

User Needs Assessment Report

June 1, 2009

Executive Summary

An essential part of the California Integrated Waste Management Board's (CIWMB or Board) Recycling and Waste Management Infrastructure Project (Infrastructure Project) is the solicitation of feedback from interested parties. Outreach efforts included developing a project information website that incorporated an on-line survey, conducting targeted telephone surveys, convening a Technical Advisory Committee, and meeting with CIWMB staff. The results of this intense listening effort are detailed in this report. A complete summary of stakeholder feedback is included in the body of this report. Some of the key points raised by stakeholders are summarized below.

- Stakeholders strongly support the projects goals and the project vision.
- More than 50 percent of survey respondents rated as “very important” the goals of improving the CIWMB’s infrastructure inventory information system, launching a map based inventory webpage of facilities, and establishing a system to regularly update the infrastructure inventory.
- A slightly smaller percentage of survey respondents, 37 percent, indicated that developing a model to estimate future waste generation and facility needs was “very important”.
- While there is some interest in the project providing certain market and pricing information, keeping this type of information current on the project website is beyond the project’s scope, but the website should be designed to accommodate links to market and pricing information.
- The project should address capacity issues by identifying the “permitted” capacity of facilities where available, identifying best available capacity information for un-permitted facilities, and the project should attempt to identify the current rate of capacity utilization through research and surveys.
- The project should allow facilities to report more than one activity being conducted at an individual location (i.e., both recycling and solid waste transfer can be conducted at one facility). Facility categories used in the inventory should include “Emerging Technology Facilities” to identify new types of waste management facilities like anaerobic digestion.
- The project should initially focus on collecting and presenting basic facility information assuring that a comprehensive list of recycling and waste management facilities in the state is compiled.
- To protect sensitive information, confidentiality concerns need to be carefully addressed and the projects confidentiality policy must be strictly adhered to.
- All data fields should have data-tags indicating when information was last updated.

- The infrastructure inventory information system should present information to users through a map allowing users to drill-down to find more facility details.
- The principal units for aggregating information should be at the county-level, if this can be presented without compromising confidential information. Where possible, users should be able to create their own regions of contiguous counties.
- The project should gather basic information on the amount of material that flows from facility type to facility type to the extent such information is provided by owner/operators or third party sources. Material flows should be considered on a statewide or regional aggregate basis because individual facilities regularly and rapidly change where materials are sent to or received from.
- Data gathering should begin with known data sources, making use of trade groups and industry sources where appropriate. Local governments and Local Enforcement Agencies will be valuable sources of information, too. The initial data gathering should focus on limited information looking to build a foundation for future data gathering efforts. Certain information may need to be extrapolated to fill information gaps.
- As part of the data gathering effort, facility owner/operators should be asked to update/verify inventory information by logging on to a secure CIWMB website.
- The model should use current capacity and waste generation information to generally predict future capacity shortfalls. As the model is developed, a natural result of the analysis will be the determination of the variables that significantly affect waste generation. The model should accommodate county and regional analysis if possible, so that users may assess areas where certain facilities may be needed in the future. Market forces will determine where facilities are actually built in the future.
- General support was expressed for the model to have a limited public interface, with the CIWMB maintaining control of the model with expanded capabilities.
- In general, support was expressed for the infrastructure inventory information to be updated once each year. In the future, continuous updating through self reporting or links to other CIWMB databases may be possible.

Introduction

The California Integrated Waste Management Board (CIWMB or Board) contracted with R. W. Beck, Inc. (R. W. Beck) to conduct the Recycling and Waste Management Infrastructure Project (Infrastructure Project). The project aims to provide, by May 2010, a centralized webpage within the Board's existing website that contains information on California recycling and solid waste management facilities. The Infrastructure Project will include developing a comprehensive inventory of recycling and solid waste management facilities and a model that will predict infrastructure capacity gaps under different future scenarios. A guiding principle is that the project should be driven by the needs of stakeholders, including private sector waste management firms, local waste management agencies and CIWMB staff. This paper summarizes

the key findings from an ambitious stakeholder engagement effort designed to satisfy this principle.

Using Board direction and the request for proposal document as guides, CIWMB and R. W. Beck staff conducted preliminary research on five key issues:

- The project goals;
- Targeted types of information and how to present it;
- Approach to gathering the information;
- Development of a model for projecting capacity gaps; and
- Options for updating and maintaining the system

The project team then prepared a Project Overview and Vision (project vision). This short paper was posted to a public website (<http://www.ciwmb.ca.gov/Infrastructure/Project/>) along with links to more detailed research results, providing a preliminary vision for each aspect of the project. A copy of the Project Vision is provided for easy reference in Appendix 1.

To help guide the project, a Technical Advisory Committee (TAC) comprised of representatives of private sector recycling and waste management firms, public sector recycling and waste management agencies, manufacturers that use recycled content, advocacy groups, and other interested parties was formed. The TAC provided significant input to the project team during the user needs assessment. A list of TAC members is presented in Appendix 2.

This stakeholder needs assessment report is based on a broad range of feedback on the project vision obtained through three methods:

Project website and on-line survey – The project website provided a link to an online survey that was accessible to the public from February 2 to March 15, 2009. More than 11,000 e-mail notices were sent to stakeholders encouraging them to take the survey, resulting in 197 completed surveys. Top respondent groups were: private sector facility owner operators (25 percent of respondents), local government (18 percent) and state government (17 percent). A complete presentation of the survey's quantitative results is provided in Appendix 3.

Individual interviews – Individual interviews were conducted with 28 individuals including TAC members, a sampling of on-line survey respondents, and others representing significant groups. Interviewers first reviewed the project vision and then asked a series of questions about the key issues above. A list of interviewees is presented in Appendix 4.

Stakeholder work sessions – R. W. Beck facilitated three work sessions where individuals were encouraged to provide input into the Infrastructure Project process. The three groups were:

- CIWMB Executive Management staff
- CIWMB Staff and Managers
- The Technical Advisory Committee

All told, substantive feedback was received from more than 200 individuals representing the main stakeholder groups with an interest in the project. The following sections summarize the ideas that appeared to be most prevalent and most on-point for developing final products that

will best serve the needs of most of the users of the final Infrastructure Project. No attempt to comprehensively list every comment is made. The needs results will be further evaluated by the Contractor and Board staff to update the project Vision Paper and determine the infrastructure factors and characteristics that can be incorporated into the data collection, modeling and display phases of the project.

Project Goals

Stakeholders were asked to respond to one broad issue to determine their views on the project goals, described below.

Issue: Is the project needed and why?

Initial approach: The project's goals are presented in the project vision and involve: compiling information and developing CIWMB webpages that provide easy access to recycling and waste management infrastructure information, developing a model to help project future disposal generation, and recycling and waste management capacity shortfalls (but not future waste management capacity additions) under a range of scenarios, and creating a system where this information is kept updated.

Discussion: In general stakeholders expressed broad support for the goals presented for the project. A few comments, mainly from private sector interests, indicated a desire for the project to provide a range of market related information (e.g., maintaining constantly updated materials pricing information and market trend information) that is beyond the scope of the project. Survey respondents strongly supported several of the project's goals: 52 percent of respondents rated improving the CIWMB's infrastructure information systems as "very important" and 23 percent rated it "somewhat important," 52 percent rated launching a map-based inventory webpage of facilities as "very important" and 26 percent rated it "somewhat important," and 55 percent rated establishing a system to update the information as "very important" and 25 percent rated it "somewhat important." A smaller percentage, 37 percent, of respondents indicated that developing a model to estimate future waste generation and facility needs was "very important," with 23 percent rating it as "somewhat important," and 20 percent rating it "neutral/no opinion." This relatively lower level of support may indicate that fewer respondents believe the model will be directly useful to them than the infrastructure inventory. Alternatively, the lower overall support for model development may be due to the fact that it is relatively more complex and difficult to understand than the other project goals.

