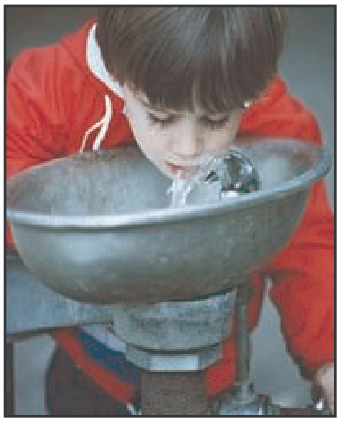
Water, Sewer, and Storm Drain Systems



Manhattan Beach's Water Quality Coordinator regularly samples water from throughout the City and sends these samples to an independent laboratory for analysis. Manhattan Beach maintains an excellent record for having provided safe, high-quality water to its residents for nearly eight decades.

The City's water, sewer, and storm drain systems support development in Manhattan Beach. These systems must be maintained in good condition to ensure that residents and businesses can reliably turn on a tap, run the washing machine, or serve customers food and beverages. As infrastructure ages, isolated failures represent a real potential. To preserve high service levels, water and sewer lines will need to be maintained, replaced, and/or expanded to maximize efficiency and increase capacity. For new development, the infrastructure must be able to support additional needs and demands without burdening current users.

The City maintains the local water distribution, sewage collection, and storm drain systems. Water is purchased from wholesale providers, and the City is responsible for storage and distribution. Sewage collected in laterals and City trunk lines flows into regional lines maintained by the Sanitation Districts of Los Angeles County. With regard to flood control, City storm drains direct runoff into major County-owned channels and other facilities maintained by the Los Angeles County Department of Public Works (LACDPW).

Water History in Manhattan Beach

In the early 1900s, prior to provision of a coordinated water system, water wells and tanks served the needs of the growing population. Water tanks were perched at the highest points on sand dunes and used gravity to deliver water to the relatively low number of households at the time. The first water well was located near 10th Street and Highland Avenue. Another well and tank were located at 16th Street and Highland Avenue. Poor service forced many residents to retrieve water by carrying it back in buckets for household use. Water was eventually provided by the Hermosa Beach Land and Water Company, costing $10 per year per resident. After the City's incorporation in 1912, bonds were issued to establish the first municipal water plant and system consisting of 23 miles of pipeline. This system was not extensive enough to benefit everyone within Manhattan

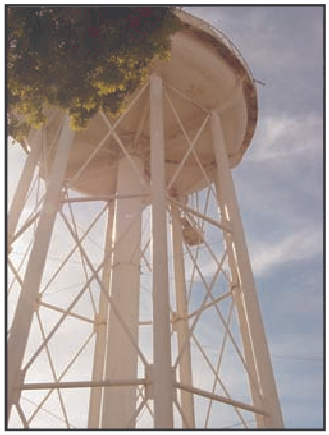
Beach. Improvements to the water system came later, including several elevated water tanks. In the 1940s, a federal Work Progress Administration (WPA) project included the construction of a Water Department Building and water well. Many water towers and elevated tanks have been built throughout Manhattan Beach's history, including a 145-foot-high tower built in the 1920s on Sepulveda Boulevard. The only tower standing is an elevated water tower, designed and built in the late 1940s, located at Rowell Avenue and 6th Street. The tower was structurally anchored and retrofitted in the mid 1990s. This tower is now mainly used as a backup system and for pressure control and not for storage.

See Community Resources Element, Parks and Open Space Section, for a description of other Block 35 improvements.

Providing the Community with Water

Manhattan Beach obtains water from three sources: (1) Metropolitan Water District (MWD) treated surface water from Northern California and the Colorado River, which is provided to the City by the West Basin Municipal Water District and represents over eighty percent of the local water supply; (2) groundwater extracted by City-owned and operated wells; and (3) reclaimed water supplied for landscape irrigation from the West Basin Municipal Water District. Manhattan Beach owns the right to pump 3.8 million gallons per year of groundwater from the West Coast Basin. Imported water flows to Manhattan Beach via 45-inch MWD line in Manhattan Beach Boulevard.

See Community Resource Element for a detailed description on water conservation.



