

# CH2M HILL/METROPOLITAN WASTEWATER MANAGEMENT COMMISSION SURVEY RESULTS NOVEMBER 1995

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As one part of an effort to develop a long-range plan for the Eugene/Springfield Metropolitan Wastewater Management Commission (MWMC), CH2M Hill contracted with the University of Oregon Survey Research Laboratory (OSRL) to conduct neighborhood surveys of six selected sites in the Eugene/Springfield area. This report summarizes the survey methodology and results.

## *Survey Methodology*

### *Survey Instrument*

The survey instrument was developed and pretested by OSRL, in consultation with Gordon Nicholson of CH2M Hill, John Owens of MWMC, and Peter Ruffier of Eugene Public Works. Original questions were developed and pretested from discussions about MWMC's information needs. Other questions were drawn from similar survey instruments developed previously by MWMC. The instrument underwent OSRL's standard three-pronged pretest procedure and was revised until it met the needs of the review and showed no bias. A facsimile of the instrument is presented elsewhere in this survey documentation.

The survey instrument comprised the following subject areas:

1. Knowledge of the **neighborhood presence** of a sewage pump station or the wastewater treatment plant, its purpose, and its exact location;
2. Assessment of the station's **appearance** and how it could be improved;
3. **Odor** issues, including presence, seasons and times of day odors are noticed, how much odors bother, what odors smell like, and concerns;
4. Knowledge of **chemical use** in the Wastewater Treatment Plant neighborhood, concerns about chemicals, knowledge that treated water is released into the Willamette River and related concerns;
5. **Traffic** issues, including presence, times of day traffic is noticed, and how much traffic bothers respondents;
6. **Noise** issues, including presence, seasons and times of day noise is noticed, and how much noise bothers respondents;
7. **Good neighbor** issues, including how good a job MWMC is doing, how much MWMC can be trusted, and if it cannot be trusted, why;
8. **Background information**, including years lived in neighborhood, feelings about neighborhood, home ownership, presence of children, education, employment, age, sex, voting behavior, income, and willingness to be re-surveyed.

### *Sample*

OSRL staff members personally visited the six neighborhood sites and scrutinized maps, in order to get a feel for the natural neighborhood boundaries. The survey sample was drawn randomly from lists of telephone numbers from the census block groups which comprise each neighborhood, supplied by Genesys Sampling Systems. Altogether 420 interviews were completed, but 16 computer files were lost or inexplicably corrupted. Thus, the final sample of completed interviews was 404. The overall survey response rate was 77% and refusal rate was 8% (both CASRO adjusted).

Survey sampling errors are calculated to assist data users in assessing how much confidence to place in a particular survey result. Large random samples reduce sampling error. Results in which there is low variability also have less sampling error; for example, a variable with a 50/50 proportional split will have wider confidence intervals than a variable with a 5/95 proportional split. This study is somewhat unusual, in that OSRL drew relatively large samples from small places with finite populations. Typical sampling errors (i.e., those for 50/50 proportional split at the 95% confidence level) are reported below, with the distribution of the sample (n) as well as the population (N) across the six neighborhoods:

1. Wastewater Treatment Plant south of Beltline highway and near the corner of River Avenue, alongside the Willamette River in Eugene, n=101, N= 230, confidence interval  $\pm 3.8$ ;
2. Fillmore sewage pump station near 1st Avenue and River Road, alongside the Willamette River bicycle path in Eugene, n=57, N=103, confidence interval  $\pm 4.4$ ;
3. Harlow sewage pump station southeast of the Harlow Road overpass of Interstate 5 and near the Gateway shopping mall in west Springfield, n=86, N=226, confidence interval  $\pm 4.2$ ;
4. Skipper sewage pump station south of Beltline highway near the intersection of Labona and Skipper roads, and near North Eugene High School, n=71, N=236, confidence interval  $\pm 5.0$ ;
5. Terry sewage pump station at the intersection of Terry and Barger roads west of Beltline Highway in west Eugene, n=84, N=271, confidence interval  $\pm 4.5$ ; and
6. Enid sewage pump station near the corner of Highway 99 and Airport Road in west Eugene n=5, N=2 residences + 5 businesses.

At the request of CH2M Hill, business interviews were conducted in the Wastewater Treatment (n=10) and Enid areas (n=4). Interviews were conducted mainly with owners or managers of these establishments, and certain demographic questions in the interview were skipped because they were not applicable (e.g., presence of children).

### *Data Collection*

The survey instrument and sample were programmed into OSRL's computer-aided telephone interviewing (CATI) system and further pretested. All interviews were completely anonymous.