Significant comments:

Website must contain accurate data and be kept up to date. Numerous comments were received from stakeholders indicating that for the website to be useful to the public it must have accurate and up to date information. Commenters expressed concern that certain existing recycling and waste management information websites contain old, or a mix of new and old, information and that finding information is often challenging. To address this confusion, several commenters suggested having "tags" on all data indicating when an item was updated and by whom with some indication of how accurate different data points are.

Desire for certain market and pricing information. Several commenters indicated a desire for the Infrastructure Project to contain real-time information on prices and other market information. The level of effort to support maintaining a marketing database appears to be beyond the scope of this project. During the work sessions, it was discussed that prices can change quickly and the challenges of maintaining updated pricing information could be contradictory to the goal of assuring accurate information on the website.

Integrating the project into CIWMB and local information management efforts will help ensure the project supports California recycling. It was suggested that by making certain information available to market participants, the project website will help promote recycling in the state. Additionally, several commenters indicated that if local government websites were linked to the Infrastructure Project website it could promote regional recycling while reducing the demand on local government to answer recycling inquiries. Some suggested that the system should be constructed to allow and encourage local governments to use the site as a platform for gathering and managing data on their local facilities.

Capacity of processing facilities is a significant issue to consider, and it can be affected by market conditions. Capacity was raised as an issue to consider in the TAC meeting and the CIWMB work sessions. There are some challenges in managing this issue. Capacity for disposal facilities is set by permit, and can be increased with permit modifications. However, maximum capacity is not always used. A facility's capacity can adjust to changing market conditions. Three commenters expressed complementary concerns that available capacity or lack of capacity should not be used to block the development of new facilities, compel jurisdictions with capacity to accept waste from external sources, or as an excuse not to implement new diversion programs. Several comments were made that the optimum goal for the Infrastructure Project should be to assess and report the current recycling and waste management capacity in the state.

Take-away: (1) The project goals appear to be supported by project stakeholders. (2) It is important that accurate information be presented in a user-friendly system. (3) A clear understanding of "capacity issues" must be provided by system developers to its users. Infrastructure capacity within the scope of this project will focus on two types of capacity; permitted capacity (as indicated in permits) and identified capacity for unpermitted facilities, as well as the current rate of utility of that capacity. For processing facilities current capacity means the annual amount of material that a facility can process under existing facility conditions. For final disposal facilities, current capacity means the quantity of material a facility can accept from the current time until the facility must close because it is full as indicated by its operating permit. Capacity information obtained by project team data gathering will be listed in the infrastructure inventory. (4) Certain stakeholders expressed their desire for the project to perform tasks that are beyond what can feasibly be conducted within the time and budget constraints of the project. For example, the project will not be able to incorporate dynamic market and pricing information, but the project website will include internet links to sites that can provide this information.

Targeted Types of Infrastructure Information

The information targeted by the Infrastructure Project includes the types of facilities, types of materials, type of data gathered and reported, and the geographical boundaries used to aggregate and report the results. Feedback on these issues is summarized below.

Issue: How should facilities be categorized and defined?

Initial approach: Preliminary facility categories were developed generally following the existing definitions for CIWMB regulated facilities and the types of recycling and recycled content manufacturing facilities identified in California Recycling Economic Impact studies.

Discussion: In general commenters were supportive of the facility types outlined in the project vision. In several interviews and during the TAC and CIWMB Executive Management work sessions, there was significant discussion about the facility definitions related to conversion technologies, emerging technologies, and energy recovery from waste. Survey responses about the usefulness of the proposed facility categories was 30 percent “very useful,” 37 percent “somewhat useful,” 17 percent “neutral/no opinion,” and 5 percent “not useful.”

Significant comments:

Conversion technologies and other future waste management options need to be added to the facilities list, and the definitions must remain flexible because these are evolving issues. During the TAC work session and in several interviews, the inclusion of an “emerging technologies” category under the composting facility heading was suggested to accommodate new technologies such as anaerobic digestion. This sentiment was countered with the idea that that outside forces (e.g., Air Board regulations) may affect which technologies get implemented in the future. Stakeholders were also concerned that the choice of how to classify certain controversial technologies could pose the appearance of a policy bias, since these issues are currently under close debate in the legislature.

Avoid rigid facility categories and allow more than one activity to be associated with an individual facility (e.g., MRF and transfer station, or landfill and recycling facility). At the Executive Management work session it was discussed that the processes conducted at a facility may change over time, and the project should not try to narrowly define facilities. At the TAC work session it was discussed that one facility may conduct several different types of operations. One approach mentioned several times is to list the inputs, outputs and processing approaches used at a facility, avoiding to the extent possible arbitrarily assigning any facility to just one category. The project vision includes allowing various activities to be conducted at one location.

A Composting Facility should be called an Organics Materials Management Facility. It was suggested by CIWMB Executive Management that the facility type Organics Processing Facility be used to be consistent with emerging industry trends.

Exports through ports. Two commenters raised issues related to exports that move through the ports to China and other overseas markets, and that the Infrastructure Project should capture this information in some way.

Take-away: (1) Facility types will be updated in the work plan to accommodate emerging technologies. (2) An “Emerging Facility” category will be included in the list of facility types to

accommodate new conversion technologies. Emerging Facilities will be indicated as a separate type of facility differentiated from Conversion Technology Facilities. (3) Facilities types will need to accommodate more than one activity. (4) Need to capture facilities supporting export markets as a potential facility type.

Issue: What material categories should be used?

Initial approach: The preliminary material categories were developed following the CIWMB's existing "category" system. The definitions are similar to those used in California waste composition studies.

Discussion: Very few comments were received concerning the proposed material categories. A few minor changes to the material definitions will need to be considered. Survey responses about the usefulness of the material categories was 30 percent "very useful," 36 percent "somewhat useful," 15 percent "neutral/no opinion," and 5 percent "not useful."

Significant comments:

Allow facilities to define material inputs and outputs on their own terms. Several commenters suggested keeping the site simple by allowing facilities to define their own material categories. Standardized categories would still be needed for modeling and aggregating data, however.

Other materials to consider. In the on-line survey individual commenters asked if items not included in the project vision such as biosolids, spent grease, grease-trap waste, household hazardous waste (HHW) and pharmaceuticals should be included as materials in the infrastructure inventory.

Use industry acknowledged categories where appropriate. It was suggested by project team members that market definitions should be used where appropriate to define the materials type. For example, paper recyclers will better understand the paper category definitions if the Paper Stock Institute (PSI) paper grade numbers are included with the project paper definitions.

Take-away: (1) With the limited interest in biosolids, spent grease, grease-trap waste, and similar waste these materials should not be included in the initial infrastructure inventory but the overall system should be designed to allow additional categories as needed in the future. (2) Paper definitions will be updated to include PSI numbers where feasible and possible industry grading systems for other materials will be researched.

Issue: What information should be gathered and reported for each facility?

Initial approach: The vision for data collection was to target basic facility identification, location, contact, material handling (input/output), and capacity information. At the inception of the project, there was an understanding that sensitive information may be challenging to obtain, and likely may not be publicly reported at the facility level.

Discussion: A significant amount of discussion during the work sessions focused on this topic, as did survey and interview commenters. In response to the survey, the information most respondents indicated should be kept confidential was: types of sources of inputs to facilities (24 percent), current and future facility capacity (21 percent), point of origin of facility inputs (21

percent), theoretical maximum capacity of facility (20 percent), and annual facility throughput by material type (20 percent).

Significant comments:

Begin with readily available public information. A wide range of comments was received concerning the facility information that stakeholders would like to see for facilities in the infrastructure inventory. From all input sources there was acknowledgement that simply making public information (e.g., facility, location, contact, materials managed, etc.) easily available in one location would make the Infrastructure Project valuable. Commenters noted that it would be valuable to have “tags” indicating when a field was last updated.