The elevated water tank located at Rowell Avenue and 6th Street was built in the late 1940s.

Water Facilities

The City's water system consists of pump stations, storage reservoirs, an elevated storage tank, water supply wells, a settling basin, and approximately 112 miles of distribution pipelines (Figure I-9). Given that Land Use Policy (Figure LU-3) accommodates a very modest level of growth in the City, these facilities will not require any substantial expansion to meet long-term needs. The City's efforts will focus on maintenance and replacement as needed. Pursuant to the *Water System Master Plan,* the City replaced the deteriorating roof of the Peck Reservoir in 2000, which should extend the reservoir's life by about 25 years.

Table I-2
Water Reservoir Capacity

Name	Type	Location	Capacity in million gallons
Peck Reservoir	Underground reservoir	Peck Ave. and 18th St.	7.5
Block 35 Reservoir	Above ground reservoir	Rowell Ave. and 6th St.	2.0
Water Tower	Elevated tank	Rowell Ave. and 6th St.	0.3
		Total	9.8

Source: Manhattan Beach Water System Master Plan, April 1994

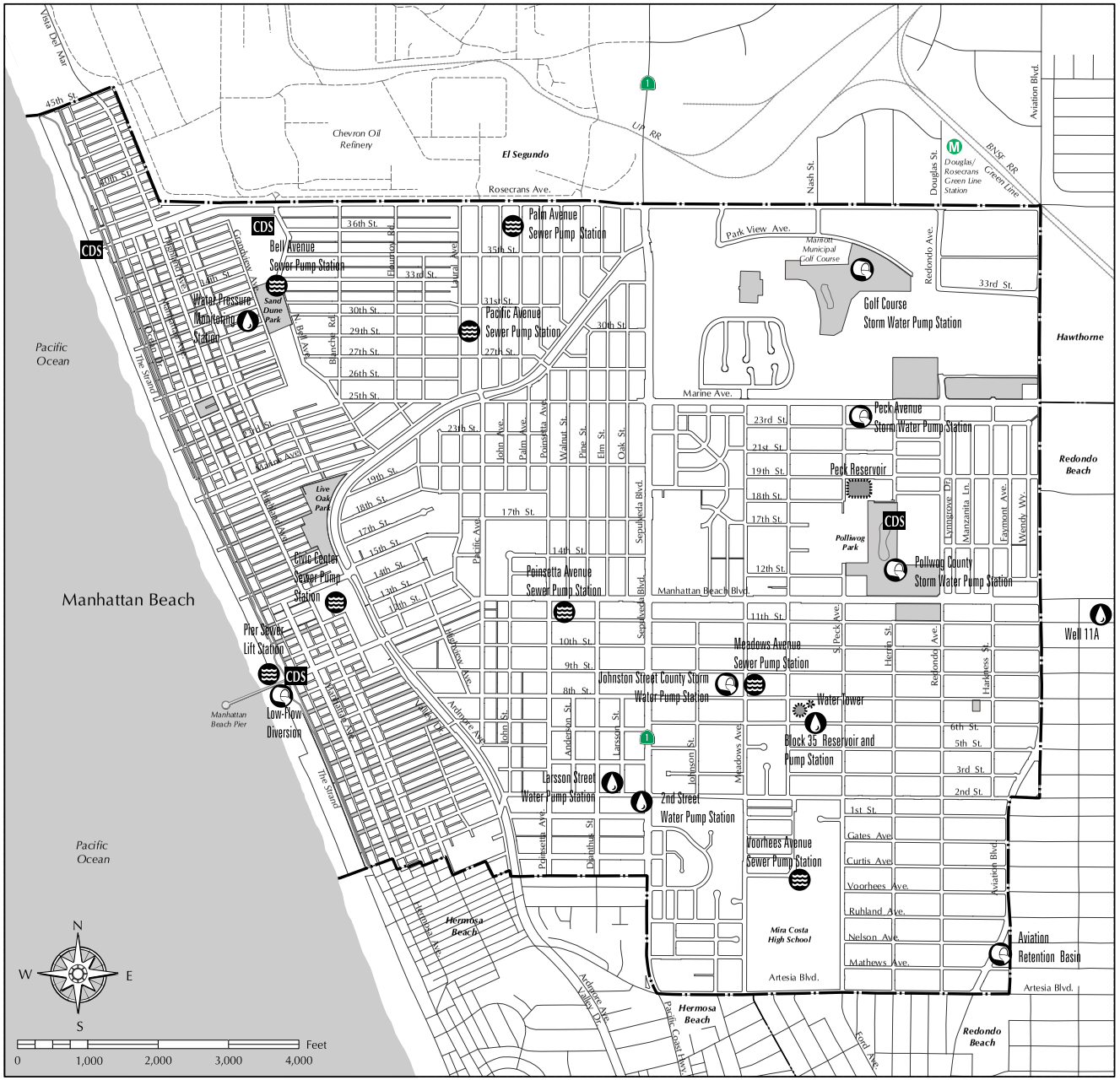
In addition to these facilities, the City provides access to reclaimed water supplies via a major pipeline in Marine Avenue. Reclaimed water can be used for landscape irrigation and some industrial uses, and can reduce demand on potable water supplies.

