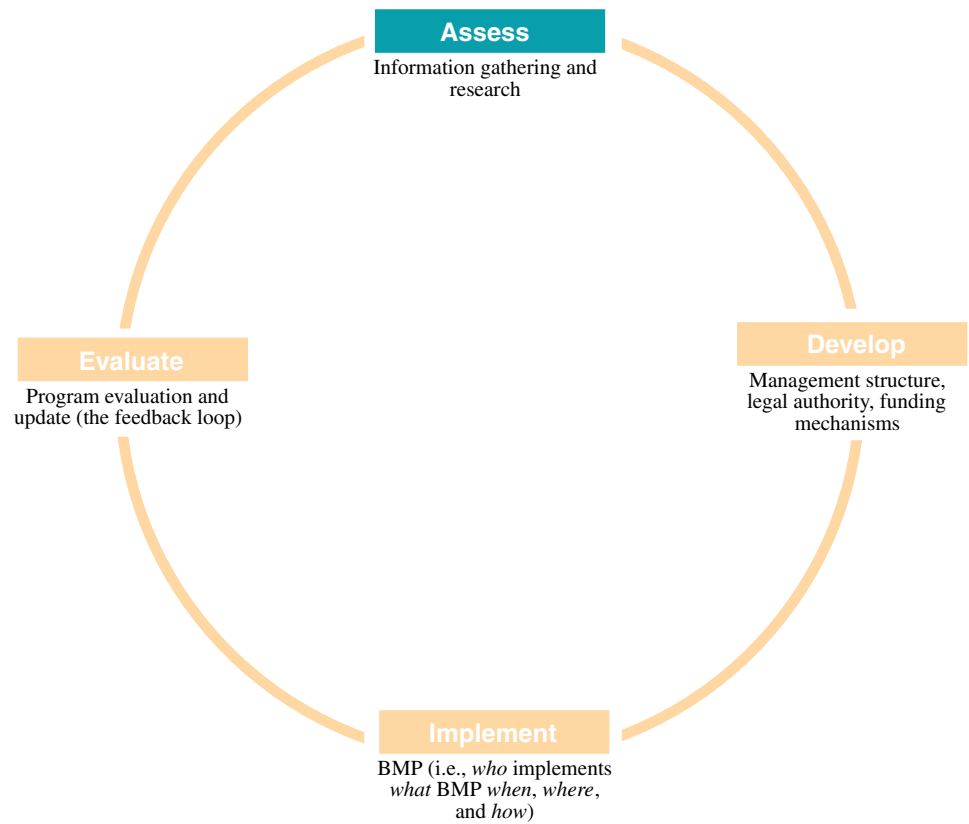


# 2

## Assessment



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### 2.1 Institutional Assessment

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### 2.2 Assessment of Watershed Resources and Pollutant Sources

**T**his section describes some of the initial planning activities for developing your URP. As explained below, these activities can be useful in designing and tailoring your URP to better address local conditions and concerns, to coordinate your program with other environmental programs, and to avoid duplication of effort.

## 2.1 Institutional Assessment

### Departmental Leaders

One of the very first questions to be answered is *who in your municipality should commence the development of your URP?* In most Phase I municipalities the Public Works Department typically assumed this role because the storm drain system was its responsibility. Since the URP and NPDES Phase II requirements involve many more functions than only public works, you may choose a different approach (e.g., forming a multidepartmental steering committee responsible for coordinating your URP). Regardless, once the leaders are identified, staff need to be assigned to this program. Based on the experience of the Cities of Monterey and Santa Cruz, you need to dedicate one staff person (junior engineer or equivalent) 3/4 to full time to your URP's development. You may be able to reduce costs by “piggybacking” onto existing environmental programs in your community, but some funding to pay for personnel time must be allotted. Since small municipalities may not have the resources to dedicate a person to this program, you can also explore the possibility of developing a regional program with neighboring municipalities as a way of sharing overall costs.

### Internal Institutional Assessment

Before you begin developing and implementing your URP, you need to informally assess the existing urban runoff framework in your municipality. Elements of an URP may already exist in your community — part of the development process is recognizing, coordinating, and building upon these existing efforts. By taking stock of existing players, policies, programs, fiscal resources, authorities, and management structures you can better understand how your new URP elements may fit into this environment.

To understand your municipality's current urban runoff efforts, as well as to identify potential participants in your new URP, you need to understand what is currently being done to address urban runoff. How is your municipality organized to address polluted urban runoff in new development, existing development, illegal

dumping, and accidental spills? Each municipality will be organized differently; however, most municipalities will share similar functional duties. As an example, all municipalities review new development pursuant to the California Environmental Quality Act (CEQA); however, in some cases, this review is done by a planning department, in others an environmental programs division, and in others a City Manager. It is important for you to understand **who** is doing **what** to address polluted runoff within your own municipality. See Table 2-1 for an example of such an analysis performed by the City of Santa Cruz.