Altogether, 2,534 telephone calls were required to conduct 420 interviews November 1-10, 1995. Respondents were called at their home telephone numbers at all times of the day and all days of the week until the target sample sizes were achieved for each neighborhood. In the attached banner-style tables, the sample "n" varies slightly due to occasional missing data and to structural skip logic in the survey instrument.

### *Neighborhood Profiles*

We begin by presenting profiles of the survey samples in each neighborhood, in order to provide a background or context for their assessments of the sewage pump stations and wastewater treatment plant.

- **Wastewater Treatment Plant:** Average length of respondents' residence in this neighborhood was 10 years, with one-quarter of the sample having resided there for 20 or more years. Fully 91% feel positively toward their neighborhood. Sixty percent of the non-business residents are homeowners, and 30% have children under age 18 in the home. Over half of the sample in this neighborhood has attended college, including one-fifth with a bachelor's degree or more. Nearly two-thirds are employed and 30% are retired, with an average age of 48. Fifty-three percent of the non-business respondents consider their family income about average, but 30% said below average. Two-thirds of the respondents were female. Half always vote in every election.
- **Fillmore:** Average length of residence was 10 years, with one-fifth having resided there 20 or more years and one-fifth 10-19 years. Three quarters feel positively toward their neighborhood. Sixty

percent of respondents own their homes, and 49% have children in the home. Nearly one-third have a four-year college degree. Sixty-three percent are employed, 23% retired, and 9% homemakers. Fifty-eight percent consider their family income average and 26% below average. The average age of respondents was 45, two-thirds were female, and 49% always vote.

- **Harlow:** Average length of residence was 5 years, with the mode (41%) having resided there 1-2 years. Eighty percent of residents feel positively toward their neighborhood. Two-thirds of the survey respondents are renters, 38% have children, and 27% have completed college. Two-thirds are employed, 17% retired, 6% homemakers, and 5% college students, with an average age of 40 years. Three-fifths of the respondents were female. About 56% considered their household income to be average, 20% below average and 19% above average. Civic participation in this neighborhood was most mixed, with 36% voting always, 26% often, 16% sometimes, 2% rarely, and fully 19% never.
- **Skipper:** Average length of residence was 14 years, with 45% having resided there 20 or more years. Fully 87% feel positively toward their neighborhood, and 87% own or were buying their homes. Thirty-five percent have children in their homes and one-quarter have completed college. Sixty-three percent are employed, 24% retired, 4% college students, and 3% unable to work. Nearly three-quarters consider their household income average. Respondents' average age was 50, about half were female, and 56% always vote.
- **Terry:** Average length of residence was ten years, with the modal amount 10-19 years (20%). Ninety percent have positive feelings about their neighborhood, and 85% were homeowners. Thirty-five percent have children in their homes and nearly one-quarter have completed college. Fifty-two percent are employed and 6% homemakers. More respondents in this neighborhood were retired, 34%, and respondents' average age was oldest, at 52 years. Two-thirds consider their household income to be average and nearly one-fifth say above average. Fifty-six percent of respondents were female. Fifty-seven percent vote in every election.
- **Enid:** Because only 5 interviews were conducted in this neighborhood, and 4 of those were with businesses, results are sketchy and should be interpreted with caution. Three of the 5 feel positively toward the neighborhood, one negative, and one didn't know. All of the respondents were middle-aged (36-54 years), 3 were male, 4 vote always and one never votes.