Goals and Policies: Providing the Community with Water

Goal I-7:	**Maintain and protect a reliable and cost effective water supply system capable of adequately meeting normal demand and emergency demand in the City.**
Policy I-7.1:	Periodically evaluate the entire water supply and distribution system to ensure its continued adequacy, reliability, and safety.
Policy I-7.2:	Ensure that all new development or expansion of existing facilities bears the cost of providing adequate water service to meet the increased demand which it generates.
Policy I-7.3	Support the exploration of the feasibility of desalinated seawater as a reliable potable water source.

Policy Discussion

Desalination has long been prohibitively expensive as a source of drinking water in California. But rising demand, dwindling



* Well 15 is located approximately 1/2 mile east of Well 11A in the City of Redondo Beach.

Source: City of Manhattan Beach General Plan, Public Works Department; 2002.

MANHATTAN BEACH GENERAL PLAN

Figure I-10

Water, Sewer, and Storm Drain Facilities

MANHATTAN · BEACH · GENERAL · PLAN

supply, and new technology that makes it cheaper to take the salt out of seawater are changing the economics of desalination. The West Basin Municipal Water District, along with a conglomerate of other water agencies, continues to pursue funding from Metropolitan Water District for a possible desalination plant in the South Bay.

Sewage Collection and Treatment

Early in Manhattan Beach's history, sewage was disposed of into cesspools located at the end of each street before connecting to a trunk line to the Hyperion Sewage Plant in El Segundo. The City's wastewater system was constructed between 1925 and 1994, with almost 85 percent of the system built prior to 1954. A major post-war project in the late 1940s was a new sewer system and sewer pumping station under the Strand and 27th Street, which allowed sewage collection in the western portion of the City to join with the County Sanitation District #5 system in the east portion of the City.

Today the City owns, operates, and maintains the local wastewater collection and pumping system (Figure I-7). Collected effluent is treated at the Joint Water Pollution Control Plant in Carson, operated by the Sanitation Districts of Los Angeles County. The sewer main to Carson tunnels under Sand Dune Park and connects the east and west portion of the City. The collection system appears to serve the City adequately. The City has undertaken a complete inspection of the entire system via videotaping, and priorities for line replacement have been established to ensure long-term reliability.

New development in Manhattan Beach will consist of the recycling of established uses, as older homes and businesses are torn down and replaced with new. In the case of single-family residences, the trend toward larger homes is expected to continue. Larger homes with more plumbing fixtures have the potential to increase sewage generation, although on balance, newer plumbing can be more efficient. Given the capacity and age of sewer lines, the City will develop a comprehensive strategy to address: (1) minimizing new demands on the sewer system, and (2) replacing and upgrading facilities in critical need of such.

Goals and Policies: Sewage Collection and Treatment

Goal I-8:	**Maintain a sewage system adequate to protect the health and safety of all Manhattan Beach residents and businesses.**
Policy I-8.1:	Evaluate the sewage disposal system periodically to ensure its adequacy to meet changes in demand and changes in types of waste.
Policy I-8.2:	Ensure that all new development or expansion of existing facilities bears the cost of expanding the sewage disposal system to handle the increased load, which they are expected to handle.