The Infrastructure Project may need to gather and report different information for permitted and un-permitted facilities. Many stakeholders put forward the idea that permitted facilities are compelled to report certain information to the state that un-permitted facilities are not. Although, there are facilities that have permits issued by agencies other than the CIWMB and information on these facilities may be obtained through other sources. Many private facility operators expressed concerns that it would be difficult, if not impossible for the project team to obtain certain sensitive information for un-permitted facilities because of confidentiality concerns.

Other easily obtainable information. Several commenters offered suggestions for facility information that would be valuable and that would raise few confidentiality concerns.

- If a facility is open to the public or if it limits deliveries to select customers
- The form that a facility accepts incoming material
- Posted gate rates
- Expected life of disposal facilities

Additional information that may be challenging to obtain, but could be valuable. Several comments were received from all stakeholder groups about more sensitive information that they would like to know about facilities.

- Diversion rates for individual facilities
- Quantities and types of material inputs and outputs
- Facility capacity

Start by focusing on limited amounts of the most critical data, but build the system with an eye towards expansion and flexibility. One theme that emerged several times is that the CIWMB should build this infrastructure information system initially to focus only on the most critical information (i.e., an inventory of facilities, information on inputs and outputs and capacity), with other readily available and easy-to-include information also provided. However, many said the system should allow expansion in the future, and possibly be built to encourage others to add data as appropriate.

Confidentiality concerns. A number of facility owner/operators expressed a reluctance to provide what they consider sensitive information. At all three work sessions it was discussed that the importance of confidentiality concerns should not be underestimated in the data

gathering process, and this will affect the information that can be presented for facilities. This issue is discussed further in the data gathering section of this report.

Take-away: 1) The project should focus on collecting and presenting basic information about each facility. 2) Confidentiality concerns must be considered in reporting facility information. 3) Data fields should have tags indicating when they were last updated. 4) The inventory database should start simply with the capability to add more data over time.

Issue: How should inventory information be presented?

Initial approach: The vision is to present information via a web-based map showing facility locations with more detailed information available for each facility available on the site.

Discussion: Comments were received from all sources concerning how stakeholders would like to have data reported. Responses to survey questions about using maps to present the location of facilities categories by type were 54 percent “very useful” and 24 percent “somewhat useful.” Responses to survey questions about presenting basic non-confidential facility information such as address, contact information, types of material accepted, and types of products output were 57 percent “very useful” and 25 percent “somewhat useful.”

Significant comments:

Data should be presented as a map, with searchable feature. In interviews, most stakeholders indicated that a map that would allow “clicking-through” to more detailed facility information was the preferred method of viewing facility inventory information. Commentors requested being able to select for facility type, materials handled, etc. Interviewees and survey respondents expressed a desire to be able to find the nearest facility of each type by city name or zip code.

Tables and download of data. Several interviewees expressed an interest in being able to drill-down to find out more information about an area or facility through queries and drop-down menus. A couple of interviewees requested that material be easily downloaded from the site, and the Bureau of Labor Statistics Consumer Price Index site was offered as an example.

Keep it simple. General comments received from the on-line survey and in the work sessions indicated an overall desire from stakeholders that the information retrieval system should be kept simple and easy to use.

Counties and self-selected regions. In the surveys and in the work sessions, stakeholders expressed a desire to be able to select their county and neighboring counties to access information about recycling and waste management facilities. Additional comments were received from stakeholders indicating their desire for information to be made available by county where possible.

Other regulatory agency boundaries. In the work sessions and in interviews, stakeholders indicated that it could be valuable to know the Air Board or Water Board district where a facility is located.

Major transportation corridors and transportation obstacles should be shown on map. Three interviewees offered the suggestion that transportation corridors link many counties. In other cases, although counties are contiguous, physical barrier, like mountains, keep them from

cooperating on waste management issues. For this reason, transportation corridors, travel times and physical barriers are important map features.

Take-away: 1) Present facility information initially as a map. 2) Allow users to “drill down” and find more details about facilities. 3) Data tables should be easily exportable. 4) Show transportation corridors and obstacles.

Issue: How should the information be aggregated by region?

Initial approach: Certain model output information would need to be aggregated by region to protect sensitive facility data.

Discussion: In interviews and work sessions, stakeholders indicated their understanding of the need to aggregate certain data outputs to protect sensitive issues. Several suggestions were offered for how data could be aggregated and best meet user needs. Survey responses concerning aggregating information by geographic region were rated as “very useful” by 28 percent of respondents, “somewhat useful” by 34 percent, “neutral/no opinion” by 17 percent, and “not useful” by 6 percent. A question asking users to rate the web site feature of aggregating information for facility capacity and throughput so that users could not infer these statistics about any one facility were rated “very useful” by 25 percent of respondents, “somewhat useful” by 27 percent, “neutral, no opinion” by 24 percent, and “not useful” by 10 percent.

Significant comments:

Do not use regions that don't make sense in terms of how materials flow. Specifically, several commenters said using the CIWMB's waste characterization study regions was not a good idea because they have no relation to how waste or recyclables actually move. Because most regions are open to this critique, the notion of avoiding the definition of arbitrary regions was suggested.

Consider transportation corridors and logical linkages. As described above, interviewees expressed a concern that mountains can present obstacles for the movement of goods, so information should be aggregates in a manner that accounts for transportation. Interviewees from rural areas stated their request that if aggregation is necessary, that actual linkages be considered, rather than simple geographical proximity.

Think on the county level. Many comments from various sources expressed a desire for information to be reported at the county level. Interviewees from more urban areas expressed an interest in being able to consider sub-sections of the county in dense metro areas. Several commenters expressed a desire to be able to create their own regional groupings by selecting a number of contiguous counties off of a map.

Take-away: (1) Principal unit of organization for aggregating information should be counties, if this can be presented without exposing confidential information. (2) If possible, allow users to create their own regions of contiguous counties. 3) If there is a need to force counties into regions, look for logical linkages like transportation corridors.

What information is most important to be gathered and analyzed?

Initial approach: The initial project goals focus on facilities and the materials they manage. A hierarchy of data gathering and analysis that the Infrastructure Project could accomplish that was discussed at the work session is presented below.

Discussion: During the work session, and during a few interviews, certain stretch goals for the project were put forward by stakeholders. During the work sessions various ideas about what the Infrastructure Project could accomplish were discussed.

Significant comments:

The following hierarchy for data gathering was developed during the work sessions.

First, the groups seemed to be in agreement that the main project goal is to facilitate policy evaluation and development. It will help in many other ways too (e.g., local planning, etc.) but these are ancillary goals.

Second, at different work sessions various groups expressed desires for the project to include several different types of information, although they acknowledged that including all of the information would not be feasible. The top feasible information goals expressed seemed to be as described below:

1. An inventory of facilities, presented clearly in one place on a new web site.
2. All readily available or accessible, public information should be included to the extent possible. It is important to consider CIWMB-permitted and non CIWMB-permitted facilities separately:
 - a. For permitted facilities, the system should include throughput, permitted and design capacity, and potentially other information from CIWMB, LEAs and other sources
 - b. For non-regulated facilities, the system might have to be much more modest and focus on gathering available information
 - c. Capacity and throughput information will be particularly challenging to obtain from reliable, accurate sources
3. Secondary information goals that may not be feasible, or that would require tradeoffs with other activities/goals to achieve under the project:
 - a. An analysis of infrastructure trends including information on drivers of new infrastructure (e.g., AB 32, local planning, state legislation and policies) and impediments to new infrastructure (e.g., regional air quality regulations, other regulations, etc.). Most in the stakeholder groups acknowledged that projecting capacity expansions at specific facilities is probably not reasonable.
 - b. Operational details about facilities. This could include the specific type of landfill gas recovery systems or types of composting systems at a facility.