### *Survey Results*

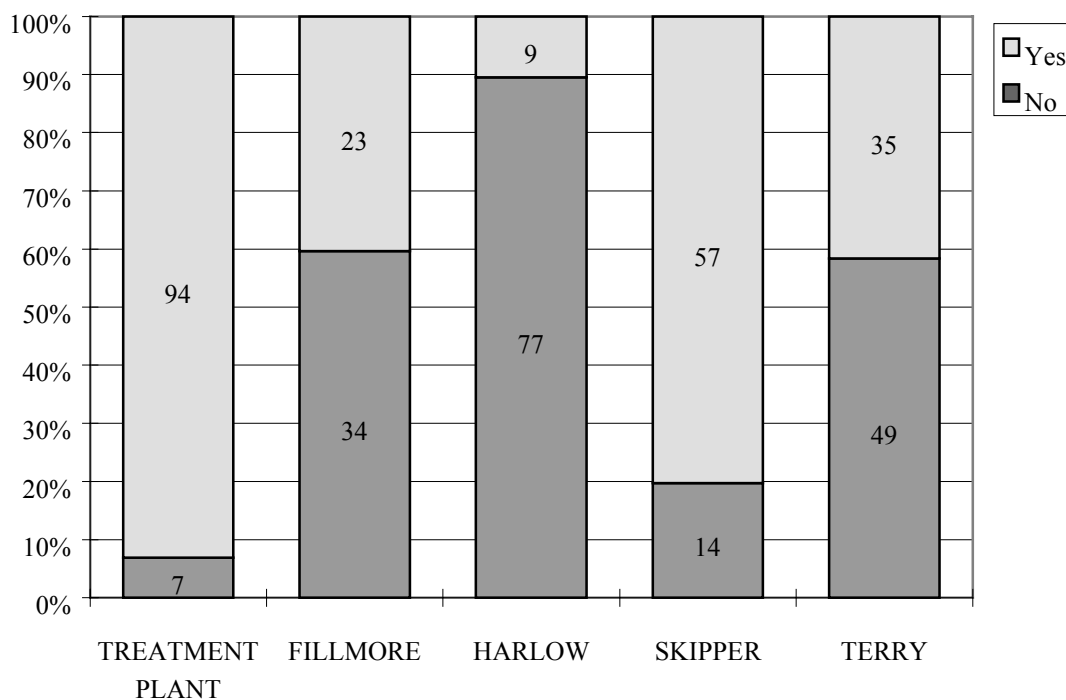
This presentation of the survey results is organized around survey respondents' knowledge of the presence of a sewage pump station or the wastewater treatment plant in their neighborhood, their assessment of its appearance, issues of odors, chemical use, traffic and noise, and overall evaluation of MWMC. There is, however, variation in the results across the sampled neighborhoods.

#### *Neighborhood Presence*

Overall, 55% of the sample reported knowing that they lived near a sewage or wastewater facility, but this varied substantially by neighborhood, and there was substantial evidence of confusion between sewage pump stations and the larger wastewater treatment plant. Fully 93% of those in the neighborhood of the wastewater treatment plant knew of its presence (see Figure 1<sup>1</sup>). Eighty percent of those in Skipper, 42% in Terry, 40% in Fillmore, 40% in Enid, and just 11% in Harlow said they knew about the sewage pump stations in the neighborhoods. Knowledge varied positively with years of residence, with those who had lived in the neighborhoods longer more likely to know that they lived near a facility.

Figure 1: Know Live Near WW Station

<sup>1</sup> Note that in the graphs and banner tables, we use the term "WW Station" to refer to both sewage pump stations and the Wastewater Treatment Plant. Also note that these stacked bar graphs portray both percentages (vertical axis) as well as the number of respondents in each category (interior of bar).



Survey respondents who did not know they live near a sewage or wastewater facility were skipped past specific questions about its appearance, odors, chemicals, traffic and noise. Instead, they were asked a general open-ended question about these issues which might be attributable to such a facility. Answers to this question are discussed later in this report. In addition, narrative responses to this and all open-ended questions are provided elsewhere in this survey documentation.

Among those who said they knew they lived near such a facility, 90% overall reported knowing exactly where it is located, but again this varied substantially by neighborhood. Nearly all respondents in the wastewater treatment, Skipper and Enid neighborhoods knew the location, compared with 86% in Terry, 78% in Fillmore, and 22% in Harlow. Evidence of confusion about the location of the facilities is apparent, however, in respondents' reports of how far away they live from the exact location. By the sample design, respondents should have lived within 8 blocks of their neighborhood facility, or at the very most within one mile (12 blocks), but 17% reported living farther away. In particular, 41% of those in the Fillmore area and 27% of those in Skipper reported living more than one mile away. We believe these respondents were confusing the larger and more visible Wastewater Treatment Plant with the sewage pump stations in their neighborhoods.

