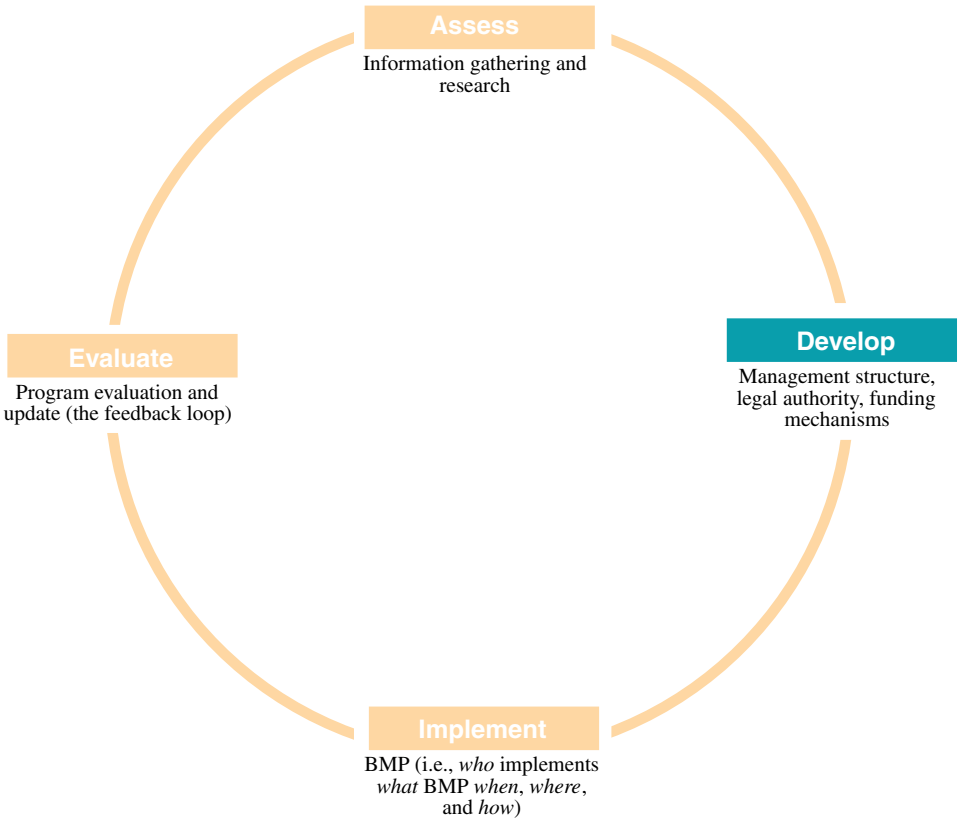
3 Development of Urban Runoff Program



3.1 Program Management

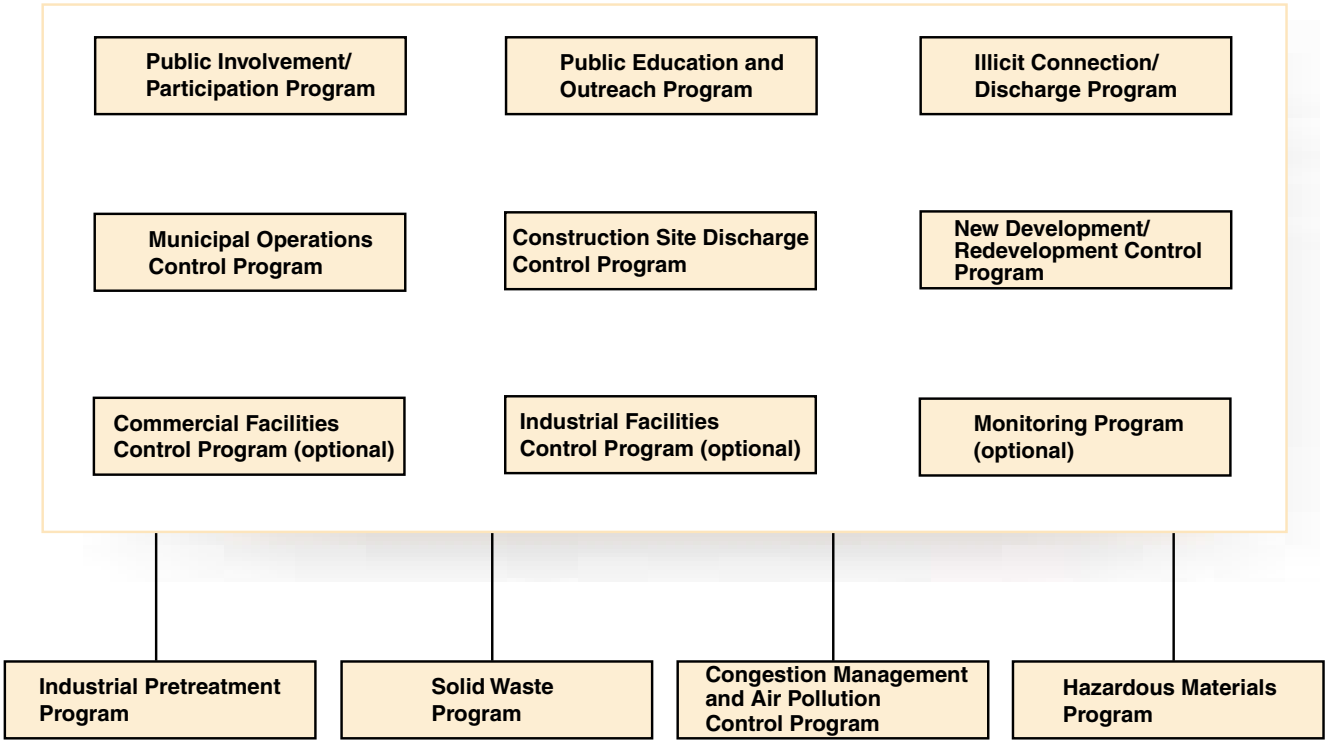
Given the variety of elements that make up an URP, its development and implementation require participation and coordination between numerous agencies and municipal departments. This section presents a picture of how your overall URP should look, describes the role of the lead department or oversight committee, identifies key departments for each of the program elements, and identifies areas where the lead department needs to ensure that urban runoff-related activities are coordinated.

Overall Management

The lead department or oversight committee is responsible for the URP's development and works with others to ensure that legal authority is established and that a funding source is identified and established. This lead entity is also responsible for conducting evaluations of the program and reporting to the governing and permitting authorities.

Figure 3-1 shows the various elements or control programs that make up an URP, including some other environmental programs that you are likely to coordinate and even share resources with.

Figure 3-1. Urban Runoff Program and Supporting Programs



Management of Program Elements

Some ideas on how to manage your program elements are presented below:

- ✓ The **Public Involvement and Participation Program** should be managed by the lead department or committee in charge of the overall URP. This program is integral to the entire development process and requires an intimate knowledge of all aspects of the URP. This program is the public's initial contact with the URP concept, and must be headed by staff who convey a good image as well as bring back public input to each of the programs. This program must also be closely coordinated with the public education and outreach program.

- ✓ The **Public Education and Outreach Program** should be developed and coordinated with any public education efforts currently underway in your municipality. This program can be managed by a number of departments in the municipality. A public education person or a public relations/media coordinator is an obvious fit. Another option is to contract this program out to an individual or another local agency that does public education campaigns. This program works well on a regional basis as it can save on personnel and printing costs, and it ensures that a consistent message is being conveyed to the public.

- ✓ The **Illicit Connection/Discharge Program** is likely to be managed and implemented by (1) wastewater or industrial waste inspectors, (2) building inspectors, (3) streets maintenance, (4) code enforcement, or any combination of the above. The City Manager's and/or City Attorney's office could be involved if a serious noncompliance problem is noted.

- ✓ The **Municipal Operations Control Program** is specifically for the day-to-day operations of the municipality, and includes numerous departments. An initial training should be held for each department affected by this program to set goals and define any changes that should be made; then the program becomes the responsibility of each affected department. The lead entity should be responsible for obtaining data for yearly reports from each implementing department.

- ✓ The **Construction Site Control Program** should be included as part of any existing inspection efforts for projects in your jurisdiction. Any building inspectors (e.g., Building Officials, construction management, or project development representatives, etc.) can add proper site controls to inspection lists.