Once you have a general idea of the players within your municipality, the next step is to get a preliminary idea of your existing polluted runoff policies, programs, legal authorities, and fiscal resources. Some of this will likely fall out of the functional analysis, but you will also need to look at existing ordinances, general plan policies, local coastal program policies (if applicable), fiscal resources (if any), and any other runoff-related programs in your municipality. Remember that you do not need to perform an in-depth analysis here, but rather try to get a general sense of what you have to work with. (Note: The more in-depth program analysis that will eventually be necessary for your URP is covered in greater detail in the Program Management section of this guide.)

**Start your URP with an internal meeting to go over issues and goals**



Armed with a general sense of your municipality's players, policies, programs, fiscal resources, authorities, and management structures you are now ready to call an internal meeting to discuss your potential URP. The overview section of this guide (at least) and any accumulated materials are appropriate background information to distribute to participants prior to this meeting. While the goal of this meeting should be primarily informative, some important preliminary decisions must be made.

Following your internal meeting, you should have some initial options and a general sense of the existing urban runoff management framework for your municipality. You are now ready to reach out to other urban runoff players and programs outside of your municipality.

## External Institutional Assessment

A useful step in developing your URP is to review existing regional programs, plans, and policies for relevance to your municipality's URP. These programs can include federal, state, regional, or municipal programs that directly or indirectly address urban runoff issues. For instance, a watershed management plan/program may exist in your region developed by another entity. It would be useful for your municipality to understand that plan and coordinate your URP with the existing watershed management program. The main objectives of conducting such a review of existing external programs are to:

Table 2-1. City of Santa Cruz Departments Responsible for URP

| Division/Section  | Current Activity   | Potential Future Role/Responsibility for URP Implementation              |
|---|--|--|
| <b>Public Works</b>                                       |  |  |
| Wastewater Treatment/Industrial Waste Inspection          | Storm water monitoring; detection of illicit connections; training and information to businesses on proper disposal of liquid wastes   | Industrial and Commercial Program Elements (inspections and education)   |
| Operations/Wastewater Mains                               | Maintain sewer mains to avoid overflows that could affect surface water quality; perform annual cleaning of catchbasins; investigate complaints of illegal dumping and connections   | Catchbasin Cleaning Program<br>Illicit Connection Program                |
| Operations/Refuse and Recycling Collection and Processing | Conduct street sweeping; provide refuse and recycling services including curb-side pickup of used motor oil; assist with river and creek clean-up; organize hazardous waste drop-off days and work with the County on hazardous waste drop-off | Street Sweeping Program; Hazardous Waste Control Program                 |
| Operations/Streets and Flood Control                      | Maintain storm drain system and flood control facilities; assist with detection of illicit connections; assist with river and creek clean-up   |  |
| Traffic Engineering/Traffic Maintenance                   | Conduct storm drain stenciling; implement trip reduction locally for city personnel; planning; signal coordination to improve traffic flow and reduce air pollution; promote alternative transportation modes; participate in CMP monitoring   | Storm Drain Stenciling Program; Coordination with CMA                    |
| Engineering/Design and Development                        | Design and construction of storm drain system improvements; mapping of facilities; conduct land development review; storm drain monitoring plan development to coordinate storm drain water quality planning efforts locally and regionally    | Construction Site Inspection Program                                     |
| Administration  | Assist all divisions with educational and outreach efforts on recycling, refuse collection and disposal; industrial waste issues; training; and maintaining stormwater utility   | Public Education and Outreach Program                                    |
| <b>Planning and Community Development</b>                 |  |  |
| Current Planning  | Review new development and redevelopment projects (under CEQA)   | Implementation of revised CEQA checklist                                 |
| Future Planning   | Prepare General Plan revisions and amendments  | New Development Program  |
| Building Inspection                                       | Review erosion control plans for private development; inspection of on-site improvements   | Construction Site Inspection Program                                     |
| <b>Fire Department</b>                                    |  |  |
| Parks and Recreation                                      | Implement pesticide and herbicide application program based on state guidelines; in-house training to city personnel on hazardous materials handling at city facilities  | Program for parks, golf courses, swimming pools, and public water bodies |

## ASSESSMENT

- ✓ Ensure that your URP **does not duplicate** any existing activities.
- ✓ Ensure that your URP within your municipality is **coordinated with** and **does not conflict with** other existing environmental programs.
- ✓ Identify **areas not previously addressed** by other programs so that elements can be included in your URP to address these areas.

Regional programs may include, for example, basin plans, state nonpoint source programs, and the Caltrans storm water management program. Local programs may include city construction and grading program, hazardous waste recycling and disposal programs, maintenance programs, and local resource conservation district programs. Table 2-2 shows the programs and plans reviewed by the Cities of Monterey and Santa Cruz during the development of their URPs, and can be used as a guide in identifying the programs and plans to review for your municipality.

Some key items to keep in mind while conducting this review are:

- ✓ Does the program address any urban runoff issues?
- ✓ If so, what is currently being done under that program to address the identified urban runoff issue?
- ✓ It is appropriate to continue handling the identified issue under the existing program or should it be addressed in the URP that you are developing?
- ✓ How can effort and cost be reduced by coordinating your URP with other existing programs?