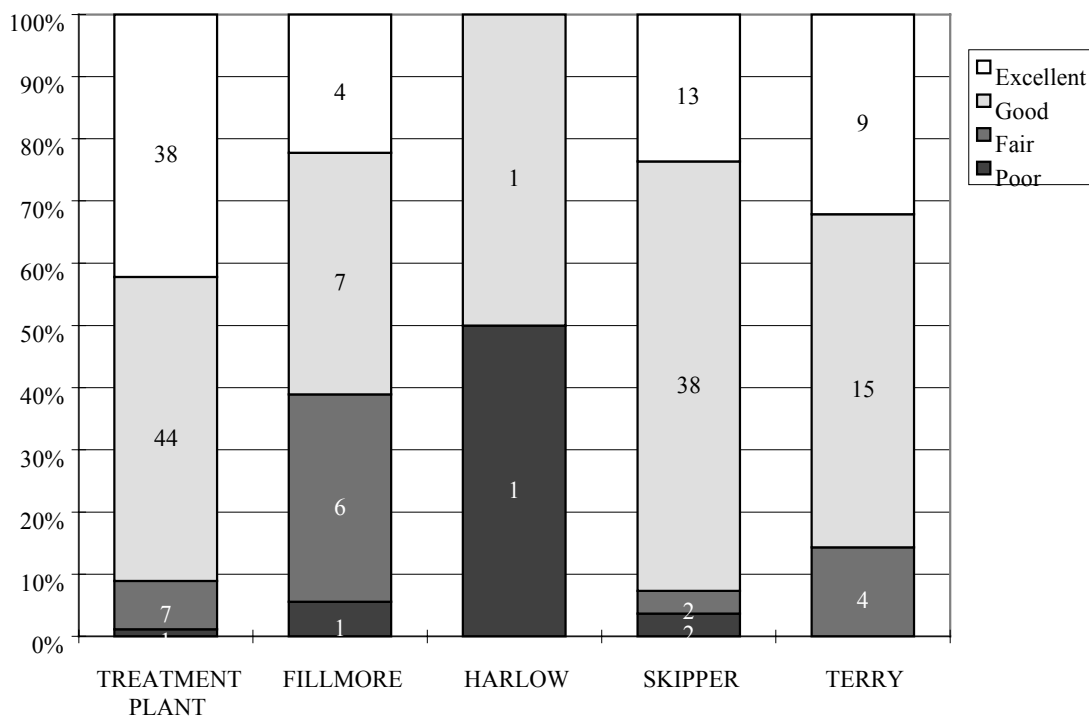
Respondents who said they knew they lived near a facility were asked how much they know about what the facility is for. Overall, 17% reported they know "a lot," 46% "some," and 36% "very little." Those in the treatment plant and Fillmore neighborhoods were more likely to report that they know a lot (22% each), while 89% of those in Harlow reported knowing very little.

### ***Appearance***

Only respondents who said they knew exactly where their neighborhood sewage facility is located were asked about its appearance. Among those, overall 32% rated the appearance of their neighborhood facility as excellent, 54% said good, 10% fair, and 3% poor. Those in the Treatment Plant neighborhood more often said excellent (42%), while those in the Fillmore area more often said fair (33%) or poor (6%), than

respondents in other neighborhoods (see Figure 2). The number of respondents to this question in the Harlow and Enid neighborhoods is too small to warrant generalizations.

Figure 2: Appearance of the WW Station

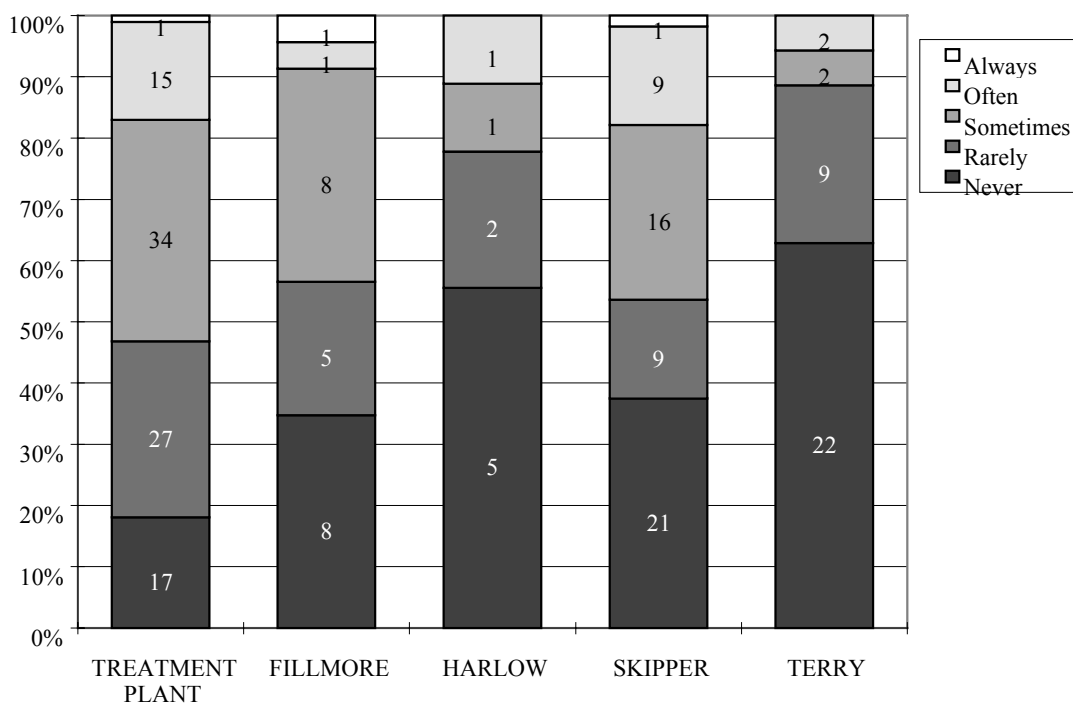


Those 25 respondents who rated facilities' appearances as fair or poor were asked in an open-ended question to make recommendations about how their looks could be improved. Most suggestions (44%) had to do with camouflage landscaping, for example planting more trees to shield the view. Another 16% suggested that the facility be relocated, and 28% had no suggestions.