- ✓ The **New Development/Redevelopment Control Program** should be integrated into current practices within the Planning and Public Works Departments. The Planning Department issues development permits, performs CEQA review, and comments and makes recommendations on plans. This program must begin with recommendations and requirements for mitigating the effects of new development on storm water conveyance systems and water quality. Often the Public Works Department is also involved in site plan reviews in

which they should implement requirements for on-site storm water structures and future maintenance of those structures. This process should be coordinated between the two departments to minimize overlap and ensure that requirements are implemented.

- ✓ The **Commercial Facilities Control Program** includes some public education, technical training, and later, site inspections. Either one department or a team can implement this program. Public education and involvement for this program consist of meetings held during the development process to gain input from those affected by any new requirements (BMPs). Technical training is required to teach employees of commercial facilities how to implement BMPs, and later site inspections measure the success of the program and lead to enforcement actions if necessary. One department should manage all aspects of this program, though coordination with public education and outreach and other programs is required. If a department within your agency already does commercial site inspections, then incorporate this program into existing procedures. Possible managers include individuals from an industrial waste inspection or building inspection division, or it may be best to coordinate this program with your county environmental health department.

- ✓ The **Industrial Facilities Control Program** is included here as an optional program because many significant industrial facilities are required to have an NPDES permit or other environmental regulatory program in place, which should reduce the potential for polluted runoff to enter a municipal storm drain system. If the municipality decides to implement its own program, it could be run by an industrial waste inspection division, wastewater inspection, or public works.

Coordination Between Program Elements

Here are some ways to ensure coordination between the multiple players involved and to reduce the potential for confusion:

- ✓ Based on the experience of NPDES Phase I municipalities, it is recommended that the lead department or oversight committee convene meetings of representatives of all departments and agencies responsible for specific program elements during the development stage on an as-needed basis; regular meetings should be scheduled during the implementation phase. The objectives of these meetings are for all involved to report on work completed, hear about problems encountered or envisioned, and hear what others in the municipality are doing. These meetings are useful in developing ideas on sharing resources, avoiding duplication of effort, and providing a coordinated consistent message on management of urban runoff pollutants.

- ✓ Note that site inspections for existing development are a component of three program elements: illicit connection/discharge, commercial facilities, and industrial facilities control programs. To avoid problems associated with mul-

tiple inspections, consider combining the inspection/site visit function from all these programs under one agency/department. If you do not choose to combine the inspection function, then make sure the inspectors under each program are informed about the other programs so that they do not convey conflicting messages to the affected businesses and the public.

- ✓ Site inspections are also involved in construction site and development control programs. These inspection functions can and should be combined because the inspector checking for construction controls can also check to see if postconstruction controls are installed.

- ✓ Both the municipal operations and the commercial facilities control program likely involve implementation of BMPs related to building maintenance and repair and vehicle service facilities. Make sure that the BMPs you are requiring the commercial operators to implement are the same you are requiring your own municipal staff to adopt and implement. Inspections should take place on the same schedule and should require the same types of modifications. Remember that your municipal program should provide a model that the private sector can emulate.

Coordination with Other Supporting Programs

Since several existing environmental programs indirectly reduce urban runoff pollution, use them to the extent possible.

- ✓ For instance, many municipalities are extending their solid waste pickup service to include curbside pickup of used motor oil. Your URP could share the costs of this effort, which can reduce incidents of used motor oil being discharged to the storm drains.
- ✓ Consider using a single hotline number for all calls related to urban environmental issues — urban runoff, hazardous materials, recycling, or solid waste. You may want to do it on a coordinated regional basis.
- ✓ In urban settings, many of the pollutants in runoff come from automobiles — either as tailpipe emissions picked up by rain and carried into the storm drain system or as particulates from the wear, tear, and operation of vehicles (brakepads, tires, drips). Support your local congestion management agency to reduce vehicle trips in your area and also help clean up the water.

3.2 Institutional Arrangements/Coordination

A municipality's URP may be implemented with a variety of institutional arrangements. Small municipalities are not expected to develop an entirely new program on their own. Many aspects of URPs can be developed and implemented by building on and coordinating local, existing institutional arrangements:

- ✓ A municipality may choose to develop and implement a program on its own. Existing internal arrangements may already accommodate key components of an URP, or at least provide the basic building blocks. For example, many municipalities have assigned illicit connections and discharge detection and elimination activities to their wastewater department. This approach has been efficient because the staff is already trained to conduct inspections, has experience working with underground sewers and storm drains, and has the equipment for sampling.