Again, in conducting this review, remember that the goal is not to expend a large effort to create a polished report, but to identify programs with which to coordinate your URP.

Once you have identified such programs, plan to meet with people responsible for implementing them to see whether they are willing to emphasize urban runoff concerns within their programs. An example is the hazardous materials (Hazmat) program in your area. Such a program will emphasize the proper handling, storage, and disposal of hazardous materials through outreach and education of the public and through site inspections at industrial and commercial facilities. You could meet with the staff from the Hazmat program to ask if they would emphasize urban runoff issues in their public education and outreach materials. Remember the idea is to utilize existing resources where possible, and avoid duplication of effort by different programs.

A parallel track is to reach out to other municipalities within the larger watershed to coordinate water pollution prevention efforts regionally. Watersheds provide the fundamental resource unit for managing polluted runoff since runoff within a watershed flows to a common outlet. Banding together in a larger watershed management plan can help to coordinate BMP implementation, pool resources, and, most of all, better protect water quality.

Table 2-2. Existing Plans and Programs Reviewed by Cities of Monterey and Santa Cruz

| Program  | Agency Primarily Responsible for Implementation   | Urban Runoff Issues Addressed by the Program   |
|--|---|--|
| <b>Regional/Areawide Programs</b><br>Basin Plans                               | RWQCB   | Establishes regional water quality objectives, beneficial uses, and implementation strategies  |
| Water Quality Protection Program, Action Plan I                                | Lead coordinating agency Monterey Bay National Marine Sanctuary. Coalition of federal, state, and local agencies, and local municipalities. | Public education and outreach, technical training, regional urban runoff management, structural and nonstructural controls, storm drain inspection, sedimentation and erosion control, planning controls (CEQA)  |
| Urban Runoff Water Quality Management Plan                                     | Association of Monterey Bay Area Governments  | Illicit discharge elimination, public education and participation, controls for new development, monitoring  |
| State Nonpoint Source Control Program (CWA Section 319 and CZARA Section 6217) | SWRCB   | Includes recommendations for implementing urban runoff pollution controls from new and existing development, construction sites, other urban sources, and transportation infrastructure  |
| California Coastal Management Program [CCMP] (includes CZARA Section 6217)     | California Coastal Commission   | Development and periodic review of Local Coastal Plans, review and issuance of coastal development permits, review for consistency with the CCMP of federal projects (projects conducted, permitted, or funded by federal agencies), public education and outreach |
| Caltrans Storm Water Management Program  | Caltrans  | Pollutant and sediment controls on Caltrans facilities   |
| General Industrial/General Construction Storm Water Permit                     | RWQCB   | Controls pollutant discharge from industrial and construction sites  |
| Clean Air Program  | Air Quality Management District   | Controls air emissions of pollutants that enter urban runoff through deposition and fallout  |
| CWA Section 404  | Army Corps of Engineers   | Regulates activities involving filling of the waters of the U.S.; requires a water quality certification from the RWQCB, which in turn regulates pollutant discharge and erosion during and after project construction   |
| California Department of Fish and Game Code Section 1600                       | Department of Fish and Game   | Regulates activities such as grading, filling, and dredging in state waters or stream beds; controls sedimentation, erosion, and pollutant discharge into streams  |
| Wastewater Reuse/Recycling Programs  | Monterey Regional Water Pollution Control Agency  | Primary function is wastewater collection and treatment; some storm water reuse has been looked at for future role   |
| Water Allocation Program   | Monterey Peninsula Water Management District  | Joint Powers Authority to manage portable water allocations for the Monterey Peninsula   |
| <b>City of Monterey Programs</b><br>City of Monterey Storm Water Utility       | City of Monterey  | A funding mechanism for storm drain maintenance and construction   |
| General Plan/ Local Coastal Plan/ Zoning                                       | City of Monterey  | Controls land use  |
| CEQA review process  | City of Monterey  | Controls water quality degradation from new development and redevelopment  |
| Laguna Grande/Roberts Lake Land Use Plan                                       | City of Monterey  | Regulates development and land use in plan area  |

Table continues on following page

**Table 2-2 (continued). Existing Plans and Programs Reviewed by Cities of Monterey and Santa Cruz**

| Program  | Agency Primarily Responsible for Implementation  | Urban Runoff Issues Addressed by the Program  |
|--|--|---|
| <b>City of Santa Cruz Programs</b><br>City of Santa Cruz Storm Water Utility | City of Santa Cruz                               | A funding mechanism to fund flood control improvements and habitat restoration projects in the San Lorenzo River watershed, develop a storm drain Master Plan, and implement storm water BMPs throughout the City |
| General Plan/ Local Coastal Plan/ Zoning                                     | City of Santa Cruz                               | Controls land use   |
| CEQA review process  | City of Santa Cruz                               | Controls water quality degradation from new development/ redevelopment  |
| Grading Ordinance  | City of Santa Cruz                               | Controls erosion and sedimentation  |
| Hazardous Materials Storage Ordinance  | City of Santa Cruz                               | Indirectly reduces improper discharges of pollutants to storm drains  |
| San Lorenzo River Watershed Management Plan                                  | Santa Cruz County Environmental Health Services  | Addresses low flows, toxic pollutants, sedimentation, and erosion from a variety of sources including urban   |
| San Lorenzo River Caretakers   | Santa Cruz County Resource Conservation District | Steering committee of land users and residents working closely with public agencies on watershed planning, restoration, and education   |
| Arana Gulch  | Santa Cruz County Resource Conservation District | Steering committee of land users and residents working closely with public agencies on watershed planning, restoration, and education   |

Reference: Woodward-Clyde. 1997. Review of Existing Plans, Programs, and Policies. Prepared for City of Monterey and City of Santa Cruz.