### ***Odor Issues***

Overall, 34% of respondents reported "never" having noticed smells coming from the sewage or wastewater facility in the neighborhoods. Twenty-four percent reported "rarely," 28% "sometimes," 13% "often," and 1% "always." Odors vary by neighborhood (see Figure 3), with about 18% of those in the Wastewater and Skipper neighborhoods reporting smells often or always; however, 47% and 53% of respondents in those neighborhoods, respectively, reported smells rarely or never. Over half of respondents in the Harlow and Terry neighborhoods reported never noticing odors, at 56% and 63% respectively.

Figure 3: Noticed Smells from the WW Station



The 93 respondents who have noticed smells always, often or sometimes were asked the seasons and times of day of the odor, how much it bothers them, what the odor smells like, and their concerns about the smell's possible effects on them. The results of these questions are presented by neighborhood. Because four or fewer respondents noticed smells in the Terry, Harlow and Enid areas, these results are not discussed.

Fifty respondents in the Wastewater neighborhood answered these questions, with 34 sometimes noticing the smell, 15 often, and 1 always. Thirty-six percent noticed the smells mainly in the summer, 22% mainly in the fall, and 14% all year. Forty-eight percent notice it in the evening (before going to bed at night), with an additional 14% reporting evening in combination with some other time of day. The smell bothers 24% "a lot," 58% "some," and 18% "not at all." Half report that the odor smells like sewage, 22% say it smells like rotten eggs, and 28% reported other smells or combinations of smells (see narratives elsewhere in this documentation). But 70% said they are not concerned about how the smell may affect them. Among the dozen who have concerns, 4 were concerned about the effects on their immediate health, 2 were concerned about potential health effects, 4 simply disliked the smell, and 2 were concerned about property values.

Twenty-six respondents in the Skipper area noticed smells sometimes (16), often (9), and always (1). Thirty-five percent noticed the smells mainly in the summer, 15% summer and fall, and 12% fall and winter. Thirty-five percent notice it mainly in the evening (before going to bed), with an additional 15% reporting evening in combination with some other time of day. The smell bothers 12% "a lot," 69% "some," and 19% "not at all." Two-thirds report that the odor smells like sewage. Eighty-one percent report no concerns about the smells effects on them, and the 2 people with concerns spoke of the potential health effects.

Just 10 persons in the Fillmore area noticed smells sometimes (8), often (1) or always (1). Three notice the smells mainly in summer, 2 all year, and the other 5 a different times of the year. Four each notice it mainly in the daytime and evening, 1 at night, and 1 all the time. Two say the odors bother them a lot, 6

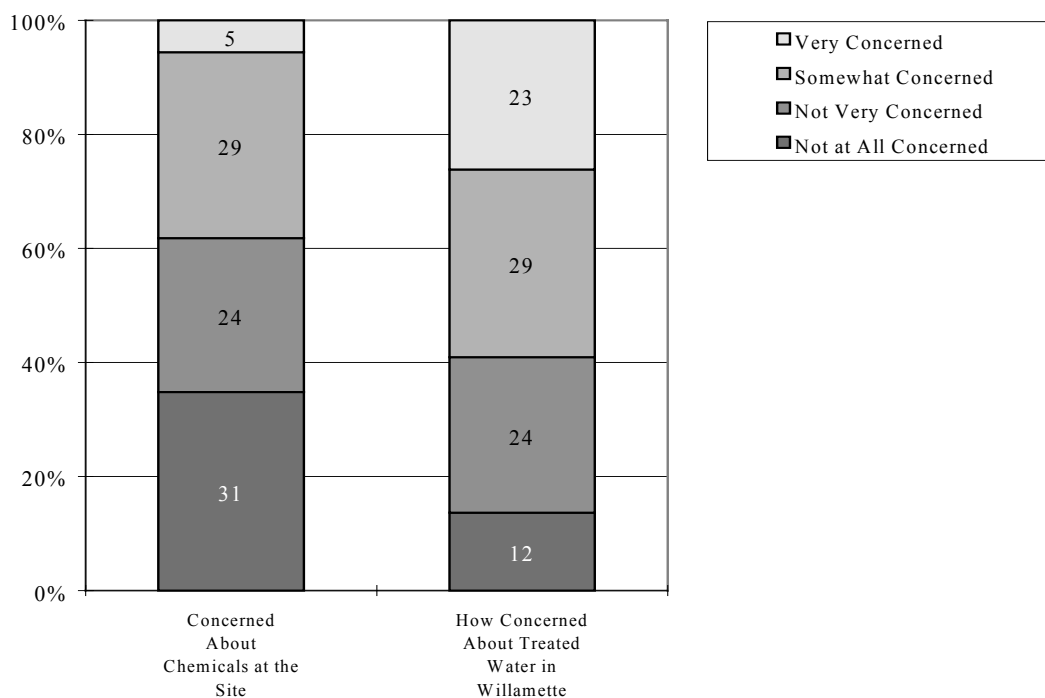
some, and 2 not at all. Nine say the odor smells like sewage, and 8 have no concerns about the smell. The 2 people with concerns spoke of the potential health effects.