- ✓ A municipality may also consider joining an existing URP in an adjacent municipality. This approach is recommended to small municipalities to help reduce their program development costs. Note that if an existing program is operating under an NPDES Phase I permit, the permit can be modified to accommodate a new municipality. However, NPDES Phase II municipalities are advised to consider the pros and cons associated with joining a Phase I URP as listed in Table 3-1.

- ✓ A municipality may consider creating a joint program with other nearby municipalities. This approach to working with other municipalities has taken the form of Memorandums of Agreement/Understanding (e.g., municipalities in Santa Clara and Alameda counties) and Joint Powers Authority (e.g., municipalities in Marin County). A sample agreement is presented in Appendix 3A. In the event that you decide to develop a joint URP with other adjacent municipalities, you need to consider the following issues:

Table 3-1. Advantages and Disadvantages of Joining a Phase I Urban Runoff Program

Advantages	Disadvantages
■ Uniform program in urbanized areas ■ Share administrative expenses and staff expertise ■ Share of monitoring costs, if required, of small municipalities ■ Phase I municipalities could, by agreement, implement control measures ■ Earlier program implementation and improvement to water quality and protection of beneficial water uses ■ Could be a small entity or source if a watershed approach is implemented and could rely on municipalities areawide program to represent and support interests ■ Phase II municipalities would not be required to develop program	■ Could require implementation of control measures beyond the six minimum control measures ■ Individual NPDES program could receive greater regulatory scrutiny than small municipalities regulated under a general NPDES permit ■ Potentially more comprehensive reporting requirements ■ Water quality monitoring required ■ Requires compliance with all applicable requirements of Section 122.26 of the regulations including those for Phase I and terms and conditions of the applicable permit

- Determine the formal institutional arrangements used to make decisions for each co-permittee. The mechanism for making decisions may be a Management Committee made up of co-permittee representatives. The Management Committee needs to evaluate how its responsibilities fit into the overall URP framework, how it communicates and coordinates activities, what its authority is, and what its procedures for decision making are. The Management Committee needs to formalize any agreements by adopting official bylaws.

- Subcommittees may also be formed to address specific program elements. Each subcommittee should define its focus, participants, tasks to be accomplished, and the time frame allowed to accomplish the tasks. Ideally, all co-permittees should participate in at least one subcommittee. Each subcommittee should define a chairperson responsible for maintaining written documentation of subcommittee deliberations and recommendations, to the extent needed to achieve the subcommittee's objectives. Some examples of possible subcommittees include a Monitoring and Special Studies Subcommittee, a Municipal Operations Activities Subcommittee, or a Policy Level Subcommittee.

- A lead agency should also be identified whose responsibilities may include coordinating day-to-day business, scheduling meetings, and representing the URP at external meetings. However, the lead agency should assume no responsibility for specific programs, and should not be viewed as the responsible agency for the permit (because the entire program area should be responsible for the URP's implementing).

✓ An alternative to a full joint program is project/program element-specific agreements. Informal cooperative agreements can effectively share staff and financial responsibility for a specific project, such as developing outreach materials.

✓ A municipality can arrange for another governmental or other entity to implement appropriate control measures or BMPs (with memorandums of agreement or contracts). For example, a municipality can arrange to have a citizen's monitoring group conduct visual inspections and/or collect samples to supplement lack of staff or financial resources. Similarly, a municipality can utilize the expertise of a local resource conservation district for review of applications for grading permits for inclusion of established BMPs.

✓ A municipality can coordinate with existing, local watershed-based or regional programs. For example, in the Monterey Bay region, municipalities can coordinate with the Water Quality Protection Program for Monterey Bay National Marine Sanctuary, a partnership effort among 25 federal, state, local, and nonprofit groups to address water quality issues including urban, marina, agricultural, and monitoring. Pooling local resources helps to develop joint urban education products and outreach and volunteer programs that can be used

throughout the region. It also works with various local jurisdictions to help obtain grant funding for urban runoff projects, and to identify a variety of existing watershed-related government and volunteer efforts in the region that can partner with the cities in their URPs. The program's various committee members and watershed efforts can provide a coordination link for local jurisdictions in building their programs.

