



Memorandum

MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

Reviewed by Wmm Date 11/13/09
General Manager

DATE: November 13, 2009
TO: General Manager
FROM: Senior Engineer
SUBJECT: Bird Abatement Services

RECOMMENDATION: That the Board of Directors authorize the General Manager to issue a Request for Proposals (RFP) for bird abatement services and to retain a licensed Falconer at the Monterey Peninsula Landfill under a pilot program, for a period through June 30, 2010, and at a cost not-to-exceed \$80,000.

INTRODUCTION

The Monterey Peninsula Landfill (MPL) can be an artificial attractant to scavenging wild birds, primarily the California Gull (*Larus californicus*) and the Western Gull (*Larus occidentalis*), due to the presence of food in the waste stream. Under some weather conditions, birds may even seek out the MPL as a resting site pending calm winds and water. The MPL is particularly attractive to gulls because of the close proximity of the Salinas River, which provides the essential fresh water that birds need for bathing and drinking.

A survey of gull usage of the MPL was performed by ornithologist Don Roberson in 1997. Key findings of the study, as documented in the *Survey of Gull Usage at Marina Landfill – March 1997*, (purpose and summary from survey attached) include the following:

- The study revealed that about 10,000 to 12,000 gulls visit the MPL daily during peak winter season (Nov. - Feb.).
- At any one time during the prime daylight hours, there can be up to 3,500 gulls present at the MPL.
- Flight paths of the gulls flying to and from the MPL were observed, and it was determined that the gulls using the MPL do not pose a significant hazard to civilian aircraft using the Marina Municipal Airport (MMA).

NUISANCE CONDITION

Scavenging birds are included in the vector category by the Local Enforcement Agency (LEA) and can present a significant nuisance condition for employees and haulers working at the landfill face. Gulls can present an equipment operator safety issue by reducing visibility through windows splattered with gull droppings. A condition of the Solid Waste Facility Permit (SWFP) is to implement a vector control plan. At some landfills, it can be important to adopt a bird control plan to protect human health and the environment. Large flocks of birds can contaminate nearby surface water bodies and land, and agricultural crops. Birds can scatter fecal material, bones, and other litter onto surrounding areas, potentially causing health issues and creating a negative image of landfills.

Birds have been identified by major health agencies worldwide as carriers of disease, such as the Avian Flu, which is currently a significant problem in the Far East. When birds are infected, they can live for months, which allow bugs or parasites to transfer disease to other birds, animals or humans. Landfills provide a place for birds to congregate, feast and rest. Thus, landfills can provide ample opportunity for disease to pass readily from one infected bird to another. Currently, however the presence of the birds at the MPL does not pose any significant environmental, public health, or operational problems.

Another important issue can be that of aircraft safety. A large population of birds could constitute a potential safety hazard to aircraft in the area, particularly with jet aircraft. Gulls have sufficient body weight to break aircraft windows and/or stop jet engines in mid-flight. FAA Order 5200.5A (*Waste Disposal Sites On or Near Airports*, January 31, 1990) states that disposal sites located within 10,000 feet (ft) of any runway end will be considered as incompatible if the runway is used by turbine powered (turbojet) aircraft. Disposal sites located within 5,000 ft of any runway end will be considered as incompatible if the runway is used by small, piston powered aircraft; the adjacent MMA currently only serves propeller (piston) driven aircraft. The existing MMA runway end is approximately 7,000 ft from the MPL property line. The MPL is not considered incompatible with piston powered aircraft operations because it is over 5,000 ft from the airport runway end. Furthermore, the primary flight paths of gulls using the landfill do not intersect the 3,000-foot Danger Zone of aircraft flying below 1,000 ft. Therefore, at the present time, the presence of the gulls making the daily round-trip between the Monterey Bay and the MPL does not constitute a significant hazard to civilian aircraft using the MMA.

Turbojet (turbine) powered aircraft do not use the 3,000-by-75 foot runway at this time. In order for most turbojet aircraft to be able to safely use the airport, the existing 3,000-foot runway would have to be extended, and an environmental document, probably an Environmental Impact Report, would need to be completed. A condition of the 1995 agreement between the District and the City of Marina requires that if the City expands the runway, the City will be required to undertake a bird hazard study and participate financially in any remedy to reduce bird strike hazards.