### ***Chemical Issues in the Wastewater Treatment Neighborhood***

The 89 respondents in the Wastewater Treatment Plant neighborhood who knew that they lived near it were asked a sequence of questions about the use of chemicals to treat sewage at the plant. Seventy-eight percent knew that chemicals are used. Not surprisingly, respondents who know what sewage treatment plants are for were more likely to know about chemical use, as were those who had lived there a year or longer and those with a high school diploma or better.

Six percent of the neighbors interviewed were very concerned about having chemicals at the site, 33% somewhat concerned, 27% not very concerned, and 35% not at all concerned (see Figure 4). Those who know “very little” about what the treatment plant is for were more likely to be very concerned (11%), and those who know “a lot” were more likely to be not at all concerned (53%). Nearly half those who live within three blocks of the plant are not at all concerned (16 of 35). Those with concerns showed greater distrust for MWMC and rated the plant lower as a neighbor than those with few or no concerns. Those with concerns also had lived in the neighborhood longer and tended to be less well educated than those with fewer concerns.

Figure 4: Waste Water Treatment



Those 34 respondents who were very or somewhat concerned about the use of chemicals were asked to describe what concerns them. The narrative responses can be grouped into four broad categories: concerns about chemicals’ hazards in general (50%), concerns for the environmental consequences of using chemicals (21%), concerns about the potential for a chemical disaster (15%), and negative comments about chemicals generally (12%).

Two-thirds of respondents in this neighborhood knew that the wastewater plant puts treated sewage water into the Willamette River. Respondents more likely to know this had higher levels of education, above-average family income, had lived in the neighborhood longer, had more strongly positive as well as more negative feelings about the neighborhood, knew more about the plant's purpose, had higher levels of trust in MWMC, and were somewhat more likely to rate the plant as an excellent neighbor than those who did not know.

Twenty-six percent are very concerned about treated sewer water being released into the river, 33% are somewhat concerned, 27% are not very concerned and 14% are not at all concerned. Again, those who know very little about the treatment plant's purpose are more likely to be very concerned (37%), and those who know a lot about its purpose are more likely to express no concerns (32%). But over half of those who live within three blocks expressed some concerns (19 of 35). Those who are very concerned report less trust in MWMC, are more likely to have children in the home, and have lower levels of educational attainment than those with fewer concerns.

Those 53 respondents who had concerns were asked in an open-ended question what concerns them about discharge into the river. Their narrative responses, included elsewhere in this report, can be grouped as follows: 55% expressed fears about contamination of the Willamette River, 21% expressed concerns about the facility being managed properly, 19% expressed concern about health effects, and 6% worried about equipment malfunctions.

### ***Traffic Issues***

Traffic to and from the Wastewater Treatment Plant and sewage pump stations was not a salient issue for most respondents, with overall 47% reporting that they "never" notice it and an additional 26% saying they "rarely" notice it and 15% reporting "sometimes." In the Wastewater Treatment Plant, Skipper and Terry neighborhoods a few respondents report noticing traffic "always" or "often," at 12%, 7%, and 6% of the samples, respectively (see Figure 5). But only 3 of the 18 respondents who report the problem live within 7 blocks of the facilities, which suggests they may be confusing traffic sources. These respondents are somewhat less likely to express trust in MWMC and regard it as a good neighbor, but their feelings about their neighborhoods are still positive.

Those who reported noticing traffic always, often or sometimes were further asked the times of day the traffic bothered them and how much it bothered them. Of these 50 respondents, half reported noticing traffic in the daytime and 24% said the morning. Noticing traffic is not, of course, necessarily problematic: fully 90% said the traffic bothered them "not at all" and none said it bothered them "a lot." Of the 5 who said it bothered them "some," 1 lives in the Skipper area and 2 each live in the Terry and Wastewater Treatment Plant neighborhoods; all, however, live 10 or more blocks from the sites.