- ✓ A municipality may chose different implementation mechanisms for different elements of the program using some hybrid of the above-described arrangements.

Using local, existing institutional arrangements has several advantages. Time and money can be saved by avoiding reinvention of the wheel or duplication of effort. An upfront effort to review potential arrangements within a municipality, as well as those previously developed by other municipalities and programs, is a worthwhile investment. Additionally, coordination and consistency within a municipality, with adjacent municipalities, and with other programs in the area is beneficial. This effort may "level the playing field" for dischargers, businesses, and property owners participating in or affected by the URP. These parties are invited to participate and are affected similarly by all URPs within a geographic region, which is highly preferable to dealing with one approach in one municipality and a different approach in the municipality next door. Additionally, good coordination and consistency facilitate keeping regulatory agencies informed and more able to provide assistance.

3.3 Legal Authority

This section describes the various actions that may be required to establish the legal authority to develop, implement, and enforce an URP in a municipality. Each municipality decides the extent to which each of these actions is necessary.

In California, the following three mechanisms/tools can be used as legal authority for an URP: an ordinance, a General Plan element (including Local Coastal Program provisions for coastal zone areas), and CEQA. For a municipality, the ordinance is the ultimate legal authority to control all improper discharges to the storm drain system. The General Plan or Local Coastal Program amendment can be used to establish policies, especially to control runoff from new development and redevelopment. The CEQA process can also be used to control urban runoff from new development. At a minimum, each municipality has to ensure that an ordinance provides adequate authority to enforce the program, and that the General Plan supports the URP's objectives.

Model Ordinance

Clean Water Act Section 402(p)(3)(B)(iii) notes that municipalities "Shall require controls to reduce the discharge of pollutants to the maximum extent practicable,

including management practices, control techniques and system[s], design and engineering methods, and such other provisions as the [EPA] Administrator or the State determines appropriate for the control of such pollutants." This section requires municipalities to adopt and implement a set of BMPs that control pollution to the maximum extent practicable. To make such a program work, municipalities need to have the legal authority to implement and enforce BMPs written into their code. Similarly, CZARA Section 6217 requires that the CNPCP include management measures that can be implemented by "unforceable authorities" such as ordinances.

A model ordinance is included in Appendix 3B. A municipality's Legal Counsel should review this model ordinance, discuss the implications of ordinance sections with those involved in developing the municipality's URP, and amend the language as appropriate. The Model Ordinance included in this document is comprehensive and includes sections that provide the legal authority necessary to implement the entire range of control programs necessary to protect water quality.

The Model Ordinance references the adoption of the BMP Guidance Series in Section 31.5-16(c). The BMP Guidance Series is an update table set of prescribed BMPs. A municipality may choose not to include this section if it decides not to explain how to control discharges in the ordinance. Most NPDES Phase I municipalities have elected not to reference any other documents in their ordinance, but have limited the scope of the ordinance to establishing legal authority to control nonstorm water discharges from the storm drain system.

General Plan and/or Local Coastal Program Amendment

California state law requires that each city adopt a General Plan for developing the area under its jurisdiction. Cities and counties within the coastal zone are also required to adopt a Local Coastal Program, which may be a stand-alone plan or may be found within the General Plan. A General Plan must include seven elements that together compose an integrated set of goals, policies, and action programs: land use, circulation, housing, conservation, open space, safety, and noise. In addition, a municipality may adopt optional elements that relate to the physical development of the community. Because of the overlap in subject matter, General Plan and/or Local Coastal Program elements can often be combined.

The General Plan and/or Local Coastal Program contains two approaches to incorporating urban runoff and water quality controls: (1) the addition of a comprehensive stand-alone element or (2) the insertion of essential statements within existing elements of the General Plan and/or Local Coastal Program. For any municipality, the first step in deciding which approach to choose should be a comprehensive review of its existing General Plan and/or Local Coastal Program done by the department responsible for maintaining the General Plan and/or Local Coastal Program with input from implementers of the water quality and quantity management additions. In many municipalities responsible departments include Planning, Public Works, Police (for code enforcement), and Fire (hazardous materials).