Storm Drains

This storm drain outlet feeds water into Polliwog Pond.

Stormwater is rainwater plus anything the rain carries along with it. In urban areas, rain that falls onto roofs or collects on paved areas is carried away through a system of gutters, pipes, and culverts. Stormwater runoff flows directly into the City's storm drain system via street gutters and other inlets, and this flow in turn discharges into the County flood control network, which ultimately drains into the Pacific Ocean. The Los Angeles County Department of Public Works (LACDPW) maintains the regional storm drain system, including two major pump plants (Polliwog Pond and Johnson Street) in the City.

From a planning standpoint, the two important considerations to focus on regarding storm drains are: 1) ensuring adequate capacity to collect and carry stormwater and thereby avoid flooding, and 2) working to reduce pollutant loads in stormwater as part of regional efforts to improve water quality in surface waters. Flooding problems in the Sand Dune Park area have been addressed by the installation of an underground storage system to accommodate a 50-year storm.

With regard to capacity, the established system is adequate to handle most runoff. However, during unusually heavy storm events, the system can become overwhelmed, with flooding occurring in the areas shown in Figure CS-3 in the Safety Element. The City has assessed the cost to correct isolated

deficiencies, with the determination that significant investment will be required to address the issue. The main deficiency occurs in the County-owned trunk line that collects flow from more than 50 percent of the City and empties at the beach at 28th Street. Rough estimates indicate that at least $20 million would be needed to add necessary capacity to eliminate flooding in certain areas.

Stormwater Pollutants

When it rains, trash, litter, silt, automotive chemicals (oils and grease, antifreeze, and fine dust from tire wear), animal wastes, and many other contaminants are washed into the storm drain system. In addition, storm drains carry dry weather water flows resulting from excess irrigation and other discharges. Historically, storm drains have been designed with no filters or cleaning systems. Consequently, the storm drains deliver polluted urban runoff directly into local flood control channels and the ocean. Many of the pollutants found in this runoff are toxic to fish, marine mammals, and other aquatic life.

The Federal Water Pollution Control Act prohibits the discharge of any pollutant to navigable waters from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the passage of the Water Quality Act established NPDES permit requirements for discharges of storm water. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Since the 1990s, operators of stormwater systems such as Los Angeles County have been required to develop a stormwater management program to prevent harmful pollutants from being washed away by stormwater runoff and discharged into local water bodies. Manhattan Beach participates in the NPDES permit program via a partnership consisting of the County, all cities within the County, and the County Flood Control District.

Polliwog Park contains storm drainage facilities to help reduce pollutants entering the storm drain system. After it rains, water from the surrounding area flows into the park where it is held before being pumped into the storm drain system. One of the benefits of holding the water in the park is that some of the water is absorbed into the ground, recharging the groundwater basin. The Municipal Golf Course also acts as a stormwater retention basin for 200 acres east of Sepulveda Boulevard and north of Marine Avenue. Pursuant to Los Angeles County NPDES permit requirements, new construction projects are implementing similar measures to remove pollutants from runoff.

The City has also installed several storm water filtration devices called continuous deflective separation (CDS) units at strategic locations throughout the City, such as the CDS unit and low-flow diverter installed under the parking lot at the Pier in 2002. The CDS units are designed to capture and retain sediments, floatable and settleable trash, and debris before the runoff enters the ocean. The units use a combination of a uniquely balanced hydraulic design, the deflective characteristics of fine perforated screens, and the natural energy in the flowing water to effect separation of solid particles. Stormwater passes through the CDS system and returns to the storm drain system, while debris and coarse sediments are retained and settled into a sump where they can be collected and hauled away.

Goals and Policies: Storm Drains

Goal I-9:	**Maintain a storm drainage system that adequately protects the health and safety and property of Manhattan Beach residents.**
Policy I-9.1:	Evaluate the size and condition of the storm drainage system periodically to ensure its ability to handle expected storm runoff.
Policy I-9.2:	Evaluate the impact of all new development and expansion of existing facilities on storm runoff, and ensure that the cost of upgrading existing drainage facilities to handle the additional runoff is paid for by the development which generates it.
Policy I-9.3:	Support the use of storm water runoff control measures that are effective and economically feasible.