## What Next?

At this point, you should have a pretty good idea of the existing polluted runoff management framework in and around your municipality, and you should also have developed some preliminary ideas on the type of URP that your municipality may be able to implement. As you continue with the resource assessment described in the next section of this document, your URP options should become even clearer.

As you begin to develop these options and move forward with your URP, you will need to get the decision makers involved, possibly in the form of an informal briefing or a formal presentation. You may want to wait until you have worked through the assessment completely or you can give out some signals that an URP is potentially coming down the pike. Whatever the method, early buy-in from policy and decision makers is crucial to your URP's success. The Program Management section of this guide discusses this issue in more detail, but it is never too early to cultivate management and political support.

## 2.2 Assessment of Watershed Resources and Pollutant Sources

The two ways to approach this assessment are:

- ✓ Conduct a limited assessment (as presented in NPDES Phase II regulations), and rely on the presumption that you have a general urban runoff problem.
- ✓ Geographically identify more precisely the nature of your municipality's watershed resources, pollutants of concern and their sources, and opportunities for water quality improvements. Through this analytic mapping exercise, determine *where* the specific problems are within your jurisdiction and develop evidence as to *why* you should be focusing your URP resources on those problems.

### Minimum Requirement: Presume a General Urban Runoff Problem Exists

NPDES Phase II regulations emphasize the presumptive approach. The presumption is that each municipality has a general urban runoff problem and that this problem can be addressed through the implementation of six minimum control programs. The regulations, therefore, ask for a limited local assessment that demonstrates an awareness of the storm drain system (i.e., map of major pipes, outfalls, and topography and areas of concentrated activities likely to be sources of storm water pollution). The advantage of the presumptive approach is twofold: (1) it focuses limited program resources on program implementation without a lot of time and resources invested in up-front studies and (2) it is the most cost-effective way to implement the required elements of your program (Section 4). A great deal of evidence supports the premise that polluted runoff is a problem in urban environments and you can be fairly confident that your municipality shares these general runoff problems. By accepting this premise, you can directly implement the six minimum control measures described in the regulations secure in the knowledge that the elements of your program satisfy the regulatory requirements.

The disadvantage is that your municipality may have unique watershed resources or unique urban runoff problems that require custom-crafted program elements. Lacking a detailed assessment that allows your URP to target specific concerns, water quality improvements may not be achieved. Furthermore, and just as importantly, without a more detailed assessment of your specific urban runoff problems, educating both the public and decision makers as to the nature of the problem — and the need for a program — may be more difficult.

### Optional: Identify Specific Urban Runoff Problems in Your Municipality

The essence of a detailed municipal assessment is a working map of your municipality supplemented by a descriptive analysis of the relevant mapped features.

The idea is to use the working map as an analytical tool for identifying pollutant sources and prioritizing opportunities for water quality improvements (both structural and



nonstructural measures) in a geographical manner.

While the goal of geographically identifying and prioritizing watershed resources is clear,

**Your working map can be the product of a staff meeting**



methods for achieving this goal vary greatly depending upon the level of resources available. For example, your municipality may be equipped with a working geographic information system (GIS) containing water quality monitoring information that helps you to pinpoint resource concerns at the click of a mouse. Or, conversely, your working map may be the product of a staff meeting in which resource areas and potential concerns are

mapped out using the best professional judgment and the local knowledge possessed by your city engineers, maintenance supervisors, planners, etc. Table 2-3 presents a list of urban runoff pollution sources with the pollutants associated with these sources. You can use this table to guide you in identifying the sources that are significant in your area.

Regardless of the mapping method, always remember that the analytical mapping process is only a means to an end and not an end in itself. Municipal assessments have been known to eat up large portions of development budgets as the assessors attempt to quantify and characterize every component of the municipality's built and natural environment. While a comprehensive assessment detailing acres of different land uses, numbers of targeted industries (e.g., number of gas stations), linear coverage (e.g., miles of road), etc., can be quite useful for prioritizing resources, it can also quite easily become a boundless work task that may or may not be justified by the result. You need to clearly define the parameters for this task prior to beginning because it is easy to commit resources over and beyond what is necessary to arrive at your municipality's urban runoff priorities.