CURRENT BIRD CONTROL MEASURES

There are many bird-control systems available for landfills, so it can be difficult to determine which ones will work at a particular site. Many systems may work initially, but birds get acclimated to techniques when only one process is used. For a bird control system to work:

- Landfill management must be active in employing bird control techniques;
- The techniques must be varied to prevent habituation; and
- Techniques must complement and reinforce the other methods being used.

The bird control measures that have been used or are currently in effect at the MPL consist of the following:

1. Routine Landfill Operating Procedures

- The amount of traffic at the landfill face is minimized by directing all self-haul vehicles and most roll-off box trucks to the Materials Recovery Facility.
- The size of the active working face is restricted to an area of approximately 100 by 150 ft to minimize the amount of exposed food waste available to the birds.
- Incoming refuse is immediately spread and thoroughly compacted in 2-foot thick layers. The compaction equipment consists of a landfill compactor (Caterpillar 836 with Caron wheels and trash blade) and/or a bulldozer (Caterpillar D9). The heavy compaction equipment traverses the entire length of the working face, making several passes over each 2-foot thick layer of refuse to obtain a minimum in-place refuse density of 1,400 pounds per cubic yard. This compaction eliminates voids in the refuse cell and minimizes the availability of food waste to the birds and other vectors.
- At the end of each working day the advancing face is covered with a geosynthetic tarp or a minimum six (6) inch thick layer of compacted daily cover soil/MRF fines.

2. Noise Disturbance

The District has placed into use automated noise-making propane-fired cannons. Cracker shells, screamers, whistlers, and other pyrotechnic devices can also be used. The District has learned that the gulls quickly adapt to these noise makers and that these methods have no effect on the population of gulls at the landfill. The District has received noise complaints in the past, and some believe that the unnecessary noise pollution that is currently generated with the bird cannons is more of a nuisance than the birds.

3. Elevated Wire System

This control method involves stringing steel wire or monofilament fishing line over the waste disposal area. When landing, gulls descend in a circular pattern with the diameter of the circle decreasing as they approach ground level. The wires over the landfill disturb this landing pattern, causing the gulls to avoid attempting to land in the wire-covered area. The equipment for this system consists of poles, bases for the poles, and wires.

Typically, the pole lines are spaced 50 to 75 ft apart, with line spans of up to 1,000 ft in length. Either 0.16-inch stainless steel wire or 100-pound test monofilament fishing line can be used. Criss-crossing of the spaced wires at various angles may be effective in discouraging bird landings. The District has found that although the elevated wire system may prevent birds from landing directly in the active landfill operating area, it does not prevent their access to the surrounding areas or to the air space above the wires. A portion of the gull population either remains in flight above the landfill or congregates along the perimeter of the wire system. Occasionally, the gulls may actually walk into the operations area from the perimeter. Clearly, other bird control measures are required to supplement the elevated wire system.

4. Visual Deterrence

The use of the following predator decoys have been used with little or no effect on gull behavior:

- Full-size Pigeon Hawk Facsimile.
- Inflatable owl-eye balloons.
- Scarecrows.

5. Predatory Birds

The single bird control method reported to be the most effective is the use of predatory birds, such as the peregrine falcon. The presence of the peregrine falcon near the active face of the landfill discourages gulls and other birds from approaching the waste. Several predatory birds are typically utilized, allowing multiple birds to fly on any given day.

Additional birds can be used to provide relief for those that are flying or molting. Dogs and noise-making devices may also be used in conjunction with the falcons to disturb the gulls. The domesticated falcons are well fed on a diet of quail meat, and therefore typically will not catch and kill gulls at the landfill. They generally will just scare the gulls away from the active landfill face, and deprive the gulls access to food in the waste stream. The falcons need to be present every day, because gulls are smart, and will return if the falcons are not present. It is extremely important that the first gulls (scouts) that come to the site in the morning are deterred away from the landfill to discourage fellow gulls from coming to the site. Therefore, the falconer needs to be on site when the first load of waste arrives in the morning, and be there every workday ready for work during all operating hours. This method is expensive, at between \$100,000 and \$150,000 per year, and to be an effective and lasting bird control method, this would need to be an ongoing expense.

The successful use of falcons to control gull populations at landfills is well documented. Following is a partial list of landfills using falcons:

- Tajiguas Landfill, Santa Barbara County, Goleta, CA.
- Cold Canyon Landfill, Waste Connections, San Luis Obispo, CA.
- Lompoc City Landfill, Lompoc, CA.
- Santa Maria City Landfill, Santa Maria, CA.
- Simi Valley Landfill, Waste Management Inc., Simi Valley, CA.
- Chiquita Canyon Landfill, Republic Services, Valencia, CA.
- Potrero Hills Landfill, Waste Connections, Suisun, CA.
- Redwood Landfill, Waste Management Inc., Novato, CA.
- B&J Landfill, Nor Cal Waste Systems, Vacaville, CA.

