of Los Angeles County, which arranges daily for disposal of one-third of the waste in the county, staged the first local demonstration of rail-hauling. Present were officials from the East Carbon Development Corp., which recently opened its 3,000-acre Utah landfill. The landfill is touted to have the largest capacity of any facility in the nation.

The train arrived in East Carbon City, Utah, two days later. Paul Clark, mayor of the town of 1,300 in eastern Utah, said his city is willing to accept as much waste as Southern California can send.

To haul the waste this week, the landfill charged \$40 per ton. Although that is nearly twice the local average disposal rate, waste officials say that in several years, \$40 to \$50 a ton is expected to be competitive in comparison to charges at the eight public and private landfills where capacity is dwindling rapidly.

Sanitation Districts officials, who oversee the nation's second-largest landfill at Puente Hills, have indicated that they are optimistic about negotiating with the Utah facility and with five private companies working on developing rail-haul landfill sites in Southern California desert areas.

The Utah site, although much farther away than the others, is expected to compare favorably in the prices charged for hauling waste. If a rail-

haul network is established, Carbon County officials are talking about charging an additional 50 cents a ton on trash coming from out of state, while at the proposed Southern California sites, the similar levy is expected to be approximately \$5 a ton.

All the competition means that the residents of Los Angeles County will benefit. But before rail haul becomes a reality, facilities to transfer waste to trains must be built. In late November, the board which governs the Puente Hills landfill approved an environmental study of a plan to construct such a facility for waste-to-train transfer. Although there has been opposition to the project from Hacienda Heights neighbors, the first trains could be running by 1994.

One of the rail-haul projects, termed Rail Cycle, recently released its environmental impact report for public review. Rail Cycle, a joint venture between the Atchison, Topeka & Santa Fe Railway Co. and Waste Management Inc., would ship waste to a 4,800-acre landfill 80 miles east of Barstow, near Amboy. The San Bernardino County Planning Commission has begun examining the report.

Rail Cycle officials said the total system, from loading docks to the desert landfill, will cost \$130 million to develop. If they obtain prompt approval from all licensing bodies, they hope to open in the early part of 1994. Public hearings on the landfill will be held in mid-February. ■

esolve the many problems now affecting the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.

Whereas the interim standards seek to provide short-term solutions to the Bay Delta, BDOC will develop long-term solutions that provide safe, reliable water supplies for urban and agricultural users, as well as the restoration and protection of fish, wildlife and threatened and endangered species.

BDOC is comprised of representatives from all interested groups including water suppliers, agriculture, environmental and wildlife groups, municipal and regional water agencies and elected officials.

## Cal/EPA And Campo Mission Indians Sign Solid Waste Facility Agreement

California Environmental Protection Secretary James I. Strock and Campo Environmental Protection Agency (CEPA) Director Michael Connolly signed an agreement December 11, allowing the Campo Band of Mission Indians to build and operate a solid waste recycling and disposal facility in San Diego.

The agreement was developed and adopted pursuant to the requirements of Assembly Bill 240 (Chapter 805, Statutes of 1991), authored by Assemblyman Steve Peace (Chula Vista) and signed by Governor Wilson in August of 1991.

The agreement defines requirements for the construction and operation of a proposed solid waste recycling and disposal facility on the Campo Reservation in San Diego County.

Strock praised Assemblyman Peace in authoring this legislation that other states can look towards for guidance in establishing agreements with Tribes on environmental issues.

The Campo Band initially submitted the proposed cooperative Agreement to Cal/EPA on March 21, 1992, beginning the formal review, comment and decision period.

After a series of negotiations between Cal/EPA and the Campo Band, Secretary Strock released for public review and comment the proposed Cooperative Agreement with EPA on July 21, 1992.

A public hearing on the proposed Agreement was held on August 24, 1992, at the Community Center in Alpine, California. The public comment period closed on October 19, 1992. A response to comments was prepared by Cal/EPA and was released December 11, 1992.

Cal/EPA Report is published the first week of each month by the California Environmental Protection Agency, External Affairs Unit, located at 555 Capitol Mall, Suite 225, Sacramento, CA 95814. The office number is (916) 324-6670.

Cal/EPA includes the Air Resources Board, Integrated Waste Management Board, State Water Resources Control Board, Department of Pesticide Regulation and Toxic Substances Control and the Office of Environmental Health Hazard Assessment.

Any comments or address changes can be made via facsimile at (916) 445-6401.

Cal/EPA reviewed the proposed cooperative agreement and found that it met AB 240 requirements. Cal/EPA reviewed the Campo Band system for regulation of the proposed solid waste recycling and disposal facility on the Campo Indian Reservation.

This review established that the Campo Environmental Policy Act of 1990, the Solid Waste Management Code of 1990, and the Campo Environmental Protection Agency regulations, taken together, met the requirements of the legislation and are functionally equivalent to state laws and regulations, as required.

Cal/EPA found the Campo Band regulatory system very closely patterned after the California regulatory system for solid waste recycling and disposal facilities. Cal/EPA also found that the Campo Band system will provide at least as much protection of public health and safety and the environment as does the California statutory and regulatory system.

As a result, Cal/EPA determined that there were no material differences between State laws and regulations and the proposed Tribal functionally equivalent provisions.

Cal/EPA retains its enforcement powers to protect public health and the environment should any violation of State and Federal environmental laws occur and not be properly addressed by the Campo Band.

### Air Resources Board

## Anti-Soot Roadside Tests for Diesel Trucks, Buses Required

The ARB has adopted a program to expand the roadside testing of smoking diesel trucks and buses by requiring owners of two or more vehicles to conduct annual anti-soot tests on their fleets.