- c. Life-Cycle analysis information related to shipping and managing waste or recyclables.
- d. Market information like specifications, pricing, end-markets for different grades of materials accepted, etc.

Take-away: 1) The project should focus initially on developing a clearly presented inventory of facilities. 2) The project should gather basic information on the amount of material that flows from facility type to facility type to the extent such information is provided by owner/operators or third-party sources. Material flow should be considered statewide or regional aggregate, because individual facilities regularly and rapidly change where materials are sent to or received from. 3) The project has the potential to meet other important goals over time.

Approach to Gathering the Information

The initial project vision was to gather information in a phased approach; first gathering data from existing sources in coordination with existing CIWMB data management, then conducting surveys to fill data gaps. Stakeholder comments focused on two main issues related to data gathering – preparing the list of facilities in the inventory, and gathering more detailed data for each facility.

Issue: What sources are available to identify facilities to include in the inventory?

Initial approach: The initial project vision is to begin the list of facilities using existing CIWMB and external private data sources.

Discussion: During interviews and work session stakeholders provided ideas concerning resources that could assist in developing the facility inventory.

Significant comments:

Local governments and Local Enforcement Agencies (LEAs) can be information sources. In work session and interviews, many suggested that local government waste management officials, and LEAs in particular, could be a source of information about the recycling and waste management facilities in an area. Some suggested that LEAs would have certain information needed on facilities with a solid waste facility permit, and that local government solid waste or recycling staff could be knowledgeable about non-regulated recycling processing and end-use facilities. Individual interviews with local representatives indicated that the information available from local representatives is highly variable. Some local entities have a high level of information accessibility, but others do not have ready access to information needed for the infrastructure inventory.

Other sources of information. Through interviews and work sessions, other sources of information that could assist in compiling the infrastructure inventory were discussed. Local planning agencies may be sources of information including conditional use permits (CUPs) for non-permitted facilities along with the Non-Disposal Facility Element (NDFE) of local

Integrated Waste Management Plans. Also, Los Angeles County is conducting a data collection effort similar to the Infrastructure Project and could be an important source of local information.

Take-away: 1) Need to follow-up with local contacts as sources of information to identify facilities in addition to using already identified sources with the understanding that information availability will likely be highly variable.

Issue: What is the best way to gather targeted information on each facility?

Initial approach: The initial vision is to begin compiling information from existing CIWMB and private data sources, and then conduct surveys. The project team believes it may be possible to have facility owner/operators input and update information through a secure CIWMB webpage.

Discussion: During interviews and the work sessions, ideas about the challenges of data gathering and ways to overcome them were discussed. In the on-line survey, 62 percent of respondents indicated that information should be updated through a secure, on-line form on the CIWMB website, 15 percent responded that “it doesn’t matter to me,” 6 percent indicated that information should be provided by fax, phone, or e-mail to the CIWMB, and 3 percent indicated that information should be provided via fax, phone, or e-mail to a consultant contractually bound to abide by a confidentiality policy.

Significant comments:

Confidentiality policy is a must. In interviews and the TAC work session, it was discussed that the project team may need to make use of the confidentiality policy to get some facilities to provide information.

Certain facilities will be reluctant to provide information. During interviews and work sessions, it was discussed that un-permitted facilities will not provide information for several reasons including: confidentiality concerns, operators do not have the time to respond to information requests, and operators have no legal obligation to reply.

Work through trusted sources. During interviews and the work sessions, it was discussed that if the project team enlists the assistance of large firms and associations, these larger entities may be able to gather and compile information before it is presented to the CIWMB. For example, the CIWMB should start by approaching corporate headquarters of firms that own or operate multiple facilities, and can use trade associations or other organizations wherever possible, to assist in gathering information. In this way facility owner/operators may be assured that their interests are protected. The trusted sources may be able to help craft data gathering questions so that they are more likely to be answered by wary facility operators. Large corporations and trade groups may be able to provide certain sensitive information (e.g., capacity and throughput data) if it is aggregated to protect facilities’ confidentiality. Working through a trusted source may require more lead-time in the data gathering process.

Local governments and LEAs can be information sources. As described in the section above, local governments and LEAs were mentioned by a number of commenters as potential sources of information about facilities. In the CIWMB work sessions, it was discussed that it may be

possible to integrate the data collection efforts of LEAs and local governments into the on-going maintenance of the infrastructure inventory.

Use a web based data collection and verification system, but phone interviews will be needed, too. In interviews, many stakeholders indicated a willingness to participate in the data collection effort via the internet, but some facility operators indicated that they would not because they do not have time to respond to an online inquiry. One comment was made that regardless of the collection method, follow-up phone calls will be needed to encourage facilities to provide data and that it will be very important to make sure contact information including e-mail addresses are kept up to date.

Where possible use existing data collection efforts. In the CIWMB work sessions, it was discussed that certain data collection efforts are conducted on a continual basis. With the work on the Infrastructure Project, consideration should be made to allow the Infrastructure Project database to capture data and be updated as other CIWMB databases are updated.

Allow facility operators to report certain information in ranges. Several interviewees reported that operators might be more willing to provide data if it can be provided in ranges. Ranges have the advantage of being less time consuming for the operator to provide (compared to researching exact figures) and they allow information to be presented in a less sensitive manner. A few commenters noted that facility throughput can vary over time, and by reporting in ranges seasonal and annual variations can be smoothed.

Target non-proprietary information with initial data gathering. Several interviewees expressed the opinion that the data collection effort should begin with modest expectations so that a useable infrastructure inventory can be established. Then, as operator gain confidence in the data-gathering regime, they may be willing to provide more information and sensitive information.

Infrastructure Project as marketing tool. Certain interviewees indicated a strong opinion that if the Infrastructure Project website is promoted as vehicle for businesses to get their name out to the public, then facility operators would be more willing to provide information.

Take-away: (1) Begin data collection with known data sources. (2) Make use of trusted sources (e.g., corporate offices and trade groups). (3) Modify existing data collection efforts to gather information, where possible. (4) Work with local governments and LEAs. (5) Use electronic reporting and verification when possible. (6) Allow facilities to report in ranges. (7) Allow facilities to self-report where appropriate. (8) Begin data collection asking for limited information, looking to build a foundation for the future. (9) Regardless of data collection method, follow-up phone calls and surveys will be needed. (10) Data may need to be extrapolated to fill information gaps. (11) While collection efficiency is a goal, time constrains may require simultaneous efforts such as cold calling some facilities.

Model Development

The initial project vision is to develop a model for projecting waste generation in the state and analyzing infrastructure needs under a number of user-defined future scenarios. Survey respondents and interviewees expressed opinions that modeling is less important to the Infrastructure Project than the infrastructure inventory.

Issue: What are the top priority needs/uses for the model?

Initial approach: The vision for the model is to serve as a high-level tool that will support policy analysis by looking at capacity needs and shortfalls.

Discussion: In all feedback forums, stakeholders acknowledge that the model will best serve as a policy analysis tool. Some interviewees expressed opinions that a model can only generally predict the future needs, but that market forces will determine where and when new recycling and waste management facilities are constructed.

Significant comments:

“What-if” scenarios are a good idea. During all three-work sessions, the development of a model as a tool to assist in policy analysis was discussed and supported. Several commenters indicated that a model would be useful if the model could generally indicate where facilities of different types might be needed to meet future recycling requirements.

Model should tie together supply and demand. Several commenters indicated that the model would be useful if it looked at anticipated supply and demand, and then indicated where capacity shortfalls might occur for certain commodities. During interviews and the TAC work session it was heavily stressed by many facility operators that the model must not be used to exactly predict where future capacity is needed or where facilities should be located, because market forces will determine where and what type of new facilities actually are constructed. The model will be able to predict scenarios concerning the amount of material generated and then provide guidance on the general industry capacity needed to manage this material.