The language presented in Appendix 3C includes information taken from a number of San Francisco Bay Area cities who have conducted the General Plan review process pursuant to NPDES Phase I requirements. The sample language is intended as recommendations for inclusion in future revisions and amendments to general plans and local coastal programs by small municipalities. The first section is the "Comprehensive Stand-Alone General Plan Element," which is a self-sufficient water quality element that may be adopted as it is worded. The second section is a "List of Recommended Amendments to Existing General Plan Elements," broken into the seven required General Plan elements that should be standard for each municipality in the State of California and intended as a list of additions to the existing elements in the municipality's General Plan. Dependent upon the relationship of the General Plan to the Local Coastal Program, these modifications may also be necessary within the Local Coastal Program.

California Environmental Quality Act Checklist Revisions

The CEQA process consists of project assessment guidelines to be used by local governments in the planning process for new development and redevelopment. Those guidelines, while concerned with the environmental impacts of such development, often overlook the problems associated with urban runoff pollution from development.

The CEQA checklist revisions that are included in Appendix 3D are intended to provide planners with tools and information about urban runoff pollutants that they can use in the evaluation of new development or redevelopment projects. The packet is self-explanatory so that it can be given as a stand-alone element to those who will implement it within the municipality (typically the Planning/Community Development Department).

3.4 Fiscal Resources

One of the most important factors that must be examined when embarking on the development and implementation of an URP is identifying how it will be financed (see Table 3-2). Most local governments do not have the means to finance such a program from existing fiscal resources, so alternate financing mechanisms must be created. Since the November 1996 passage of Proposition 218 in California, which requires that a vote of the people must be taken before taxes can be levied or raised, funding mechanisms for URPs have become an even more challenging issue for California municipalities.

Urban runoff funding has in the past been accomplished through such mechanisms as bond measures for capital improvements, general funds, or special fees (e.g., utility fees). Throughout the NPDES Phase I program, municipalities spent a considerable amount of time and fiscal resources developing their storm water management plans, monitoring, and trying to obtain permits that were in compliance

Table 3-2. Estimated Staffing Requirements for Urban Runoff for Small Municipalities

Program	Activities	Staff/Department	Annual Hours	Annual Cost
Public Involvement	Coordinate with volunteers, event coordination and attendance	▪ Jr. and Asst. Civil Engineers ▪ Sanctuary Coordinator	600 400	City - $14,000 Sanctuary - $8,500 Printing - $10,000
Public Education and Outreach	Coordinate printing of materials, teacher workshops, loaning of tools	▪ Jr. and Asst. Civil Engineers ▪ Sanctuary Coordinator	200 300	City - $15,000 Sanctuary - $3,500 Contractor - $6,000
Illicit Connection/ Discharge Detection and Elimination	Inspections, response to citizen complaints, follow-up	▪ Jr. and Asst. Civil Engineers ▪ Maintenance Division ▪ Building Division ▪ Code Enforcement	500	City - $25,000
Construction Site Control	Develop requirements, SWPPP preparation, inspections	▪ Jr. and Asst. Civil Engineers ▪ Building and Public Works Inspectors	400	City - $20,000
New Development/ Redevelopment Control Management	Develop requirements; incorporate into site plan review, CCRs; follow-up	▪ Jr. and Asst. Civil Engineers ▪ Planning Dept. ▪ Site Plan Review	400	City - $20,000
Municipal Operations	Develop division requirements checklists; technical training for staff	▪ Jr. and Asst. Civil Engineers ▪ Maintenance Divisions	500	City - $25,000 Materials - $10,000
Best Management Practices for Commercial/ Industrial Facilities	Development of BMPs and training materials; printing; outreach and enforcement	▪ Jr. and Asst. Civil Engineers ▪ Code Enforcement	1000	City - $50,000 Materials - $20,000

Source: City of Monterey (1998).

with the federal regulations. NPDES Phase II municipalities should be able to reduce costs of preparing their management plans and application materials, because they should be able to build on the experience of Phase I municipalities. However, if your municipality does not have a storm water utility or other funding source established when you begin developing your URP, funding for the first few years may need to come out of the general fund.

Funding Urban Runoff Programs

Most cities have two alternatives to using general funds for urban runoff-related activities: to establish a citywide benefit assessment for all property owners, or to institute a user fee for allocating program costs to users of the storm water system.