There is growing evidence that the degree of urbanization has evidenced by the percentage of directly connected impervious area, or DCIA) can indicate the extent of urban runoff pollution. Considering the percentage of DCIA in your municipality can provide a tool for assessment and choosing control measures for programs. For example, an area with a low percentage of DCIA probably indicates few urban runoff impacts and new development controls should be emphasized to prevent an increase in impacts. An area with a higher percentage of DCIA will likely have greater urban runoff impacts. These areas should consider other control programs tailored to the existing land uses in the municipality.

Table 2-3. Relationship of Sources to Primary Pollutants of Concern

| Pollutant Source/<br>Activity | Primary Pollutants of Concern in Urban Runoff |                                    |                           |                              |           |           |           |                                    |            |
|-------------------------------|---|------------------------------------|---------------------------|------------------------------|-----------|-----------|-----------|------------------------------------|------------|
|                               | Physical<br>Parameters                        | Synthetic<br>Organics <sup>1</sup> | Petroleum<br>Hydrocarbons | Heavy<br>Metals <sup>2</sup> | Nutrients | Pathogens | Sediments | Oxygen-<br>Demanding<br>Substances | Floatables |
| Vehicle Service Facilities    |   | ●                                  | ●                         | ●                            |           |           |           |                                    |            |
| Gas Stations                  |   | ●                                  | ●                         | ●                            |           |           |           |                                    |            |
| Metal Fabrication Shops       |   | ●                                  | ●                         | ●                            |           |           |           |                                    |            |
| Restaurants                   |   |                                    |                           |                              |           |           |           |                                    | ●          |
| Auto Wrecking Yards           | ●   | ●                                  | ●                         | ●                            |           |           |           |                                    |            |
| Mobile Cleaners               |   | ●                                  |                           |                              |           |           |           |                                    |            |
| Parking Lots                  | ●   |                                    | ●                         | ●                            |           |           |           |                                    | ●          |
| Residential Dwellings         | ●   | ●                                  |                           | ●                            | ●         | ●         | ●         | ●                                  |            |
| Parks/Open Spaces             |   |                                    |                           |                              | ●         | ●         | ●         | ●                                  | ●          |
| Construction Sites            | ●   |                                    |                           |                              |           |           | ●         | ●                                  |            |
| Corporation Yards             | ●   | ●                                  | ●                         | ●                            |           |           |           |                                    |            |
| Streets and Highways          | ●   |                                    | ●                         | ●                            |           |           |           | ●                                  | ●          |
| Marinas                       |   |                                    |                           |                              |           |           |           |                                    | ●          |
| Golf Courses                  |   | ●                                  |                           |                              | ●         |           | ●         | ●                                  |            |
| Sewer Overflows               | ●   |                                    |                           |                              |           | ●         |           | ●                                  |            |

<sup>1</sup> Pesticides, herbicides, and PCBs

<sup>2</sup> Lead, copper, zinc, and cadmium

### Do You Need to Proceed with the Municipal Assessment?

This guide presents a *minimum* program that can be undertaken without a detailed municipal assessment, which satisfies regulatory requirements and which should result in general water quality improvements. However, this guide does *not* advocate that you proceed without some level of municipal assessment. Such an assessment is necessary not only to develop optional program elements to address your municipality's specific runoff problems, but also to help frame your URP for decision makers, affected businesses, and the general public. Furthermore, even if you should choose to institute only the minimum program, program evaluation and subsequent program revisions (Section 5) will require establishment of baseline conditions and some amount of descriptive analysis. Hence, a robust URP **requires** a descriptive municipal characterization as illustrated in the remainder of this section.

### Developing Your Working Map

Your municipal assessment should consist of two elements:

- ✓ A map of your municipality identifying resources, problem areas, and opportunities for water quality improvements
- ✓ A textual companion document or list describing the mapped features

The basic elements of the municipal assessment working map are shown in Table 2-4. Keep in mind that these elements represent a ‘laundry list’ of sorts meant primarily to accelerate your own thought process relevant to your municipality’s urban runoff concerns and is not a required set of elements. Each municipality is different, both in terms of built and natural environment as well as the level of time and effort expended on municipal assessment. Remember, the goal is not to create a polished municipal characterization but rather to identify and prioritize (by any means available) opportunities for improving water quality and the management of urban runoff.

If the above-described elements of the working map appear daunting, remember, *the working map is **only** a tool*. If much of the information is unavailable, or if the development budget would be unduly strained by the process of developing the mapped information, pick and choose the elements of the assessment most useful for your jurisdiction. For example, if you can easily locate land-use categories or specific sources, but have no monitoring or other water quality information that substantiates a problem, the land-use information alone can be used to target potential polluted runoff sources (e.g., vehicle service facilities).