Policy I-9.4:	Encourage the use of site and landscape designs that minimize surface runoff by minimizing the use of concrete and maximizing the use of permeable surface materials.
Policy I-9.5	Support appropriate storm water pollution mitigation measures.
Policy I-9.6	Discourage new development below street level in order to avoid flooding on public and private property in areas subject to flooding.

Energy and Communications

Just like traditional infrastructure such as roads, energy and communications infrastructure provide a vital framework for the community. Electric power and gas utilities have shaped Manhattan Beach's current urban form. Communications infrastructure links the community with the nation and the world. Expanding access and capabilities of technology assists Manhattan Beach in meeting its goals of livability, economic growth, and provision of high-quality services to residents and businesses.

The first street lighting at Center Street (Manhattan Beach Boulevard) and the Strand used acetylene lamps and were later replaced with electric lights with current supplied by the Pacific Electric Railway. Later, Southern California Edison (SCE) formed and took over lighting for Manhattan Beach and surrounding communities. In 1918, the Strand ornamental lights were placed between 1st Street and 37th Street.

The Gas Lamp area, a unique residential area, uses old-fashioned gas lamps for street lights. Residents pay an assessment and the Gas Company maintains the lamps.

Utility Undergrounding

The presence of overhead utility poles and wires can be a visual blight on the surrounding neighborhood, as well as a safety concern to some residents. Undergrounding of electric power and communications lines can remove unsightly poles and wires from what is otherwise a very aesthetically pleasing street or neighborhood. Many residents agree that transferring overhead utilities to underground locations would increase the value of individual properties while improving overall community appearance. Other residents have expressed concerns about the safety of overhead power lines.

Utility poles can sometimes create visual blight in neighborhoods where poles are overly concentrated.

The Capital Improvement Program (CIP) outlines funding to remove the high voltage power poles on Rosecrans Avenue to improve the corridor visually. The City is pursuing implementation, with SCE, on a number of undergrounding projects in residential areas. The projects will be financed through assessment districts.

Communications

The last decade of the twentieth century brought significant changes to the communications industry, and technologies continue to evolve rapidly. Manhattan Beach can work to harness new technology and telecommunications systems by anticipating and accommodating high-speed, high-capacity digital and other emerging communication systems that benefit residents and the business community.

Section 10.60.130 of the Manhattan Beach Municipal Code identifies procedures and regulations for processing wireless service facility applications in all non-residential areas and to create consistency between federal legislation and local ordinances regarding amateur radio and satellite dish antennas.

Goals and Policies: Energy and Communications

Goal I-10: **Underground utility lines throughout the community to the extent that it is economically and practically feasible.**

Policy I-10.1: Continue to underground utilities in commercial streets using Rule 20A and other available funds.

Policy Discussion

Rule 20A projects are paid for by all Southern California Edison ratepayers, not just those who live on the streets where such facilities will be placed underground. To qualify for full funding through utility rate proceeds, projects must produce a benefit to the general public, not just customers in the affected area, by satisfying one or more of the following criteria:

- The location has an unusually heavy concentration of overhead facilities.
- The location is heavily traveled.
- The location qualifies as an arterial or major collector road in a local government's General Plan.
- The overhead equipment must be located within or pass through a civic, recreational or scenic area.

Policy I-10.2: Require new commercial and industrial developments to underground utility lines or pay an in-lieu fee, as appropriate.

Policy I-10.3: Facilitate the undergrounding of utilities in residential neighborhoods, including through the formation of residential utility undergrounding districts.

Policy I-10.4: In neighborhoods where an underground utilities system assessment district formation has been approved but not yet implemented, ensure that new utilities are undergrounded or that the responsible parties fund the cost of the system.

Policy I-10.5: Facilitate requests for street lighting, including the establishment of lighting districts to provide street lighting as needed and appropriate.

Goal I-11:	**Establish a reliable communications system.**
Policy I-11.1:	Accommodate the expansion of communications networks to address the needs of City residents, businesses, and other operations.
Policy I-11.2:	Encourage new housing, commercial/industrial development, and public facilities to accommodate all forms of telecommunications.
Policy I-11.3:	Support regulations that minimize the visual impacts of communication systems.