The testing program, which will affect up to 120,000 trucks and buses a year, is set to begin January 1995. Owners of only one vehicle or fleets licensed in other states are exempt from the self-inspection, but ARB officials stressed that those vehicles are still subject to the random roadside test, which includes all diesel-powered heavy-duty trucks and buses that are driven in the state.

While the majority of vehicles tested at roadsides are "big-rigs" and large buses, the new self-inspection program will also include many large delivery vehicles that are used almost exclusively in cities.

Fleet operators will conduct the tests themselves with equipment that measures the density of smoke and the vehicles must meet the same anti-soot standards as those used in the random roadside testing of diesel vehicles, which began November 1991. The density of smoke is measured while the engine is revved to full throttle, simulating a rapid acceleration. Engines with smoke density or opacity greater than 55 percent -- emissions that are three or four times greater than when the engines were new -- would require repairs. Fleet operators will be required to keep records of the tests they do for at least two years and will be audited by ARB enforcement staff.

The new soot emissions targeting the pollution, enhance. In approximate citations by resulting in required repair trucks by about trucks and about thirds as a fuel economy. The primary types of commercial standards refer for 1993, diesel style tests.

The ARB essentially "cutting emissions in place just manufacture trucks equipped diesel-powered engines designed methanol.

The regulated diesel trucks is available for

### Department of **New Program** **ID Number**

DTSC's applications adopted new in the future.

For the enclosed significant timely manner arduous waste otherwise has an EPA identification who needed; a written application months to re-

A major anticipated growth factors. When [arduous Waste] anticipated issuing However, HWID numbers, 25,000 and 3

## More Than 60 Percent of Utah's Landfills May Close Over Sub D

More than 100 of Utah's 164 landfills may close if compliance with the federal landfill rule proves too costly, says an official with the Utah Department of Environmental Quality (DEQ).

No plans exist to replace these landfills and no operator has even applied for a permit, said Roy Vanos, an engineer at DEQ's Bureau of Solid and Hazardous Waste. "The question is, 'Who will be able to pay or it?' Designing a rural landfill is fairly expensive," Vanos said.

This could pose a serious problem as approximately 95 percent of the 1.2 million tons of garbage Utah generates annually is taken to landfills. The only state incinerator, the North Davis County Energy Recovery Facility, burns 350 tons of waste per day, accounting for 3 percent to 5 percent of the waste.

Two landfills, Salt Lake City County Landfill and Bayview in Provo City, compost a small percentage of the waste they receive. Over the past nine months, the Salt Lake landfill has been diverting loads from citizens and landscaping companies to a tub grinder, landfill manager Romney Stewart said. "Given the fact we are nine months into the process, we are still at the pilot level," Stewart said.

But the landfill has more ambitious plans for its composting project, Stewart said. These include composting products for homeowners as well as for city and county golf courses and parks and material for reclamation of Kennecott's copper pit mine. Another product would blend compost with indigenous alkaline soils to produce a topsoil amendment.

As composting and incineration eliminate only a small percentage of waste, landfills are the major source of disposal. The East Carbon Development Corporation is the only facility permitted to accept waste imports from both industrial and municipal sources, Vanos said. East Carbon currently is disposing of industrial waste only, although it is pursuing contracts to house municipal waste. Utah does not export any trash, officials said.

But no increase in waste should occur other than natural increases in generation, Vanos said. Increases in generation can be attributed to population shifts such as the 40 percent population jump during the 1980s from 1,461,000 to 2,040,000 people.

But the diminishing number of landfills will af-

fect the cost of disposal, said Carl Wadsworth, a DEQ environmental scientist. He estimates a rise in fees from \$13 per ton to \$20 per ton at the Salt Lake Valley facility. With 2,000 tons of waste arriving daily, this results in an increase of disposal fees from \$27,000 to \$40,000, reflecting a 48 percent rise in cost.

To counter the impact of closing facilities, the solid waste division is encouraging regionalization, Vanos said. In regionalization, a group of small communities combine to feed one landfill.

The Solid Waste Permitting and Management Rules, proposed by the Utah Solid Waste and Hazardous Waste Control Board for compliance with Subtitle D, will be expensive for landfills to implement, Wadsworth said. These expenses involve the location, construction, operation and monitoring systems for the landfills. Location issues involve avoiding placement of facilities where they can contaminate ground water. Landfills also must be constructed with a composite liner, composed of soil/clay and synthetic layers, rendering the landfill waterproof.

Operational rules include additional record-keeping and producing a yearly report. To obtain a landfill permit, would-be operators would have to provide financial assurance in the form of a trust fund, insurance or a bond to ensure they will be able to pay for properly closing the landfill. Another requirement is limiting the amount of liquids which can be left at landfills.

Landfills also must establish monitoring systems, including a semiannual ground water monitoring system. Landfills must have at least three wells to perform the tests, which cost anywhere from \$1000 per test to hundreds of thousands of dollars, Wadsworth said.

A less costly process is landfill gas monitoring in which landfills are tested for the presence of methane, a gas rarely found in Utah's dry climate. The proposed rule also recommends random inspections of the facilities to check against the disposal of hazardous waste.

Increased costs and landfill closures may result in some illegal dumping initially, Wadsworth said. "There's no way to get around it. But with minimum enforcement and a good education program, government can minimize it," Wadsworth said. The solid waste proposal has been released for a 45-day public comment period, ending March 31. Public meetings will probably result in a revision of some of the rules, Wadsworth said. He anticipates the board will vote on the rules in May or June.