**Figures 2-1 and 2-2 show working maps prepared by the Cities of Monterey and Santa Cruz with the assistance of the California Coastal Commission.**

**These cities began the development of their URPs by mapping existing industries, commercial facilities, and municipal facilities. Each city was presented with different challenges and results due to differing levels of available resources.**

**The City of Monterey identified land use of parcels on a large paper map colored by hand with information from a phone book. The working map showed specific types of facilities chosen because of their potential for urban runoff pollution (e.g., restaurants, auto service facilities, and park and school grounds).**

**The City of Santa Cruz working map, on the other hand, represented the “Cadillac” of this effort, computer-generated using an existing GIS with land-use layers overlaid on a City map.**

**Whatever your resources may be, this type of effort is doable and informative. Both cities used these land-use maps to identify potential polluters to target with educational campaigns. The City of Monterey correlated the types of businesses found nearest the most polluted storm drain outfalls to use education funds most effectively.**

Table 2-4. Elements of Municipal Assessment Working Map

| <b>Mapped Features</b><br>The map should identify:  | <b>Textual Companion</b><br>Each of the mapped features should be described:   |
|---|--|
| <b>Resources</b><br>Watersheds<br>Wetlands<br>Riparian areas<br>Rivers<br>Streams<br>Lakes<br>Ponds<br>Springs  | <ul style="list-style-type: none"> <li>■ Describe water quality condition (e.g., good, bad, moderate, unknown)</li> <li>■ Describe beneficial uses (e.g., water supply, recreation, habitat, fishing)</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● SWRCB Water Quality Assessment documents for your area</li> <li>● RWQCB Basin Plan for your area</li> <li>● Municipal staff observations</li> <li>● Municipal GIS, aerial photos, topo maps</li> </ul>  |
| <b>Infrastructure</b><br>Roads<br>Drainage facilities<br>Storm drain system<br>Treatment works<br>Outfalls  | <ul style="list-style-type: none"> <li>■ Describe types and quantities (e.g., miles of roads, length of storm drain pipe of different diameter, numbers of outfall locations, etc.)</li> <li>■ Describe existing control measures and their effectiveness (e.g., catch basin cleaning)</li> <li>■ Describe general condition (e.g., good, bad, deteriorating, needs replacement)</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● Your municipality's capital improvement plan</li> <li>● Municipal staff observations</li> <li>● Municipal street maps</li> </ul>                 |
| <b>Natural Environment</b><br>Topography<br>Vegetation cover<br>Soils<br>Sensitive habitat areas  | <ul style="list-style-type: none"> <li>■ Describe in general (e.g., predominant topography) and in detail as feasible (e.g., large pervious or impervious areas)</li> <li>■ Describe areas susceptible to erosion</li> <li>■ Describe areas where infiltration (for treatment) is possible (from the viewpoint of soil quality, groundwater, etc.)</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● U.S. Geologic Survey maps</li> <li>● Municipal staff observations</li> <li>● Municipal park maps</li> </ul>  |
| <b>Other</b><br>Water quality monitoring stations   | <ul style="list-style-type: none"> <li>■ Describe water quality monitoring trends by location</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● RWQCB Basin Plan for your area</li> <li>● Municipal staff observations</li> </ul>   |
| <b>By Land-Use Types</b><br>Industrial<br>Commercial<br>Residential<br>Agricultural<br>Public roads<br>Municipal operations<br>Parking lots<br>Undeveloped/open space<br>Parks and recreation | <ul style="list-style-type: none"> <li>■ Describe numerically (e.g., number of parking lots), linearly (e.g., miles of road), by area (e.g., acres of open space), and/or by percentage (e.g., percent residential)</li> <li>■ Describe clustering of land-use types, if any</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● County Assessor's data</li> <li>● General plan documents</li> <li>● Municipal staff observations</li> <li>● Aerial photos, land-use maps</li> </ul> <p>Note: the land-use categories can be collapsed, expanded, and/or modified as appropriate.</p> |

Table continues on following page

Table 2-4 (continued). Elements of Municipal Assessment Working Map

| Mapped Features<br>The map should identify:   | Textual Companion<br>Each of the mapped features should be described:   |
|---|---|
| <p><b>By Specific Sources</b></p> <ul style="list-style-type: none"> <li>Auto repair shops*</li> <li>Auto wrecking yards*</li> <li>Boatyards/Marinas</li> <li>Corporation yards*</li> <li>Dry cleaners</li> <li>Equipment rental and storage yards*</li> <li>Furniture makers</li> <li>Gas stations*</li> <li>Golf courses</li> <li>Hospitals/medical facilities</li> <li>Landfills</li> <li>Landscaping activities</li> <li>Metal fabrication shops*</li> <li>Mobile cleaners*</li> <li>Nurseries</li> <li>Painting activities</li> <li>Photoprocessing</li> <li>Pool, spa, and fountain maintenance</li> <li>Pottery studios</li> <li>Printers/publishers</li> <li>Public water and wastewater treatment facilities</li> <li>Residential activities</li> <li>Restaurants*</li> <li>Tanneries</li> </ul> | <ul style="list-style-type: none"> <li>■ Describe numerically (e.g., number of vehicle service facilities)</li> <li>■ Describe clustering of potential sources, if any</li> <li>■ Describe pollutants expected from each type of source</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● Municipal staff observations</li> <li>● County Assessor’s data</li> <li>● RWQCB database</li> </ul> <p>Note: Specific sources will fall into the larger land-use categories. The sources listed here do not represent a complete listing of potential runoff sources, but rather a starting point for thinking about your own jurisdiction. Known significant sources are marked with an asterisk (*).</p> |
| <p><b>By Known “Hot-Spots”</b></p> <ul style="list-style-type: none"> <li>Illegal dumping area</li> <li>Cross connection with sanitary sewer</li> <li>Animal ‘walking’ area</li> <li>Leaking underground tank(s)</li> </ul>   | <ul style="list-style-type: none"> <li>■ Describe any known polluted runoff “hot-spots” in your area and how these problems became known, status of repair, etc.</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>● Municipal staff observations</li> <li>● Municipal enforcement proceedings</li> <li>● RWQCB</li> </ul>   |