The model must allow regional thinking. At the CIWMB work sessions, comments were made that the model could be a tool that local governments can use for cooperative planning. In several interviews and work session the request was made for users to be able to identify individual counties or contiguous counties for modeling outputs.

Important variables. In the TAC work sessions, participants offered several ideas about helpful variables that could be entered into a model including population growth, economic growth, and increased diversion of various materials. The current economic climate points out how important it is to address economic variables. At the CIWMB work sessions, it was discussed that the tool would be more valuable if the users could determine the regional boundaries to consider in modeling, especially for local governments.

Avoid specific planning predictions. In the work sessions and interviews, several comments were made that a model must not attempt to determine where a new facility should be located. Market forces and business decisions will determine exactly where new facilities will be built. The best a model can do is provide a general idea of what kinds of facilities will be needed in the future. During the CIWMB Executive work session it was mentioned that it may be possible to model a decline in waste generation during an economic downturn, but modeling the decline in demand is problematic.

Important limitations on modeling. Several commenters suggested providing capacity and throughput information as data ranges. It was discussed that collecting data in ranges would present challenges for model inputs and for presenting model outputs and collecting data in ranges may significantly limit the ability to predict capacity needs. Several commenters

indicated that models are typically complex and difficult to understand, and they suggested that the model should be designed to produce simple and understandable results.

Model outputs will be constrained by limited inputs. During interviews and the work sessions it was discussed that it will be difficult to gather comprehensive data on current and projected recycling tonnages, so model outputs of this information may need to be presented with qualifying statements.

Take-away: (1) Model should use current capacity and waste generation to generally predict future short falls. (2) The model should be able to accommodate important variables related to changes in diversion caused by policy decision and changes in growth caused by economic conditions. A natural result of the planned analysis of historical waste generation will be the determination of which variables have significant effect on waste generation. (3) The model should accommodate county and regional analysis, if possible. By conducting county and regional analyses, model users should be able to assess areas where facilities may be needed in the future. (4) The effect of collecting data on the modeling effort will need to be considered (e.g., collecting data in ranges will affect how results are output). (5) Model outputs should be kept as simple as possible. (6) Model outputs may need to be presented with qualifying statements.

Issue: Must the full model be accessible to all web site users, or is it more appropriate to designate specific Board Staff a conduit for running the model and assisting in interpreting results?

Initial approach: The initial project vision for the model is for two model interfaces to exist. For general public use, a simplified version with limited inputs and outputs will reside on the project webpage. A second, more detailed version of the model, that may require special skills to operate, will be accessible only to CIWMB staff.

Discussion: In interviews, stakeholders expressed support for having two versions of the model.

Model can be very complicated and results may be misinterpreted. Several interviewees expressed opinions that the model could be very complicated. Model results could be misinterpreted or misrepresented by opponents or proponents of a change to support their position. By having the detailed model reside with the CIWMB, Board staff could assist model users to avoid errors in the presentation of results.

A simplified “public face” is a good idea. Many interviewees expressed support for having a simple version of the model on the project webpage so that interested parties could research the effect of policy changes. Basic questions can be answered easily, while complex problems may require the attention of someone familiar with the model.

Take away: 1) General support was expressed for the idea of having a limited public model interface on the project website and for having the CIWMB maintain control of the model with expanded capabilities.

Updating and Maintaining the Infrastructure Information Webpage

Issue: How often should the information be updated to keep it current in the future?

Initial approach: There is no initial vision for a required frequency of information update.

Discussion: In general survey results and interviews indicate that stakeholders support updating infrastructure inventory information once a year. A few other ideas for updating were put forward during interviews and work sessions. In the on-line survey, 23 percent of respondents indicated that facilities should be allowed to self-report results whenever they choose, 38 percent supported annual surveys, 11 percent supported biennial surveys, and 14 percent selected some other frequency.

Significant comments:

Frequency of update should reflect frequency of change. One commenter stated that the frequency of updating information should be proportional to the changes that are occurring in the policy arena or market environment.

Continuous update. In work session and interviews several individual expressed the idea that it should be possible to link data from multiple CIWMB databases so that updates can occur simultaneously in more than one location. For example, if a new permit is issued for a facility, the information in the Infrastructure project database should be automatically updated.

Continuous self-updating. Some interviewees and 23 percent of survey respondents indicated that the project should allow facilities to update information whenever they choose.

Once a year update. In the work sessions and interviews, there were significant expressions of support for a once a year update of the model. A few commenters did express an opinion for shorter or longer time frames for updating the information.

Take-away: 1) Facility information should be formally updated once each year. 2) If possible, information should be updated continuously through self-reporting or linked CIWMB data sources.

Conclusions and Next Steps

The ideas and comments received from the various stakeholders will be incorporated into a revised version of the project vision and a revised work plan will be developed that will guide the execution of the Infrastructure Project over the next year.

Building from the take-away items listed above, the next steps for the Infrastructure Project team will include:

- Continue the evaluation of known existing sources of information, particularly CIWMB databases and identify which sources will be used in constructing the final inventory

- As data collection methodology is developed, work closely with associations and large corporations to enlist their aid in data gathering, especially addressing confidentiality concerns
- Reach out to local governments and LEAs to gauge their ability to identify facilities and provide facility information
- Concurrent to designing and programming the infrastructure inventory database, conduct pilot data gather efforts to assess different data sources
- Evaluate the CIWMB's current data gathering activities (in cooperation with the Knowledge Integration Branch), with an eye toward integrating current collection activities with the on-going maintenance of the infrastructure inventory.
- How the model will be affected by gathering data in ranges and reporting outputs by county or user defined region will be investigated.

The updated project vision and work plan will be developed in May 2009, and then posted to the project website.

Appendix 1: Vision Paper

California Integrated Waste Management Board
Infrastructure Information Project

Overview and Vision

Draft, December 22, 2008

Introduction

This paper provides a brief overview of the Infrastructure Inventory Project and a preliminary vision for how the project may unfold.

The sections below cover:

- Project Goals and Guiding Principles
- Types of Information to be Gathered
- Approach to Gathering the Information
- Approach to Delivering the Information

The main purpose of this paper is to help stakeholders to provide feedback on the project. The next steps are to prepare a User Needs Assessment by March 31, 2009 and finalize the detailed project approach by summer 2009. The project is scheduled to culminate in the launch of a new Infrastructure Information Web Page within the Board's existing website in April 2010.

Goals and Guiding Principles

The main goals of the Infrastructure Information Project are to:

- Enhance the Board's existing information on solid waste management and recycling facilities to better satisfy stakeholder needs
- Launch a new web page within the Board's existing website that provides easy access to information on all identified California waste management and recycling facilities, with regionally aggregated summary statistics and maps showing facility locations
- Develop a model to help stakeholders project infrastructure capacity and gaps under a range of different assumptions and scenarios and
- Establish a practical system for regularly updating the information and web page.

The need to address several key challenges requires the project team to make compromises as it strives to achieve the above goals. These challenges include addressing: data gaps and inadequacies; concerns over release of confidential information and the high cost of maintaining and updating data.

To ensure that the project provides maximum value while addressing these challenges, the project team will strive to satisfy the following six guiding principles:

- The project must focus on top priority needs and concerns as identified in a User Needs Assessment
- Concerns over the release of confidential company data must be clearly and unambiguously addressed
- The project must provide the most up-to-date, accurate information possible subject to satisfying other guiding principles
- The project must build on and be coordinated with other Board activities, and be feasible to update and maintain given anticipated Board resources
- Project results must include a clear explanation of data quality, such as when it was last updated, how key uncertainties may affect accuracy and appropriate data uses
- The Infrastructure Information Web Site must be easy to use based on standard practices, typically available software, and user computer experience

Types of Targeted Information

The information targeted by the Infrastructure Information Project is defined by the types of facilities, types of materials, type of data gathered and reported and the geographic boundaries used to aggregate and present results. A preliminary conceptual approach to each of these is discussed below.