# FEDERAL COURT UPDATE ON OUT-OF-STATE MSW

*An Ohio court strikes down provisions of the state's solid waste management law restricting out-of-state wastes.*

On May 1, 1991, federal District Court Judge, George C. Smith, ruled in favor of NSWMA's challenge to the constitutionality of several provisions of Ohio's solid waste management law which unlawfully discriminates against out-of-state municipal solid waste (MSW). Ohio already has filed a notice of appeal with the U.S. Sixth Circuit Court of Appeals. *NSWMA v. Voinovich*, C2-89-85 (S.D. Ohio, May 1, 1991).

In the summer of 1988, then-Governor Richard Celeste signed into law H.B. 592, a comprehensive amendment to Ohio's solid waste management law. In January, 1989, NSWMA challenged as violations of the Commerce Clause two provisions that imposed a higher tax on out-of-state MSW, purportedly to cover higher inspection costs. A third provision was challenged that subjected persons and firms involved with the interstate transportation and disposal of MSW to burdensome consent-to-service requirements, i.e., to assure that out-of-state persons and firms would be available for any potential civil or criminal proceedings in Ohio.

The first fee provision under attack imposed a fee of \$1.70 per ton on all waste generated within a planning district, \$1.20 per ton for waste outside the district but within Ohio, and \$1.70 per ton for out-of-state waste. In effect, out-of-state waste paid taxes 42% to 143% higher than those imposed on in-state waste.

The second fee provision granted discretion to the individual planning districts to impose fees, in addition to the other fees. But fees imposed on MSW from outside of Ohio had to be three times the amount of the tax on waste from within the planning district.

Judge Smith called the differential tax provisions a

"transparent attempt" to discourage the shipment of MSW into Ohio and that these "protectionist" measures are the type of *per se* violations that the U.S. Supreme Court had declared unconstitutional in the landmark decision in *Philadelphia v. New Jersey*, 437 U.S. 617 (1978).

The provisions, on their face, did not apply even-handedly to both interstate and intrastate commerce. Thus, following a well-established line of U.S. Supreme Court cases, Judge Smith observed that when the state discriminates against interstate commerce "without a compelling reason," the legislation is unconstitutional regardless of how slight the burden is on interstate commerce or how legitimate the state interest.

## *'No compelling reason'*

Judge Smith then examined and dismantled the "compelling" reasons on which Ohio relied for justification of its discriminatory taxes. First, over two billion pounds of out-of-state MSW was disposed of in Ohio (18% of the total) and this, in and of itself, the state argued, is sufficient to tax this waste at a higher rate. However, the teaching of *Philadelphia v. New Jersey* is that a state may not preserve for its citizens a preferred right to scarce natural resources in the form of disposal capacity at the expense of out-of-state users of that resource.

Second, Ohio claimed that out-of-state MSW presented unique regulatory problems because these waste streams cannot be inspected at their point of origin, and inspections are more difficult and expensive.

Third, the state argued that the increased threat of hazardous waste materials entering its boundaries in MSW also required higher fees for inspection.

Judge Smith found that Ohio's claims that the allegedly higher cost of inspecting out-of-state MSW required that it treat domestic and foreign waste differently are "without support." While acknowledging that states are free to

BY BRUCE PARKER

*Parker is managing director, general counsel for NSWMA.*

ATTACHMENT V

incur legitimate, additional administrative costs in inspecting articles located outside the state, he found that Ohio's provisions were not designed as a scheme for the inspection of wastes but rather as a "piece of legislation geared toward raising revenue to offset the state's cost of cleaning up its landfills and disposal facilities." Some of the monies were allocated for raising funds to offset Ohio's matching obligations under CERCLA (Superfund), and part of these revenues were earmarked for funding a host of activities pursuant to comprehensive solid waste management planning. Even assuming that these taxes were for inspection, Judge Smith pointed out that "the state has not produced any evidence whatsoever that the cost of inspecting out-of-state waste is significantly higher than the inspection of domestic waste."

Finally, with regard to the consent-to-service provisions, Judge Smith said they "merely placed arduous and unnecessary burdens on those who shipped solid waste into Ohio" and "may be held to discriminate impermissibly against interstate commerce without extended inquiry." This provision, like the fee provisions, is a *per se* violation of the Commerce Clause. Judge Smith observed that Ohio's long-arm statute, the traditional way of ensuring that out-of-state persons will be subject to a state's civil and criminal justice system, would authorize service of process over the same persons and in the same circumstances as this unlawful provision.

#### **Other states with fees**

This most recent decision follows closely *Government Suppliers Consolidating Services v. Bayh*, IP-90-303-C (S.D. Indiana, Dec. 27, 1990), where a federal District Court struck down a "tipping fee" provision that placed a variable fee on MSW generated outside Indiana that depended on the total cost that would have been charged if the waste had been deposited at the facility nearest its point of generation.

More recent, an Alabama state court held unconstitutional on Commerce Clause grounds a law which imposed

a \$72-per-ton charge on all hazardous waste generated outside the state and landfilled at commercial hazardous waste disposal facilities: *Chemical Waste Management v. Alabama Dept. of Revenue*, CV-90-1098-PH (Montgomery Cir. Ct., Feb. 20, 1991). As a general rule, the U.S. Supreme Court has held that a tax is subject to closer scrutiny than a regulation because the tax couples a "greater, or more threatening burden" on interstate commerce with "the lesser need to a state of a particular source of revenue." *Freeman v. Hewitt*, 329 U.S. 249, 253 (1946).