As you develop your working map, opportunities for targeting specific problem areas or pollutant sources should become apparent. If you identify a clustering of restaurants upstream of an outfall location where observations or monitoring data have consistently identified the presence of detergents or grease, your commercial program can be supplemented with a program that targets the food service industry. Or maybe your assessment identifies general degradation of watershed resources (i.e., wetlands, streams, etc.) in a particular sector of your municipality, pointing to the need to target your program geographically. Or maybe your assessment results do not identify any readily apparent targets but rather point to the need for better water quality monitoring data. The possibilities are endless and each municipality's assessment techniques, results, and priorities will be different. Whatever you experience, remember that targeting priorities is particularly important when resources are limited — your URP should attack both the most important and the most easily approached problems first.

### Conclusion

While the more you “know” about the characteristics of your municipality the better, do not lose sight of the goal in your pursuit of quantifying everything within your jurisdictional boundaries (and/or the larger watershed). Remember that the minimum program elements do not require an expansive assessment to ensure NPDES Phase II compliance and CZARA Section 6217 consistency. However, if your municipality chooses to address additional issues relevant to your particular resource issues and constraints, the municipal assessment exercise can provide you with evidence to support that decision.

**The product of the municipal assessment should be a written report, developed from the working map and descriptive textual companion, summarizing your findings and supporting your program elements.**