Categories of Facilities Included

Figure 1 identifies the categories of facilities to be covered. In short, the project covers: all permanent physical facilities involved with waste management including transfer/processing (e.g., waste transfer stations), transformation (e.g., waste-to-energy facilities), and disposal (e.g., landfills); and all recycling facilities from transfer/processing (e.g., materials recovery facilities that bale HDPE bottles) through intermediate manufacture (e.g., plastics reclaimers producing pellets from HDPE bottles) through manufacturing facilities using recycled materials to make new products (e.g., plastic converters that make pipe from HDPE pellets). See Definition of Facility Categories for more details.

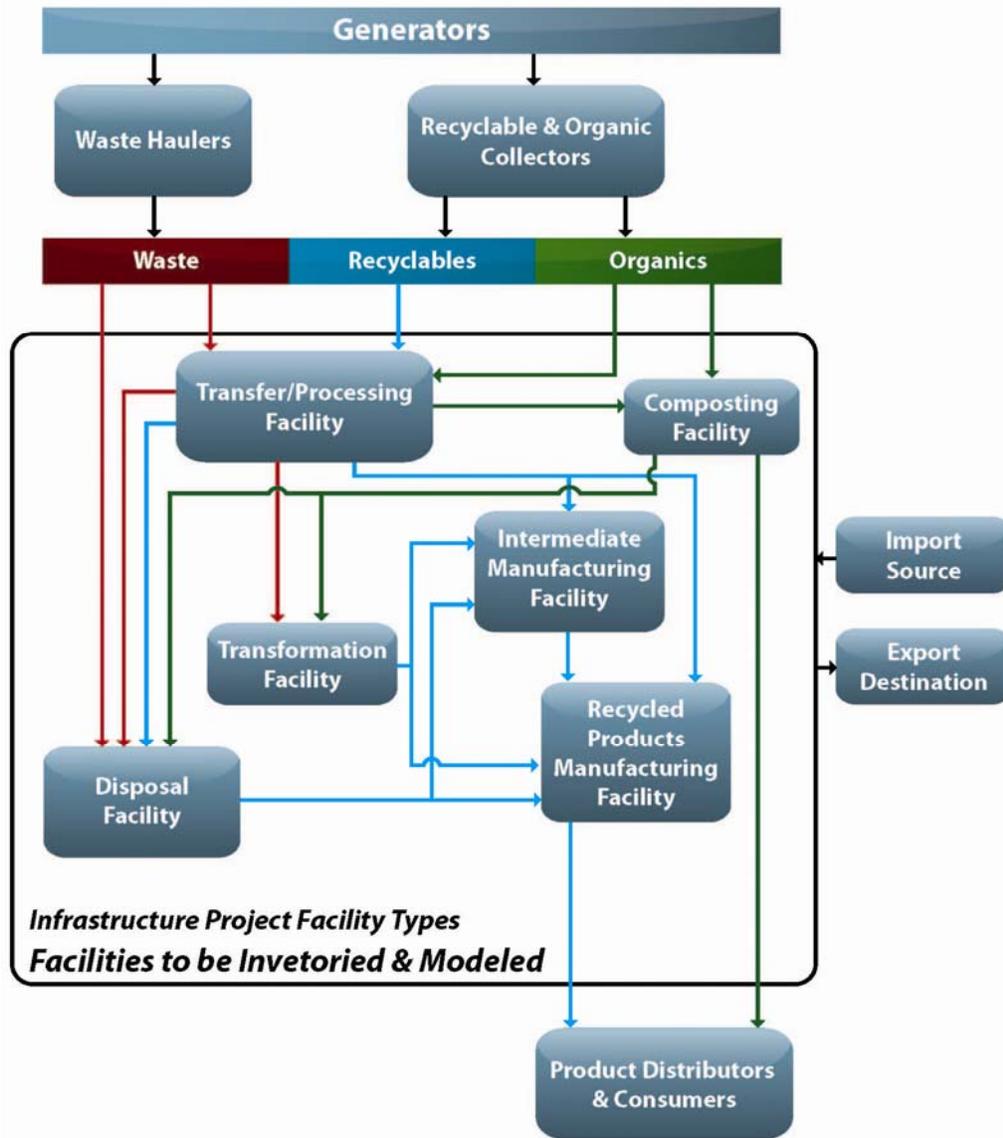


Figure 1. Waste Management and Recycling Flow Chart Identifying Categories of Facilities Covered in the Project

Categories of Waste and Recyclable Materials Covered

The project covers all types of municipal solid waste as defined in the Board’s statewide waste characterization studies, with the exception of household hazardous waste (other than used oil and oil filters). Facilities will be able to list any of these materials as inputs and outputs to their operations. For the purposes of aggregating data and modeling infrastructure needs, however,

the project will focus on the smaller group of selected categories and sub-categories listed in Table 1 below. Using a smaller number of material categories is intended to simplify modeling and these categories were preliminarily determined to be the most useful for describing flows and infrastructure needs. See [Definition of Material Categories](#) for additional information.

Table 1 – List of Material Categories and Sub-categories

Categories	Sub-categories
▪ Mixed Solid Waste	
▪ Mixed Recyclables	
▪ Organics	Urban/Suburban Green Waste, Agricultural Green Waste, Food Waste, Textiles, Carpet, Mixed/Other and Residuals
▪ Metals	Aluminum Cans, Steel Cans, Other Ferrous, Other Non-Ferrous, Mixed/Other and Residuals
▪ Glass	Containers, Mixed/Other and Residuals
▪ Plastic	PET, HDPE, Mixed/Other and Residuals
▪ Paper	White Ledger, Cardboard, Newsprint, Mixed/Other and Residuals
▪ Construction & Demolition Debris	Recyclable, Mixed/Other and Residuals
▪ Used Oil	Used Oil and Used Oil Filters
▪ Waste and Used Tires	Used Tires, Shreds/Chips, Ground/Crumb, Mixed/Other and Residuals

Type of Information Gathered and Reported

Preliminarily, the project will target the following types of information:

- Facility-specific information such as facility descriptions, contact information, types of inputs and outputs and total capacity
- Aggregated regional information such as total capacity by material type and type of facility, and the quantity of total inputs and outputs to different categories of facilities in a defined region
- Model results such as projected waste generation and infrastructure shortfalls by facility category, based on user-defined scenarios for waste disposal and diversion, or shifts in demographic and economic trends
- Other related information such as location of transportation and utility infrastructure, and links to Board program information

See [Types of Targeted Infrastructure Information](#) and [Approach to Modeling Waste Generation and Infrastructure Needs](#) for more detailed information.

Regional Breakdowns

Regional breakdowns are needed to meet user needs, simplify modeling and for reporting confidential data; however, the project team is still considering how to define regions. The issue is complicated because the Board and other state agencies currently use many different regional breakdowns, and no one approach works optimally for all purposes envisioned in this project.

For example, the Board’s regions defined for waste characterization studies are presented in Figure 2 below. Since waste composition data are available based on these regions, they will likely need to be used for projecting waste composition in the project’s model. However, waste flows may be highly erratic within these regions, especially the “coastal” region that includes two disconnected regions north and south of the Bay Area. One alternative may be to avoid defining regions altogether by allowing users to define regions (comprised of multiple counties) to analyze, and to analyze infrastructure needs based on typical flow patterns regardless of predetermined regions. However, this approach may be too budget-intensive or infeasible due to data gaps. The team is seeking stakeholder feedback to assist in determining the best approach.