**Judge Smith observed that when the state discriminates against interstate commerce "without a compelling reason," the legislation is unconstitutional regardless of how slight the burden on interstate commerce or how legitimate the state interest.**

#### **Congress views interstate movement**

In 1991, restrictions on the interstate movement of both municipal solid and hazardous wastes, as well as the imposition of differential fees on out-of-state waste, are likely to be considered as separate legislation and as part of the Resource Conservation and Recovery Act (RCRA) reauthorization package. Indeed, since early February 1991, Congressmen and Senators have introduced bills to grant states the authority to ban out-of-state waste and/or impose differential fees.

Allen Moore, president of NSWMA, testified recently before a House Congressional Subcommittee on the interstate waste movement issue and said, "What we need is a national structure in

which every state and region of the country manages a significant share of the waste generated within that state or region." He discussed a recent NSWMA study of interstate movement of solid waste revealing that substantial volumes of solid waste currently move interstate reflecting historical, logical and desirable disposal arrangements. Indeed, about 15 million tons of solid waste moved in interstate commerce during 1989-1990, and this is about 8% of the estimated 180 million tons of solid waste generated annually in the United States. At least 133 different, regular interactions occurred when solid waste moved between two states; 43 states plus the District of Columbia exported some solid waste for disposal while 42 states imported some for disposal.



said Chuck McDermott, WMI's director of government affairs. "For waste disposal facilities, in contrast, we essentially have set a zero-emissions standard."

McDermott said "the waste management system in this country protects human health and the environment as effectively as any industrialized nation in the world." Public concern has focused on off-site commercial hazardous waste disposal facilities, even though they handle only 3 percent of the waste generated.

WMI's hazardous waste landfill in Emelle, Ala., where most of the residents are black and poor, has often been cited as an example of discriminatory siting. WMI argued that when its subsidiary, Chemical Waste Management, acquired the site in 1977, the area was "struggling with illiteracy and infant mortality rates" among the highest in the nation. The landfill brought revenue into Sumter County, improving schools, improving health care and reversing the rates of infant mortality and illiteracy, McDermott said.

The Environmental Justice Act, introduced last year in the Senate by Al Gore and in the House by Rep. John Lewis (D-Ga.), enjoys the support of WMI and environmental activists. Lewis is expected to re-introduce the bill, which would identify communities bearing the heaviest pollution burdens, later this month.

### U.S. Judge Again Rules For Private Haulers in Flow Control Case

A federal judge in Montgomery, Ala., this week denied a request by the Southeast Alabama Solid Waste Disposal Authority for a new trial in a ruling related to "flow control" ordinances passed by the cities of Headland, Geneva and Ozark.

U.S. District Judge Myron Thompson on March 8 once again ruled in favor of the plaintiffs, Waste Away Inc. and a number of affiliated companies (No. 92-T-642-S).

On Jan. 29, Thompson ruled that public authorities cannot force private waste haulers to carry solid waste to authority-owned landfills. He ruled that restrictions imposed by the Southeast Alabama Solid Waste Disposal Authority on where private companies could transport and dispose of waste violated the Commerce Clause of the U.S. Constitution (SWR, Feb. 4, 1993, p. 35).

(Continued)

### Flow Control (Cont.)

In his March 8 judgment, Thompson said, "It is the declaration of the court that the representative ordinances passed by defendants Headland, Geneva and Ozark pursuant to the user contracts with defendant Southeast Alabama Disposal Authority for the collection and disposal of solid waste violate the Commerce Clause in the United States Constitution."

The judge further ordered costs to be taxed against the defendants.

Other flow control cases are being argued across the country. The 8th U.S. Circuit Court of Appeals in Minneapolis on Feb. 18 also struck down as unconstitutional counties' attempts to ensure waste streams for their own facilities by prohibiting waste from going to facilities that are privately owned (Waste Systems Corp. v. Marin and Faribault counties, No. 92-1642).

A copy of Thompson's judgment and order (4 pp.) may be obtained through the Business Publishers Document Service. The document code is 0065. A copy of the 37-page Jan. 29 ruling also may be obtained by noting document code 0019. A copy of the 8th Circuit ruling (15 pp.) is available by noting document code 0050.

**COPIES OF DOCUMENTS** identified in SWR by a four-digit code may be purchased through the Business Publishers Document Service by calling (800) 665-4785 from a touch-tone phone and entering the document code when requested. You may choose to have the document delivered by FAX, mail or Express Mail. You will be billed \$10 per call, regardless of the number of documents ordered, plus \$1 per page. Express mail will cost an additional \$15. The last seven digits of your Business Publishers, Inc., account number will be needed. It is located on the address portion of the envelope containing your newsletter. If you do not know your account number, please ask for a customer service representative.

**SUPERFUND LIABILITY** — Rep. Christopher Smith (R-N.J.) has reintroduced as H.R. 540 his bill, originally filed in 1991 (SWR, May 25, 1992, p. 204), shielding municipal solid waste generators and transporters from Superfund liability. He also introduced a bill, H.R. 541, limiting liability to 4 percent of total cleanup costs.