Assessment Districts

A benefit assessment utilizes a special assessment district to recover specific costs on an equal basis from all properties deemed to receive benefits from those costs. Assessment districts are based on the special benefits that public improvements

confer upon assessed lands. Since drainage projects result in improvements to specific areas of the municipality, this approach is a piecemeal solution as it requires that the money collected for the assessment district be spent on improvements and maintenance to only those specific areas.

An alternative is a citywide assessment district. Although structural improvements could be funded through the use of a citywide benefit assessment, NPDES and NPS/CZARA compliance requirements are mostly operational. The legality of funding operational expenses through assessment districts is questionable. In addition, these assessments typically require voter approval. As a result, assessment districts should be used only for capital improvement projects.

Storm Water Utility Fees

Storm water utility fees are charges applied to a municipality's customers for services provided by that utility and are collected through an established schedule and method. The fee is based on the actual benefit of service and may provide for all or just a portion of the utility's cost of providing that service. A storm water utility is established by ordinance with the actual user fee established by resolution.

The storm water utility fee is often based on impermeable area calculated on a parcel-by-parcel basis throughout the city. The basic unit of measurement for the fee is often taken to be the average impermeable area of a single-family dwelling. All single-family dwellings are then charged the equivalent of one unit and other types of properties are charged based on their square footage and percentage of impermeable area. The basic units of measurement are variously called "Equivalent Residential Units," "Equivalent Storm Water Units," or "Basic Assessment Units." The utility fee is calculated by taking the required budget for necessary storm drain operations and maintenance, capital improvements, and emergency projects, or some portion thereof, and dividing by the number of equivalent units throughout the city. A municipality may choose to pay for a portion of the storm water operations and maintenance costs using other funds, or to fund all costs through the utility. This method is often the best for funding the URP when existing sources prove insufficient. Table 3-3 presents the residential monthly rates established by selected municipalities to fund their URPs.

Table 3-3. Examples of Single-Family Storm Water Fees in California

City	Year Authorized	Average Monthly Rate
Sacramento	1982	$11.31
Palo Alto	1990	$4.25
Santa Clarita	1994	$2.67
Monterey	1994	$2.76
Santa Cruz	1994	$1.77
Average		**$4.25**

Exemptions

When setting up a utility fee, a municipality may choose not to allow exemptions for any properties except those that remain completely undeveloped (zero impermeable area). Some municipalities allow an exemption (which would constitute a type of discretionary exemption) for low income, elderly persons, or nonprofit groups such as churches and schools. However, since the urban runoff utility fee is based on impermeable area and associated contribution of runoff that necessitates operations and maintenance activities, exemptions should be based on elimination or reduction of those runoff flows. For example, exemptions or credits may be considered for properties that can reduce their runoff to predevelopment flows through the installation of detention ponds or for properties that install retention ponds and reuse their captured rainwater for landscaping, flushing toilets, or for other on-site uses. Credits could also be based on whether (1) the property has on-site storm water facilities such as retention basins, (2) the on-site storm water facilities are privately maintained, and (3) the facilities are inspected and maintained to function as designed.

Public Education/Involvement

The introduction and/or adjustment of urban runoff utility fees requires a great deal of public outreach and involvement throughout the development process. The public first needs to understand the problem that is being addressed. Why are they paying for urban runoff management? Hasn't the municipality always taken care of that? Once the public understands the problem being faced and the costs involved, a willingness to pay the necessary fees is more likely. Public outreach to neighborhood associations, business associations, and large property owners is essential to an URP that will be supported throughout the municipality. Without public support at all levels, water quality preservation will not be a cooperative effort. Public education, outreach, and involvement are covered in greater detail in Sections 4.1 and 4.2.

Appendix 4A presents a sample of a briefing that can be made to neighborhood and business associations in your municipality. These materials can be tailored to your needs and requirements.

Ordinance and Resolution

The ordinance and resolution in Appendix 3E are examples of the mechanism that may be used to incorporate the utility fee into the municipal code. It is important that the municipality establish an ordinance specifying that the fee is established separately by resolution, because the adjustment of that fee is inevitable. With a fee established by resolution, it is much easier to change the fee without going through the ordinance process and amending the entire utility structure each time those fee adjustments take place.