SUPPLEMENTAL BIRD CONTROL MEASURES

Some or all of the following supplemental bird control measures could be considered in an attempt to reduce the bird population at the MPL, but none have been reported to be effective on a long-term basis:

1. Distress Calls - Tape recordings of seagull distress calls played over loud-speakers.
2. Sound Waves - Modulating frequency UHF sound waves.
3. Chemical Irritants - Fragrance aerosols may irritate and disturb bird behavior.
4. Contamination of Food Source - Landfill operators can make the food source inedible to prevent feeding by mixing methylanthranilate (MA) with ProGuard SB, a slurry-based alternative daily cover material. The MA slurry is sprayed on the landfill's open working face and on the birds' loafing areas, where they rest before taking flight to acquire more food.
5. Depredation - The lethal use of gunfire or chemical poisons such as Avitrol can be used only as a last resort and after public hearings. The landfill operator could be permitted to kill up to 100 birds per year. Landfill operators could be trained and certified to shoot gulls and crows. Dead gulls are displayed in a distressed posture in areas where other gulls can see them. The birds' distress is re-enforced with pyrotechnics, which are blank shells that launch a device that explodes in the air to create noise.

CEQA

Staff has consulted with EMC Planning and they have concluded that since past CEQA documentation has included bird control as part of the plan of operations, and since the action of employing falcons to control the gull population at the landfill does not rise to the level of a project under CEQA, an Environmental Review/Negative Declaration is not necessary. An application for a Report of Information Amendment will have to be filed with the Monterey County Health Department as the LEA.

PAST BIRD ABATEMENT POLICY

The complete elimination of birds at a sanitary landfill is very difficult and expensive to achieve. In the past, the District has not taken extraordinary measures to discourage the presence of gulls at the MPL for the following reasons:

- The presence of the birds at the MPL has not posed any significant environmental, public health, or operational problems.
- Gulls are a protected species and permission from both the California Department of Fish and Game and the United States Fish and Wildlife Service may be required if an elimination program is implemented.
- The Monterey Peninsula Audubon Society in the past has been opposed to any interference with the gull's use of the MPL and views the concentration of gulls at the MPL as "a blessing and not a burden."
- According to FAA Order 5200.5A (*Waste Disposal Sites On or Near Airports*, January 31, 1990) the MPL is considered to be compatible with piston powered aircraft operations because it is over 5,000 ft from the MMA runway end (the MPL is 7,000 ft away). Currently, only piston powered aircraft use the MMA.

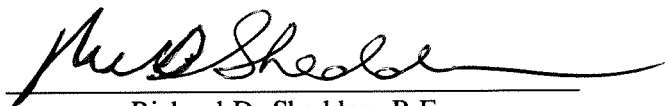
PROPOSED MITIGATION PLAN

Because of the significant nuisance condition for employees and haulers working at the landfill face, the close proximity of agricultural land to the landfill, and the District's desire to be a good neighbor, staff has concluded that it is time to become more aggressive in controlling the population of gulls at the landfill. Staff is proposing to conduct a seven-month pilot program using peregrine falcons to prevent gulls from feeding at the landfill. The services of a licensed falconer can be retained at a cost of approximately \$45 per hour to determine the effectiveness of this bird abatement method at the MPL. If the pilot program proves that the use of falcons is successful at expelling gulls from the landfill, a RFP can be issued to select a falconer to enter into a long-term agreement to provide bird abatement services, beginning in FY 2010/11.

Once the gulls are expelled from the landfill, and no longer have access to the rotting food waste at the face, they will have to revert back to their natural diet of small fish, shrimp, crabs and other crustaceans, fruits and seeds, small birds, and carrion. The gulls will also feed on earthworms, insects and larvae exposed in a newly tilled field, which is why they are seen congregating on the adjacent farm land. Gulls will also steal food from other animals that have already caught and killed the prey. Gulls are often seen panhandling from beachgoers, stealing from fishermen and foraging in dumpsters. This activity may increase when the food supply at the landfill is no longer available.