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**CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**

**POLICY, RESEARCH AND TECHNICAL ASSISTANCE COMMITTEE**  
**APRIL 7, 1993**

**AGENDA ITEM 5**

**ITEM:** Review of the Report "Science and Technology Research Priorities for Waste Management in California" by the California Council on Science and Technology in Relation to Current Board Research and Development Activities

**BACKGROUND:**

Public Resources Code section 42650 authorizes the Board to establish a comprehensive research and development program. In order to develop the program, the California Integrated Waste Management Board (Board) entered into a Memorandum of Understanding with the California Council on Science and Technology (CCS&T) in Spring 1992 to assist the Board in identifying its science and technologies research priorities, and developing a method to objectively evaluate research proposals, under Contract No. CWM-C060.

To accomplish this task, the Council appointed an Independent Panel of Experts (Panel). The Panel was charged with identifying research priorities to implement all tiers of the integrated waste management hierarchy, and to develop a ranking system by which specific research concepts could be evaluated for funding.

The Panel presented its determinations in a final report on November 19, 1992. The Board accepted the report, entitled "Science and Technology Research Priorities for Waste Management in California", on January 27, 1993, and agreed to investigate means by which the Panel's recommendations may be implemented. This agenda item represents the initial analysis of the report, as the next step in developing the Board's research agenda.

**ANALYSIS:**

The Panel's work is important. It provides the Board with direction on what research gaps the Board could assist in filling, and a method to more systematically allocate contract, grant, or personnel resources for research based upon scientific merit and the integrated solid waste management hierarchy. It is a framework from which the Board's research agenda can be built.

The study, undertaken by the Panel, was based on the assumption that the Board would have at its disposal designated funds for

research. The study was limited to the development of procedures and prioritization of research related to Board-selected priorities according to the tiers of the waste management hierarchy. The report comprises six chapters and a supplement. The supplement includes a brief discussion of three topics not specified by the Board, but deemed important by the Panel for the implementation of its recommendations.

Three main areas are discussed in the report:

- A. Considerations. What baseline considerations are necessary for accomplishing the task of recommending and prioritizing research areas? This is discussed in chapters 2, 3, and the report supplement.
- B. Research Recommended by the Panel. What priority research areas/topics should the Board pursue and support? Discussed in chapters 4 and 5.
- C. Research Prioritization and Selection. By what criteria shall general research topics be prioritized? How will individual research proposals and Principal Investigators (PI) be rated? Discussed in chapter 6.

#### A. CONSIDERATIONS

According to the Panel, there are 11 important considerations discussed for prioritizing and managing research. These factors form the basis on which a sound research agenda should be planned.

1. Duplication of past research and errors must be avoided.
2. Board funds should be used for new and original research studies. The Panel recommended that 20-25% of the Board's research budget on science and technology be allocated to innovative research.
3. Investigator competence should receive high priority.
4. Establishment of a Board research program manager(s), a "distinguished" peer review group, and an in-house Research Committee appointed by the Deputy Director for Research and Technology Development, for the management of research and issuance of RFPs.

5. Research awards should be limited to California-based individuals and organizations.
6. Co-funding of Board research should be sought.
7. Progress of the Board's research program should be monitored, three years after program initiation.
8. Maintain staff competence through involvement with the research selection process, as well as the actual performance of research. Liaison with university, not-for-profit and industry research groups is encouraged to further staff research expertise and knowledge. Continuing education in integrated solid waste management is also suggested for practicing professionals.
9. The Panel suggests the establishment of a group of advisors/experts that will function as an extension service to assist city and county jurisdictions to define and troubleshoot integrated waste management problems.
10. The standardization of definitions and methodologies in waste characterization.
11. The development and use of a rapid access system to pertinent publications of all types.

**B. RESEARCH RECOMMENDED BY THE PANEL**

The Panel recommends that "...the Board fund those science and technology research projects that promise the earliest and most cost-effective returns in the implementation of Board goals". Listed below are nine "programmatic research areas", based primarily on the Panel's report, as selected by staff. (The terms "programmatic research area" and "priority research objectives", used below, are borrowed from the US EPA's *Municipal Solid Waste Research Agenda*, 1991)

## PROGRAMMATIC RESEARCH AREAS

The descriptions of the nine programmatic research areas are based on the Panel's report.

### 1. Modelling

This area targets research on the development and application of computer models in order to assist decision-makers in assessing the proper choice and effect of technologies and policy changes in integrated waste management. Two basic approaches to modelling are recommended: 1) Develop models which can be run by competent personnel who are not necessarily computer programmers, 2) Develop a set of "software tools" customized by the user for a specific application. The latter will require users with adequate computer skills. Research must also provide for updating models with current regulations and policies, and training of Board staff and users.

### 2. Source Reduction

Research in source reduction should focus on development, evaluation and implementation of strategies involving changes in product manufacture, design and use, and consumer purchasing and product disposal behavior. Recommendations are made for priority research in two areas: Packaging (constituting 30% of MSW), and yard waste reduction (constituting 15% of landfill waste stream). While it is recommended that packaging be researched by industries and businesses responsible for the product, independent research on packaging innovations is encouraged for the Board staff. Research on incentives for implementation of source reduction strategies is also recommended.

### 3. Materials Re-use and Recycling

Research in this area should focus on the innovative and practical use of waste materials (e.g., tires, carpets, wastewater treatment plant sludges, combustion ash), techniques for best recovering and processing recyclable materials, and the direct re-use of recyclable materials.

### 4. Composting

The development, quality standard, application techniques, and management of health and nuisance problems of composting are considered in this area. Priority research is recommended to

understand the relationship between quality of feedstock and resulting compost.

**5. Transformations**

Waste transformation is defined to include 1) waste incineration with or without energy production and cogeneration, 2) production of liquid or gaseous fuels for use in transportation applications, electricity generation or other heating services, and 3) novel processes that involve biological or chemical transformations including combustion.