### ***Noise Issues***

Noise from wastewater facilities was also not a salient issue for respondents, with fully 76% reporting that they "never" notice it and an additional 16% reporting that they "rarely" notice it. Only 14 respondents reported noticing noise "sometimes," "often" or "always," and 11 of these lived in the Wastewater treatment Plant neighborhood, 2 in Fillmore and 1 in Skipper (see Figure 6). Nine of these respondents live within 4 blocks of a facility. Of the 14, 5 reported noticing the noise during the day, 4 in the morning, 2 in the evening, 1 in the evening, 1 all of the time, and 1 other. Eight said the noise bothers them "not at all," 5 said it bothers them "some," and 1 said "a lot." The sound was described by respondents as being like motors humming, machinery running, a motor, and construction work.

Figure 5: Notice Traffic to and from WW Station



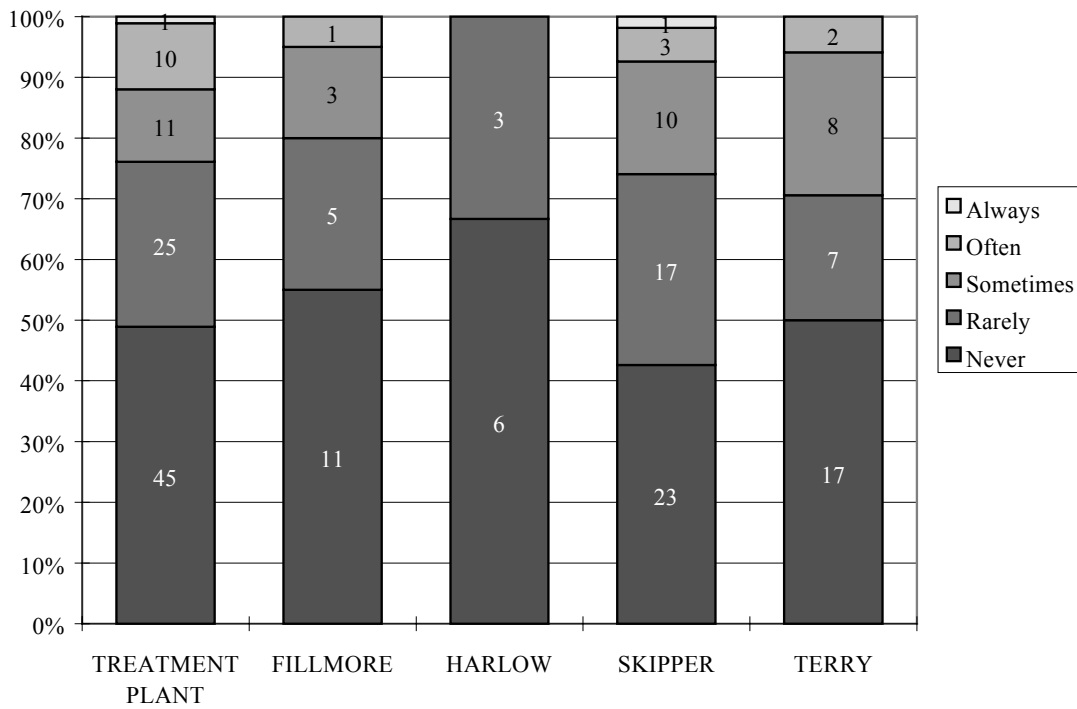
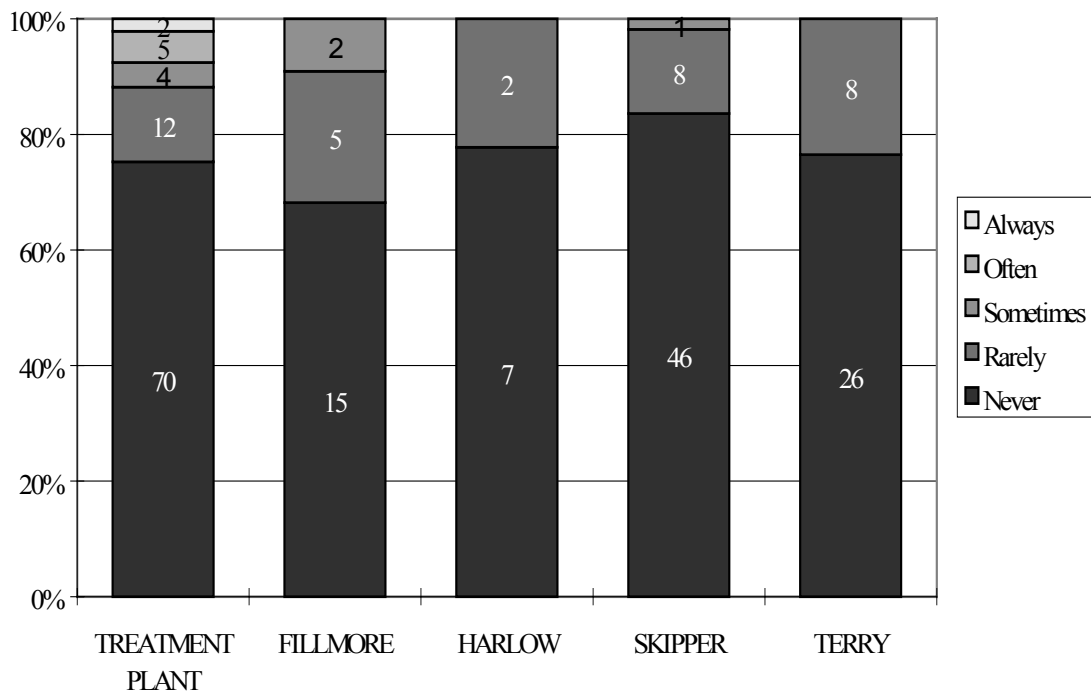