# Model Urban Runoff Program

## City of Monterey Urban Runoff Characterization

2 Identification and Prioritization of Watershed Resources and Problems  
May 1997 Working Map

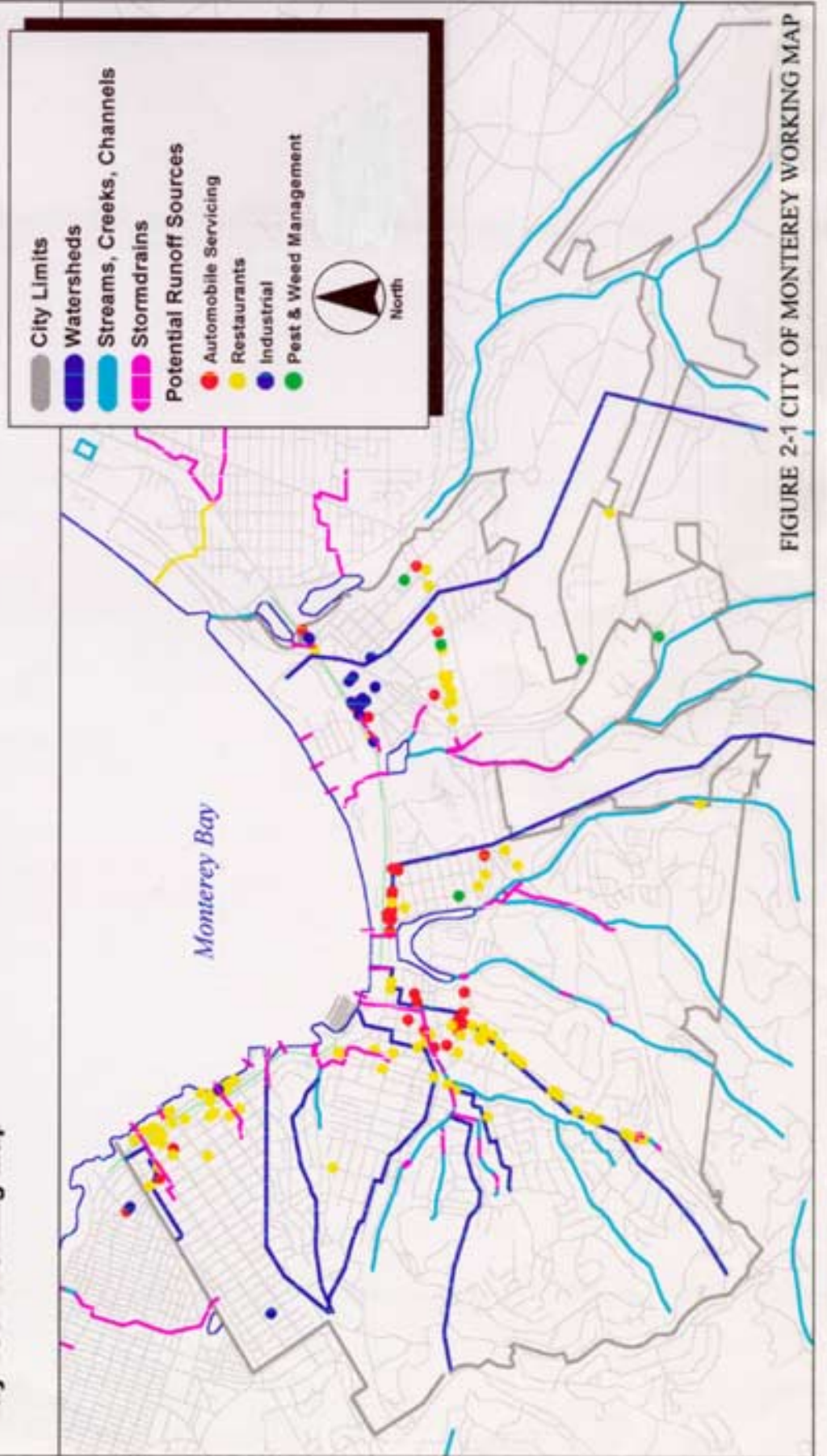


FIGURE 2-1 CITY OF MONTEREY WORKING MAP

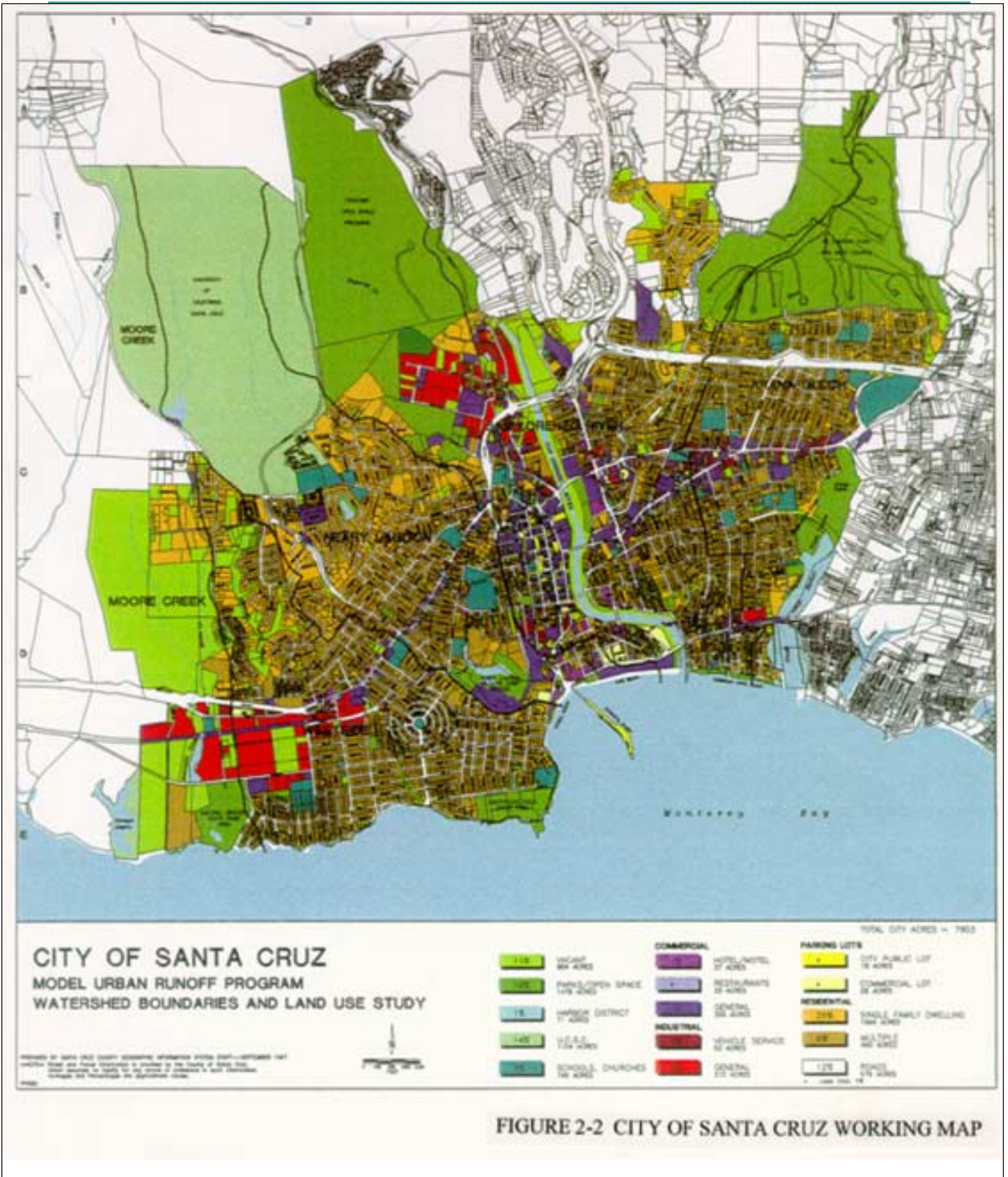


FIGURE 2-2 CITY OF SANTA CRUZ WORKING MAP