CCS&T does not recommend Board funding research grants in support of WTE and RDF technologies, however, research proposals for novel transformation techniques are recommended.

**6. Landfilling - Residual Disposal**

Landfills are essential as there is no "satisfactory" replacement for disposing of residues that are beyond redemption, says the Panel. The Panel recommends that high priority be given to the control of landfill moisture content and the vegetative control of infiltration of rainwater or irrigation water on landfills. Research in these main areas would help in resolving current regulatory issues, and guidance in landfill design, operation and closure. (Other non-priority topics are listed in the appendix B-26.)

**7. Environmental Monitoring**

This area was not examined in detail by the Panel because of time constraints. There is no doubt of the importance of monitoring of any and all emissions especially for ascertaining compliance with regulations and law enforcement. However, the Panel recommends that the Board not support further research on automated diagnostic systems to detect pollutants and emissions. This is because of the high costs and long lead times involved, the availability of research support from federal sources, and the singular level of competence available in California. This competence includes outstanding research groups within California that are continually developing new and improved measurement techniques, and a National Science Foundation-supported extensive evaluation of monitoring and diagnostic techniques. The latter emphasized the development of low-cost, on-line, automated diagnostic systems for continuous emission measurements (CEM).

The Panel recommends that the Board assign one or two staff members with special competence in this field to serve as in-house advisors, to interface with the research communities (universities, national laboratories, private sector), and to ascertain requirements and follow new developments in environmental monitoring. A workshop involving experts on diagnostics is also recommended as a first step to assist the Board in assessing its environmental monitoring needs.

#### 8. Health and Safety

This area was not examined in detail by the Panel because of time constraints. A procedure similar to that recommended for environmental monitoring is recommended. Research done by competent epidemiologists in California is justified. These persons should have the responsibility of serving as advisors on call to Board Members. Certain issues of risk may be specific to California and may merit selective support by the Board.

#### 9. Policy Research

Two main projects, Generator-specific waste strategies and Incentive-based strategies, are described in the supplement to the Panel's report. Both have the potential to increase the amount of source reduction and recycling, and accomplish integration of economics and markets into the environmental strategies.

#### PRIORITY RESEARCH OBJECTIVES

The specific research topics recommended by the Panel have been incorporated, by staff, as "priority research objectives" for each programmatic research area. Specific research projects have been appropriated accordingly within their research objectives. (As mentioned above, the terms "programmatic research area" and "priority research objectives" are borrowed from the US EPA's *Municipal Solid Waste Research Agenda*, 1991)

The *numerical order* of these nine priority research objectives is not significant at this time. However, when the final research agenda is adopted by the Board later this year, staff expect that the nine objectives will be ranked or grouped in order of importance.

**1. MODELLING**

**PRIORITY RESEARCH OBJECTIVE**

- o To develop and maintain computer models for assessing waste diversion and reduction strategies, qualitative and quantitative analyses of waste composition, and effects of policy changes on the economics of integrated waste management.
  - . Develop a statewide model for waste management.
  - . Update existing Board-sponsored Solid Waste Financial Model.
  - . Develop an integrated statewide econometric waste management model (i.e., integrate waste management operations into California economy).

**2. SOURCE REDUCTION**

**PRIORITY RESEARCH OBJECTIVES**

- o To identify and develop strategies for reduction of yard waste.
- o To determine and evaluate implementations of strategies for source reduction of waste generated in consumer products.
- o To identify and evaluate incentives for consumer/producer (small business and residences) to invest in source reduction.

**3. MATERIALS REUSE AND RECYCLING**

**PRIORITY RESEARCH OBJECTIVES**

- o To determine, develop and evaluate the innovative use of waste materials.
  - . The use of recyclables in construction materials.
  - . Improved technology for processing plastics.

- o To determine optimal recovery and processing systems of recyclable materials.
  - . Optimization of the recovery of recyclable materials.
  - . Development of design and operational standards for MRFs.
- o To determine, evaluate and demonstrate (industry co-sponsored) feasibility and commercialization of re-use technologies.

#### 4. COMPOSTING

##### PRIORITY RESEARCH OBJECTIVES

- o To understand the relationship between feedstocks (input) and resulting compost (output), in order to establish compost products standard.
- o To assess application and retention techniques of compost and mulch on slopes.

#### 5. TRANSFORMATIONS

##### PRIORITY RESEARCH OBJECTIVE

- o To determine novel biological and chemical transformation techniques.

#### 6. LANDFILLING - RESIDUAL DISPOSAL

##### PRIORITY RESEARCH OBJECTIVES

- o To assess the effects of moisture control in landfill management.
  - . Conduct a literature review of the application of "wet" and "dry" operations in landfill management.
- o To assess the effects of vegetative control on infiltration.

7. ENVIRONMENTAL MONITORING

PRIORITY RESEARCH OBJECTIVE

- o To determine and evaluate environmental monitoring techniques for emissions, effluent and leachate through collaborations with non-Board, outstanding research groups in California.

8. HEALTH AND SAFETY

PRIORITY RESEARCH OBJECTIVE

- o To assess public health effects and risks in response to integrated waste management strategies.
  - . The development and implementation of safe management procedures for the disposal of medical wastes in California

9. POLICY RESEARCH

PRIORITY RESEARCH OBJECTIVES

- o To identify, develop and evaluate solid waste generator-specific strategies that will maximize the amount of cost-effective source reduction, recycling and composting for each generator.
- o To develop and evaluate new cost-effective, incentive-based strategies to source reduction and recycling. (Traditional strategy relies on a command and control approach to federal and state legislation and regulation).
  - . Investigate existing incentive-based programs for industrial solid waste, municipal solid waste, and construction debris/waste.
  - . Examine user-based incentive programs including the following:
    - . A program to reduce the average per capita waste generation rates through the use of a marketable permit program.