Solid Waste and Recycling

The City provides both waste and recycling receptacles throughout the City.

Throwing away a pizza box at home or a shipping box at the office adds to a waste stream with one final destination: the landfill. Although one or two boxes may seem insignificant, imagine a region with over ten million people and thousands of businesses constantly throwing away recyclable materials. Many landfills in the Southern California region are quickly reaching capacity, with new locations sought in the desert and beyond. Manhattan Beach residents and business owners alone disposed of 38,405 tons of waste into local landfills in 1999 (Table I-3).

Land is a valuable resource in Southern California. Recycling of solid waste and diverting recyclable materials from landfills helps reduce the environmental costs associated with expanding and siting new landfills. Manhattan Beach residents and businesses can contribute significantly by simply recycling as much as possible and thinking about solid waste regionally and long term. How much more waste can be deposited into landfills in the future? Limitation of landfill space can significantly increase disposal costs.

Solid Waste History in Manhattan Beach

In the early 1900s, trash was simply thrown into a hole dug by residents near their property. For longer stays, a larger hole was dug. By 1921, the City purchased a truck to pick up trash each morning for a few hours, while the truck was used for other City duties during the remainder of the day. Trash was typically dumped in a ravine that is now Live Oak Park (formerly Poison Oak Park). In the 1940s, the City's first dump was built as part of a Work Progress Administration project. Today, Manhattan Beach contracts for refuse and recycling services with a private waste hauler. Contracted haulers provide exclusive service to residential and commercial customers for solid waste, recycling, and co-mingled green waste.

Recycling Today

In 2000, the City and its residents achieved a diversion rate of 36 percent, meaning that 36 percent of the paper, glass, metal, and plastic to be thrown away was instead diverted to a recycling facility. Curbside recycling in the residential areas has been facilitated with color-coded bins. Additional diversion

has been achieved through the community's source reduction, composting, and green waste programs, and business recycling practices. The City provides low-cost bins and instruction courses for composting. Additional efforts are planned for encouraging the recycling of special waste streams such as construction and demolition debris and asphalt to meet State-mandated recycling and diversion goals.

Construction and demolition debris disposal exceeds the disposal of residential trash. A high percentage of construction and demolition materials are recyclable, including concrete, asphalt, wood, and metal. The City places a high priority on developing regulations and guidelines to apply to construction projects that will maximize the recycling and reuse of construction and demolition materials.

Trash and recyclables are placed in color-coded bins so that waste haulers can easily identify between waste and recyclables.

Table I-3
Solid Waste Disposal in Manhattan Beach - 1999

	Disposal			
	Household		Business	
General Material Category	Percent (%)	Tons	Percent (%)	Tons
Other Organic (Food)	45.5	6,660	39.7	9,775
Paper	27.5	4,063	31.8	7,836
Plastic	8.8	1,309	8.7	2,138
Metal	4.6	685	6.4	1,326
Construction and Demolition	4.5	663	8.5	1,776
Glass	4.2	597	3.2	763
Mixed Residue	4.4	592	1.3	110
Household Hazardous Waste	0.5	48	0.4	48
Special Waste	0.0	4	0.0	12
Total	100. 0	14,621	100. 0	23,784

Source: California Integrated Waste Management Board, 2001.
Note: Based on 1999 Statewide Estimates for the City of Manhattan Beach.

Goals and Policies: Solid Waste and Recycling

Goal I-12:	**Protect the quality of the environment by managing the solid waste generated in the community.**
Policy I-12.1:	Encourage maximum recycling in all sectors of the community, including residential, commercial, industrial, institutional, and the construction industry.
Policy I-12.2:	Continue to provide and improve recycling programs to commercial establishments in the City.
Policy I-12.3:	Encourage the maximum diversion of construction and demolition materials.
Policy I-12.4:	Require trash haulers to track the amount of recycling in accordance with City standards.

Policy Discussion

Tracking the amount of recyclable material diverted from a landfill is important for meeting State-mandated goals. Ensuring that trash haulers accurately calculate the amount of recyclable material diverted from the waste stream can avoid miscounting.