CONCLUSION

It is therefore recommended that the Board of Directors authorize the General Manager to issue a Request for Proposals for bird abatement services and to retain a licensed Falconer at the MPL under a pilot program, for a period through June 30, 2010, and at a cost not-to-exceed \$80,000, beginning in FY 2010/11.

A handwritten signature in black ink, appearing to read "Richard D. Shedden", written over a horizontal line.

Richard D. Shedden, P.E.

Attachment

EXCERPT FROM

SURVEY OF GULL USAGE AT MARINA LANDFILL

Don Roberson

for the Monterey Regional Waste Management District
March 1997

PURPOSE OF SURVEY

The Monterey Peninsula Landfill in Marina (hereafter called the "Marina Landfill"), operated by the Monterey Regional Waste Management District, is an artificial attractant to birds, primarily a variety of species of gulls (*Larus* sp.). In July 1996, the Monterey County Environmental Health Department, because of its concerns about the public health impacts of gull movements on airport traffic, reached agreement with the Monterey Regional Waste Management District to conduct a gull study at the Marina Landfill. The overall purpose of this study was to determine if the presence of gulls flying to and from the Marina Landfill might have a negative impact on civilian flight operation at the Marina Airport.

Gulls in the Monterey Bay area are most numerous during the height of their wintering season, November through February (Roberson 1985). Accordingly, this study was undertaken in February 1997, and was designed to determine:

1. The population (numbers) of gulls using the Marina Landfill at the height of the winter usage season.
2. Species composition at the height of winter season.
3. Daily arrival and departure times of the gulls at the landfill.
4. Flight paths of gulls to and from the landfill, with special attention to the Marina Airport flight paths.

Most of these questions cannot be specifically answered without extensive surveys. It was agreed, however, that general answers might be obtained with this overview survey.

SUMMARY OF RESULTS

During February 1997, the contracting field ornithologist (Don Roberson) and volunteers from California State University, Monterey Bay (Amy Freitas, Paul Gamble) and the Monterey Peninsula Audubon Society (Rita Carratello), conducted 20.5 hours of surveys at three pre-determined locations under potential gull flight paths to and from the Marina Landfill, with hours about equally split between morning and evening flights. Roberson also conducted six surveys of gulls at the landfill at differing times of the day, and on three occasions he and Ms. Carratello quantified species percentages there. The Marina Airport was also surveyed twice, once in the morning, once in the afternoon. The landfill and airport surveys accounted for an additional 5.5 hours of survey. In total, then, this study consisted of 28 hours of survey work. The survey answers to the primary four questions can be summarized as:

1. About 10,000-12,000 gulls daily visit the landfill during the peak of the winter season, with numbers present at any one time during prime hours ranging from 1,800-3,500. Marina Landfill
2. The vast majority of gulls during the winter are California Gulls. Approximately 83-89% of all gulls at the landfill on any visit are of this species. Much smaller numbers of Western Gull (5-9%/visit), Glaucous-winged Gull (3-5%/visit), Herring Gull (1-3%/visit), and Thayer's Gull (1% or less/visit) use the area regularly in winter. Among rarer species, one Glaucous Gull and one Ring-bill Gull were located. Gull composition would be much different in other seasons; only the Western Gull nest locally, and presumably it is a more important component of the gulls using the landfill in spring or summer.
3. Gulls use the Marina Landfill only when it is operational; virtually none are present at night or when the landfill is closed (e.g., Sunday). During days when the landfill is operational, many gulls arrive in the morning, starting at first light, and numbers decrease towards the end of the day. However, there is no simple scheme of arrival and departure schedules. Rather, different birds arrive and leave throughout the day. Some use open areas for day-roosting for long periods, while others visit only briefly. Determining "average visitation time" or "turnover rates" would require more substantial surveys and, perhaps, banded birds.
4. There are two primary flight paths of gulls to and from the landfill: one is up the Salinas River from the river mouth, and the second is a direct flight from the Marina beach to the landfill. Surveys suggest that morning flights to the landfill are about 2/3 up the river and 1/3 across the fields north of Marina, but that return flights in the evening are primarily down the river (78-93%). Neither of these flights impact the operation of aircraft at the Marina Airport. There are essentially no gulls in the area over which the vast majority of aircraft arrive, and all departing flights have reached altitudes well above the heights at which any gull flies before the Marina Landfill is reached. Normal procedure on both arriving and departing flights, under any conditions, do not take aircraft into any gull flight paths. Simply put, gulls using the Marina Landfill are an insignificant hazard to civilian aircraft using the Marina Airport.