- . A marketable permit program to implement the recycling goals of AB 939.
- . A program to develop differential business tax rates based on the amount of recycling or source reduction which the company achieves.
- . A program to develop differential property taxes for homes that recycle or reduce their disposed waste by a given percentage.
- . Differential business tax rates for companies using recycled materials.
- . Differential water rates for companies using large volumes of compost or reducing their green waste.
- . Information disclosures to the public, required of certain types/sizes of businesses on their waste generation and recycling rates, and waste management methods.

#### C. RESEARCH PRIORITIZATION AND SELECTION

Chapter 6 of the Panel's report discusses the prioritization of research topics in order to establish a research agenda, and a proposed system to rate research proposals.

##### 1. Prioritization of Research Topics.

The Panel proposed seven criteria by which to develop and prioritize a research agenda for the Board. These criteria are (also see Table 6-1 of the Panel's report):

- o Percent of waste stream affected
- o Cost-effectiveness
- o Importance of research to technical understanding (i.e., is the research a variation on an existing theme, or a new research approach?)
- o Innovative solution of waste management problems
- o Solves near-term problem
- o Solves far-term problem
- o Public acceptance

The Panel assigned a weighting factor to each of the seven criteria, and then proceeded to evaluate a short list of "sample" research topics (12 items) they generated for the report (see Table 6-2 of the report). Using their rating system, the Panel scored "application of compost on slopes" as the most important of the 12 sample research topics to pursue.

The Panel noted that the weighting factors for the seven criteria can be changed to suit the needs of the Board, and that the Board could add or delete criteria as it sees fit. Staff will propose a set of weighting factors for the Committee's consideration in the near future.

Staff have two recommendations to change the criteria.

i. Drop Public Acceptance as a Criterion.

Staff believe that the rating factor titled "Public acceptance" is too subjective and difficult to measure and use in a set of decision criteria. Staff believe it may be an impossible task for the Board to determine whether or not a given research topic is acceptable to the general public. The state's 30 million residents could have as many different opinions as to what are the most important research topics to pursue.

ii. Add Reduction of Threat to Public Health, Safety and the Environment as a Criterion.

Staff believe that an additional criterion, "Reduces threat to public health, safety and the environment", is important to add to the list of criteria. Protection of the public health, safety and the environment is part of the mission of the Board.

If the Committee accepts staff's two recommendations, then a revised set of criteria would be:

- o Percent of waste stream affected
- o Cost-effectiveness
- o Importance of research to technical understanding
- o Innovative solution of waste management problems
- o Solves near-term problem
- o Solves far-term problem
- o Reduces threat to public health, safety and environment

## 2. Rating Research Proposals.

The Board typically receives research proposals from three general sources:

- o Board staff, in the course of the annual BCP and contracts processes;
- o unsolicited research proposals from academia, research institutions, and the private sector; and
- o solicited proposals in the form of RFPs announced to the public.

The system for rating research proposals recommended by the Panel is a two-step process:

1. First, a set of pass-fail criteria must be met by each proposal.
2. Second, the successful proposals are next rated for their scientific or technical merit, using a three-part formula.

These two steps are discussed below.

### Step 1. Pass-Fail Criteria.

The Panel offered a set of seven pass-fail criteria by which to initially rate solicited or unsolicited research proposals: A successful proposal must:

- o relate to the short and long-term missions of the Board;
- o represent a significant potential advance of the state-of-the-art;
- o be lead by a Principal Investigator (PI) who is a permanent resident of California (or, alternatively, no California investigator is qualified to lead the research);
- o propose to conduct the research in California;
- o be commensurate with the requested level of support;
- o be commensurate with a time frame determined by the Board; and

- o not be inappropriate for funding.

Staff offer the following comments on the seven pass-fail criteria:

- o Short- and long term missions. The Board adopted a 7-point mission statement in 1993. If the Board chose, the mission statement could be used, in part, to rank research proposals. However, neither the Board's mission statement, nor its list of priority issues and goals, distinguish between short-term and long-term goals. When the Board's strategic plan is complete, we may have a time frame which describes what types of research need to be conducted in the short-, medium-, and long-term.
- o Significant potential advance in state-of-the-art. This criterion depends on Board staff's abilities to track and determine what is the "state-of-the-art ". Alternately, we may use competent independent referees or an external peer-review panel to assist in this determination.
- o PI as California permanent resident. This criterion may discourage out-of-state scientists, experts in their field, from submitting research proposals to the Board, because they know from the outset that they will not be eligible. Recently, US EPA also has solicited the Board to co-fund ~~research which may be conducted only in other states, or in California and other states simultaneously.~~ The criterion may discourage US EPA from seeking such co-funding from the Board.
- o Conduct research in the state. Generally, this criterion is appropriate. However, there is the potential for research projects to be concurrently conducted both in and out of the state. Also, certain research feasibility studies may have to be based on research activities outside the state. For example, the Board's on-going landfill mining feasibility study is based on research and experiences in other states because landfill mining has not occurred to date in California.
- o Research support commensurate with research project. Research budgets should not be too large, too small, and should fit the depth, breadth and timeline of the project. The necessary human resources to complete the research on time and on budget should be demonstrated by the PI.