The ordinance creates the urban runoff utility, appoints the manager of that utility, and gives the authority to City Council /Board of Supervisors to establish an urban runoff utility fee. The management of the utility is most often assigned to the department responsible for operation of the storm drain and surface water system, often the Public Works or Maintenance Department.

Billing

Two existing methods can be used to bill stormwater utility fees: your county's tax assessment system or an existing utility billing system. Either option requires a detailed calculation of the impermeable area of each commercial and multi-family residential parcel in your jurisdiction and a calculated average impermeable area for single-family parcels. The costs associated with the two alternatives are comparable.

County Tax Assessor

The county assessor's office takes care of the property tax billing for all property owners in the county and can also be used as a billing mechanism for user charges by municipalities when the municipality does not have its own billing mechanism.

The advantages of using the county tax assessor's billing system are many. The percentage of collection is usually high. The municipality receives minimal customer service calls as it is a semiannual bill. The mechanism is in place. The disadvantages include high billing costs, initial billing errors, expensive setup fees, and cash flow limited to twice a year. Additional concerns have been raised about this method of billing with the passage of Proposition 218 in California. The distinction between a tax and a user fee becomes blurred if the user fee is collected along with property taxes.

Utility Billing System

The municipality may choose to use a utility billing system that is already in place for the collection of the storm water utility fee. That billing system may be either a municipal system or it may be a separate utility with which the city has a contract.

The advantages of using the utility billing system include a flexible schedule for fee implementation and continuous cash revenue. The disadvantages include the sorting required (because this fee applies only to utility customers within city limits), possible special handling of utility accounts billed to renting tenants, and higher initial customer calls and complaints than under the tax mechanism. However, this system is overall more flexible for initial implementation and later fee adjustments.

Other Funding Sources

Taxes

Taxes that could be used to generate revenue for the URP include commodity taxes, tax surcharges, or real estate transfer taxes. However, the passage of Proposition 218 in California requires a vote of the people to impose any of the above taxes, making these strategies difficult if not impossible to use.

Fees

User fees are the most effective way of recovering the costs of providing a service and can be tied directly to users of a resource or facility. One example of a user fee is the State of Maryland's license plate program to fund its Chesapeake Bay Trust. The license plates are sold for $10 each and have raised over $4 million.

Plan review fees can be assessed by local planning or public works departments that review development plans. The technical review includes storm water management facilities and wetland protection. Inspection fees can be charged to cover the costs of on-site inspection of erosion and sediment controls, BMP implementation, and wetland protection. Both of these fees can help to cover the cost of staff time and resources spent on private development sites.

Impact fees are charged to cover the costs of infrastructure needed for private development . These fees are usually collected as a lump sum from developers or property owners who receive a direct benefit from the project. These fees have been used for roads, sewers, and storm water improvements.

Bonds/Debt Financing

Bonds or debt financing raise capital at the beginning of the project and distribute the burden of repayment over the life span of a capital project among those who receive direct benefit. Bonds are generally used to finance projects that have proven life expectancies. Short-term bonds have a life of 1 year or less, while long-term bonds have a life equal to a project's life expectancy.

State Revolving Funds

State Revolving Funds (SRFs) were established by the CWA Amendments of 1987 by EPA grants and matching state funds. These SRFs provide long-term, low-interest loans to local government for major capital projects including storm water and wastewater improvements. The State of California uses its SRF for nonpoint source projects. Eligible projects include construction of demonstration projects, retention/detention basins, and a variety of BMPs to reduce or remove pollutants.

Grants

Grants are sums of money awarded to state or local governments or nonprofit organizations that do not have to be repaid. Grants are awarded for a specific project or activity with secific criteria that must be met before funds can be acquired and spent. Many private and public sources of grant funds are available. A good reference is the EPA.

Sources of Additional Information

American Public Works Association (APWA). 1991. Financing Stormwater Facilities: A Utility Approach. Available through APWA Publications; call (816) 472-1610 x3560.

Water Environment Federation (WEF). 1994. User-Fee-Funded Stormwater Utilities. Available through APWA Publications; call (816) 472-1610 x3560. Order Number: PB.XUFF

U.S. Environmental Protection Agency (EPA). 1996. Protecting Natural Wetlands: A Guide to Stormwater Best Management Practices. Available through Office of Water (http://www.epa.gov). Document No. EPA-843-B-96-001. October .