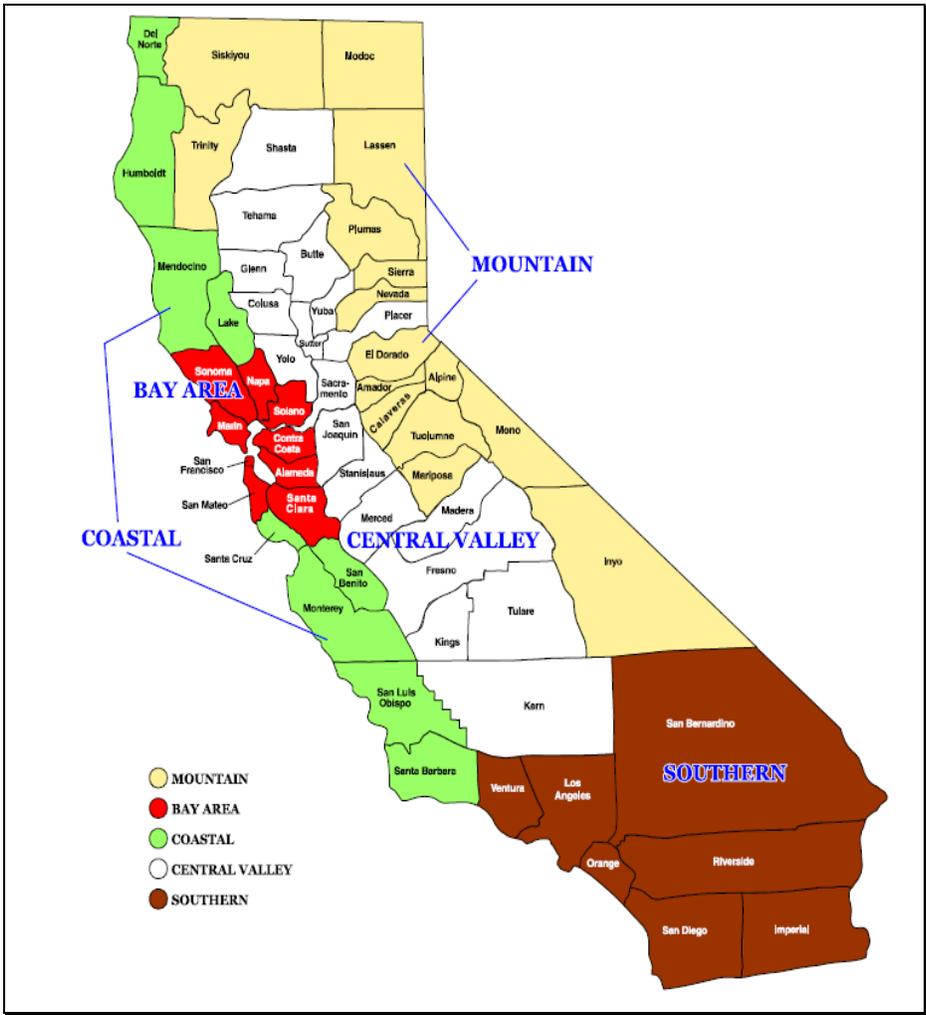


Figure 2. Map of Geographic Regions Used in the Board’s Waste Characterization Studies

Approach to Gathering Infrastructure Information

Information on California waste management and recycling facilities will be gathered through the following means:

- Wherever possible, data will be gathered from existing sources or by coordinating with ongoing Board data gathering activities. See [Existing Infrastructure Information Sources](#) for a preliminary list. At a minimum, existing sources will be used to develop and update an inventory of facilities.
- Where necessary, facilities will be surveyed and/or provided with self-reporting capabilities to provide or update data periodically. Corporate offices will be surveyed for companies that operate more than one California facility. At a minimum, all facilities will be invited to review current information on file and correct it.
- Where necessary for reporting aggregated data by region and for modeling calculations, key data gaps will be filled based on extrapolation and/or estimates. Such estimates will not be reported for specific facilities. We expect to request feedback on a proposed approach to extrapolation in summer 2009.

Approach to Delivering the Information

The Infrastructure Information Project is scheduled to culminate in the launching of a new web page within the Board's existing Web Site in April 2010. The web page will have several features generally grouped into two categories, the infrastructure inventory and the infrastructure model, as described below. For more detailed information and examples of similar web sites, see [Approach to Designing the Infrastructure Information Web Site](#). For details on the model, see [Approach to Modeling Waste Generation and Infrastructure Needs](#).

Delivery of Infrastructure Inventory Information

The home page of the Infrastructure Information Web Page will likely show a map of California with a range of default infrastructure facilities shown. Preliminarily, we envision that users will be able to:

- Limit the facilities shown on the map by selecting counties or pre-defined regions, providing a clearer map and eliminating from view areas that may not be of interest
- Limit the facilities shown on the map by selecting desired facility categories and/or limiting other facility options
- See the location of different types of facilities on a map, with different categories of facilities identified by color or icon
- View, print, or download a listing of the selected/visible facilities
- Select a specific facility to view, print, or download detailed information about it
- View, print, or download the map image
- View, print, or download aggregated waste management and recycling information for a specified region (the system may default to larger regions when aggregating data to address confidentiality concerns)
- Click links to navigate to other parts of the CIWMB web site
- View details about when and how the data were obtained

Delivery of Infrastructure Modeling Results

The project involves developing a model for projecting waste generation and analyzing infrastructure needs based on user-defined hypothetical scenarios. The model results are intended to be suitable for broadly estimating the need for new facilities by region. However, the model results are not intended to provide detailed analysis sufficient to support planning, design, or financing of specific facilities. Such implementation-oriented activities will require detailed analysis specific to companies, sites and markets that is beyond the scope of this project.

Users will define the scenarios for a certain region by entering in the assumed percentage of material categories being analyzed which are diverted and disposed in given years. The model will then project infrastructure needs and shortfalls by type of facility and region. Users may also be able to alter the models underlying assumptions for economic and demographic trends, thereby allowing them to run “optimistic,” “best case,” or “pessimistic” scenarios for growth in waste generation.

Because of the complexity of modeling and the need to carefully interpret results, we preliminarily envision that the model will be available only to certain assigned Board Staff. However, in addition to requesting Board Staff to assist in modeling queries, the Infrastructure Information Web Page will offer the public access to the results of several different modeling exercises designed to address a range of useful standardized questions. Preliminarily, these questions may include:

- How would a specified increase or decrease in population over a certain time impact waste generation, diversion and infrastructure capacity needs?
- How would a specified increase in the statewide diversion rate for certain material categories impact infrastructure capacity needs?
- How would a ban on use of selected materials as alternative daily cover impact infrastructure capacity needs?
- What would be the impacts on available composting infrastructure capacity if certain conversion technology facilities were sited?
- What are the infrastructure capacity implications of the current significant drop in export demand for certain material categories?

With Board Staff’s assistance, users would be able to apply the model to answer these questions for regions within the state according to their own defined diversion and disposal scenarios.

Conclusions and Next Steps

The Infrastructure Information Project aims to improve upon currently available information on California’s waste management and recycling facilities. The project is designed to address user needs and concerns, and this Overview and Vision Paper was prepared to assist stakeholders in providing feedback and suggestions. Please take a moment to complete an [on-line survey](#).

The project team is scheduled to post the results of the User Needs Assessment in March 2009, and a final approach to completing the project will be available in Summary 2009. The project is scheduled to culminate in the launch of a new Infrastructure Information Web Page within the Board’s existing site in April 2010.