- o Research commensurate with Board time frame. The Board may have need for research to be completed within a given time frame, in order to meet a statutory, regulatory, or decision-making deadline.
- o Research not inappropriate for funding. Board staff will have to develop a set of objective measures to define what is, or is not, "appropriate". One may refer to the Board's list of priority issues and goals embodied in the strategic plan for guidance on formulating this set.

**Step 2. Numerical Ratings for Scientific or Technical Merit.**

Once a research proposal has met all seven pass-fail criteria, the Panel next recommends that a proposal be ranked according to a simple three-part formula which includes:

- o Ranking of PI competence. Such a ranking could be made by Board staff and a peer-review panel (where grant applicants, peer-review panel members, or both, remain anonymous).
- o Quantitative ranking of the research proposal itself. The ranking may be done by Board staff, and/or competent independent referees or a peer-review committee.
- o Augmentation factor. The Panel recommends that research proposals could have their final score augmented (raised) if they contain:
  - (i) Previously-secured co-funding.
  - (ii) Other state goals. Some examples of other important state goals may be: water conservation, soil conservation, erosion prevention. Cal/EPA (Agency-wide) goals could also be included here.

Staff believe that this formula should be used by the Board. Staff also suggest an additional criterion for augmentation:

- (iii) Research proposals which are integrated and multi-media in nature. Some examples are proposals which address both waste collection and transport, or which address both groundwater protection and air pollution prevention.

**STAFF COMMENTS:**

The establishment of a research program at the Board would help the Board strengthen its decision-making ability in the arenas of permitting, enforcement, market development, standards development, and integrated waste management planning. New types of solid waste facilities and processes come to the Board for approval. Research can provide an understanding of what constitutes the state-of-the-art in a given facility design or process design, and give the Board a context by which to understand designs which are cost-effective, environmentally sound, and technologically optimal. Research can provide insight into enforcement matters, such as the optimal technologies for the remediation of groundwater contamination or landfill gas and leachate control.

Research (e.g., high-level survey research, econometric models) can provide sound grounds upon which to design and carry out market development projects. Research already provides a backbone to the Board's technical regulations, with research work being cited in the Statements of Reason that accompany regulations. Research can help clarify important planning and policy issues, such as the effectiveness of regionalization, market development, railhaul, MRFs, regional landfills, landfill mining as a secondary materials reclamation strategy, to name a few topics.

The Legislature recognized the benefits of solid waste management research when it approved the Integrated Waste Management Act of 1989, including PRC section 42650, which authorized a research and technology development program at the Board.

The Panel's report further strengthens the Legislature's foresightedness in supporting the need for a research agenda at the Board, and offering their recommendations as to where the Board should spend its scarce resources in support of basic and applied research.

Staff are pleased to have the Panel's report as a guiding document. The report highlights some research topics which the Board is actively investigating or funding now. Examples include: compost facility design to meet specific compost quality standards; medical wastes generation and management practices; alternative landfill cover materials; pavement design and standards for rubber-modified asphalt made with used tires;

reduction and reuse of metallic discards from appliances; optimal landfill gas monitoring probe designs; waste generation rates database; plastics waste management alternatives.

The report also identifies other research areas which the Board has not, to date, been involved in. Examples are: application and retention techniques for compost and mulch on slopes; mass balance model of yard waste water and energy use and biomass production; novel biological and chemical transformation techniques such as enzymatic hydrolysis and fermentation; hydrolysis to recover such compounds as methanol, synthetic oil, and cellulose acetate; control of landfill moisture content.

Staff request the committee's guidance on several critical questions to which we need answers before we can properly develop the next phase of the Board's research agenda. Hence, staff offer several recommendations below, and seek the committee's responses:

Questions for Discussion:

1. Context of Research Agenda and Available Research Budget. As recommended by the Panel, staff seek to have 20-25% of the Board's research and development budget set aside specifically to support innovative research, regardless of the size of the overall Board budget. This will demonstrate the Board's commitment to innovative research, and is appropriate given the Legislature's current interest in the Board's research and development program. Does the committee concur?
2. Funding Flexibility. Staff believe maximum flexibility should be sought in the contracts process, or outside the contracts process (e.g., creation of a research grants program), to support research and technology development projects. Does the committee concur? What suggestions does the committee have in this regard?
3. Link to Board Strategic Plan. Staff believe the forthcoming implementation plan of the Board's Strategic Plan should be amended as needed to reflect the final version of the research and technology development agenda. Does the committee concur?

4. Link to Board Market Development Plan. Staff believe that the research agenda and the Board's Market Development Plan should be as closely linked as feasible. Does the committee agree? How should the two activities interact?
5. California-only Research and Researchers. Staff believe the Board needs to have great flexibility in its decisions about whose research projects to fund, and where that research should take place. Thus we recommend that PIs can have their base in any state or country, though a preference could be given to a Principal Investigator who is a Californian. Similarly, staff believe that research funded by the Board could be conducted outside the state if necessary, though research sites in California should be given preference where practical. This approach engenders the maximum flexibility and can spark greater competition, bringing the finest researchers to bear on California's research needs. Does the committee concur?
6. Initial Draft Research Agenda. Staff propose to return to the committee in Summer 1993 with an initial draft research and technology development agenda for the Board, prepared in cooperation with Executive Office and the line divisions.

As noted above, staff propose to return to the committee in Summer 1993 with an initial draft research agenda, a proposed ranking of research priorities, and a discussion of the administrative options for developing a cohesive research program within the Board.

ATTACHMENTS: none

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