Appendix 2: Technical Advisory Committee Members

Name	Company
Jim Fagelson	Newport International
Chuck White	Waste Management
Evan Edgar	Edgar & Assoc, Inc.
Bill O'Grady	Talco Plastics
Larry Sweetser	Regional Council of Rural Counties
Mike Hammer	Waste Management
Marc Madden	Institute of Scrap Recycling, Inc. (ISRI)
Skip Lacaze	City of San Jose
Paul Alva	LA County Public Works
Karen Coca	City of Los Angeles
Nick Lapis	Californians Against Waste
Tim Flanagan	Monterey Regional Waste Management District
George Eowan	CRRC
Yvonne Hunter	Institute for Local Government
Glenn Acosta	LA County San District
Dung Kong	LA County San District

Appendix 3: On-line Survey Results

Number of respondents: 197

1. Which group best describes the stakeholder group you represent?

Option	Answers	Percent
Private Sector ? Owners/Operators of waste management and/or recycling processing facilities	49	24.87%
Private Sector ? Owners/Operators of manufacturing facilities that use recycled feedstock	10	5.08%
Private Sector ? Other	24	12.18%
Government – Local -Owners/Operators of waste management and/or recycling processing facilities	16	8.12%
Government ? Local - Other	36	18.27%
Government ? State/Federal	33	16.75%
Non-profit Sector	12	6.09%
Other	10	5.08%
Not Answered	7	3.55%

2. How do you rate the effectiveness of currently available recycling and waste management infrastructure information?

	Very well. I can almost always find what I need.	Adequately. I can usually find what I need.	Not very well. Key information is missing or hard to obtain.	Not Applicable	Not answered
How well do existing sources of information meet your needs?	8.12%	47.72%	31.47%	8.12%	4.57%
How up-to-date do you find the information on the database you use?	9.14%	44.16%	30.46%	8.12%	8.12%
How do you find the completeness or accuracy of the databases you use?	7.11%	47.72%	29.44%	8.63%	7.11%

Appendix 3: On-line Survey Results

3. How important do you believe each goal of the Infrastructure Project is?

	Very important	Somewhat important	Neutral/ no opinion	Not important	Problematic	Not answered
Goal #1: Improve the Waste Board's existing solid waste disposal and diversion infrastructure information system to better meet stakeholder needs	52.28%	22.84%	9.14%	5.08%	0.51%	10.15%
Goal #2: Launch a new map-based web page within the Waste Board's existing web site that provides a centralized, easy-to-access inventory of all identified facilities	51.78%	25.89%	10.66%	2.54%	0%	9.14%
Goal #3: Develop a model that estimates future waste generation quantities and projects the need for new facilities based on assumptions about future diversion rates, population growth, economic activity and other factors	37.06%	23.35%	20.30%	6.09%	3.05%	10.15%
Goal #4: Establish a practical system to update the web page	55.84%	25.38%	5.08%	1.52%	0%	12.18%

4. Rate each feature of the proposed Infrastructure Project

	Problematic	Not Useful	Neutral/ No Opinion	Somewhat Useful	Very Useful	Not Answered
4a. Maps showing the location of all known California waste management and recycling facilities, including recycling markets, categorized by type of facility	1.02%	0.51%	8.63%	24.37%	54.31%	11.17%
4b. Basic non-confidential information on each facility such as address, contact information, types of materials accepted and types of materials/products output	0.00%	0.00%	5.08%	25.38%	56.85%	12.69%
4c. Aggregated information on facility capacity and actual annual tonnages received, reported at the county or multi-county level in a way that does not allow readers to infer statistics on any one particular facility. Example: Estimated total processing capacity for residential curbside recyclables in the nine-county San Francisco Bay Area region	1.52%	9.64%	24.37%	26.90%	25.38%	12.18%
4d. Projections for waste generation by multi-county region for a 20-year period, based on a standardized model that builds upon past Waste Board waste generation projection methodologies	1.52%	10.66%	28.93%	28.93%	18.27%	11.68%

Appendix 3: On-line Survey Results

	Problematic	Not Useful	Neutral/ No Opinion	Somewhat Useful	Very Useful	Not Answered
4e. Projections of capacity needs and shortfalls by material and facility type, for multi-county regions, based on assumptions about future diversion rates, population growth, economic activity and other factors. Example: Projections of the need for additional material recovery facilities in the San Francisco Bay Area assuming that residential recovery of select recyclables increases by 30 percent over a five year period	1.52%	10.66%	28.93%	28.93%	18.27%	11.68%

5. How do you rate the usefulness of the facility and material categories?

	Problematic	Not Useful	Neutral/ No Opinion	Somewhat Useful	Very Useful	Not Answered
5a. How do you rate the usefulness of the facility categories?	1.52%	2.54%	17.26%	37.06%	29.44%	12.18%
5b. How do you rate the usefulness of the material categories?	1.52%	4.57%	15.23%	36.04%	29.95%	12.69%

6. The new Infrastructure Information Web Page will draw from data gathered through current Board programs and, where necessary, new surveys, requiring the Board to reallocate budget and staff time. To adequately meet your needs, yet remain cost-effective and efficient, how often should facility information be updated?

Option	Percent
Allow facilities to self-report and update data whenever they choose	23.35%
Annual surveys	37.56%
Biennial surveys (i.e., every other year)	11.17%
Other	14.21%
Not Answered	13.71%

Appendix 3: On-line Survey Results

7. Which of the following options for facility owners/operators to provide information do you feel is most appropriate?

Option	Percent
Provide information through a secure, on-line form on the Waste Board's website	61.93%
Provide information via fax, phone, or email to Waste Board staff	5.58%
Provide information via fax, phone, or e-mail to a consultant contractually bound to abide by a confidentiality policy with the Waste Board	2.54%
It doesn't matter to me	15.23%
Other	4.06%
Not Answered	10.66%

8. Check each of the types of information below that you feel should be considered confidential and not publicly released for individual facilities:

Option	Percent
Types of materials accepted by each facility	14.21%
Current and projected annual capacity (maximum quantity of inputs accepted per year)	21.32%
Theoretical maximum capacity (based on owner/operator's assumptions about feasibility)	19.80%
Actual total throughput (total quantity of all material types received in most recent year)	17.26%
Actual throughput in total and by major material type (quantity of each material category received in most recent year)	19.80%
Types of sources by percentage of input (i.e., percent received through municipal contract, private contract, and open market)	24.37%
Point of origin of inputs (listing percent of total input by jurisdiction where waste was generated)	20.81%
Total amount of diversion outputs	13.71%
Amount of diversion outputs by material type	18.78%
Total amount of residuals disposed (for recycling facilities)	19.29%
Location and category of destination facilities for outputs (e.g., amount sent to landfills by county/state or amount of recycled paper sent to paper mills by county/state)	20.30%
Other	16.24%

9a. Certain information will be aggregated by geographic region for presentation. How well will information presented by these geographic regions meet your needs?

Option	Percent
Problematic	0.00%
Not Useful	6.09%
Neutral/No Opinion	16.75%
Somewhat Useful	33.50%
Very Useful	28.43%
Not Answered	15.23%

Appendix 4: List of Individuals Interviewed

- Stephen Bantillo, Director, Division of Recycling, Department of Conservation
- Ken Bower, Tulare County Environmental Health
- Bill Camarillo, Agromin Premium Soil Products
- Karen Coca, City of Los Angeles
- Kevin Duncombe, Western Pulp and Paper
- Evan Edgar, Edgar and Associates
- Jim Fagleson, Newport International
- Tim Flanagan, Monterrey WMD
- Bill Fraser, Pacific Coast Building Products
- Mike Hammer, Waste Management
- Yvonne Hunter, Institute for Local Government
- Kathy Kellogg, Kellogg Garden Products
- Stan Kezar, Eno Plastics
- Kenneth J. Kim, Corridor Recycling
- Skip Lacaze, City of San Jose
- Nick Lapis, Californians Against Waste
- Mark Madden, Schnitzer Steel
- Rosalie Mule, CIWMB Board Member
- Rachel Oster, Norcal Solid Waste Systems
- John Panenka, Deputy Director of Recycling, Department of Conservation
- Craig Pearson, City of Santa Cruz
- Chris Peck, OPA
- Mary Pitto, regional Council of Rural Counties
- Michael Rushakoff, General Manager, Crown Computer Recycling
- Larry Sweetser, Sweetser and Associates
- Randy Taylor, Goodwill Industries
- Bill Tinnell, Tinnell Fibre
- Chuck White, Waste Management
- Lisa Wood, City of San Diego