Figure 6 Noticed Noise from WW Station



**Other Issues**

The 186 respondents who did not know that they live near a sewage pump station or the wastewater treatment facility were asked a general open-ended question about whether they “ever notice any odors, noise or traffic in [their] neighborhood that might come from [such a facility].” Fully 81% responded “no.” In addition, 13% reported odors, 2% reported traffic or noise, and 3% mentioned other things.

All respondents were asked if they had any other concerns they wished to express. Eighty percent said “no,” that they had no concerns, or that they had no concerns at the present time. An additional 2% made affirmative comments indicating their approval of the facility, and 5% said they would need more information to comment. The remaining comments included 2-12 respondents who expressed concerns about the environment, health, odor, cost, vandalism, and the notion that such facilities do not belong in residential neighborhoods.

### ***MWMC “Scorecard”***

Overall, how do respondents view MWMC’s efforts to treat sewage? Here, we examine answers to questions which rate the pump and treatment facilities as a neighbor, assess how good a job the agency does, and respond to issues of trust.

*Neighbor:* Respondents who knew they live near a facility were asked how they would rate it overall as a neighbor. Twenty-seven percent said excellent, 42% good, 19% fair, and 7% poor. Respondents in the Terry area were somewhat more likely to say excellent, and those in Fillmore were somewhat more likely to say fair or poor, than respondents in the other areas (see Figure 7). Overall, those who said poor lived no closer to a facility than those who said excellent, but they had lived in their neighborhoods for a longer time. Respondents’ feelings about their neighborhoods appear to be independent of their judgment of a facility as a neighbor.

*Good Job:* In asking how good a job MWMC is doing maintaining clean water, OSRL interviewers read aloud excellent, good, fair and poor response categories, as well as a “don’t know” response; fully 49% answered that they didn’t know.<sup>2</sup> Among those 205 respondents who did have an opinion, 25% overall said excellent, 56% said good, 16% said fair, and 3% said poor. Those in the Treatment Plant neighborhood were the most satisfied with MWMC’s performance, with fewer than 10% (of those who had an opinion) saying fair or poor (see Figure 8).

*Trust:* To assess trust in MWMC, OSRL modified a classic “trust in government” question which has been used nationally for decades: “How much do you think you can trust the [government/wastewater agency] to do what is right about maintaining clean water?” Twenty-eight percent responded “just about always,” 44% said “most of the time,” 15% said “only some of the time,” 1% volunteered “never,” and 12% said they did not know. Those in the Treatment Plant and Fillmore neighborhoods showed higher levels of trust than other areas, at 35% and 33% “just about always.” Not surprisingly, trust varies positively with the quality of performance respondents assess and with feelings about the neighborhood.

The 66 respondents who expressed distrust were asked why. Twenty-four percent said that they just do not trust government agencies in general, 24% believe that MWMC is hiding problems or potential problems, 17% believe that MWMC is cynically watching out for their own good, 12% feel MWMC is not doing a good job, 9% simply trust no one, and 6% referred to problems with water.

### **Figure 7: Rate WW Station as a Neighbor**

<sup>2</sup> Usually, OSRL allows volunteered don’t know responses, but does not include them in the question. In cases like this, however, in which many respondents truly do not know what the agency does, “don’t know” can be an important substantive response.

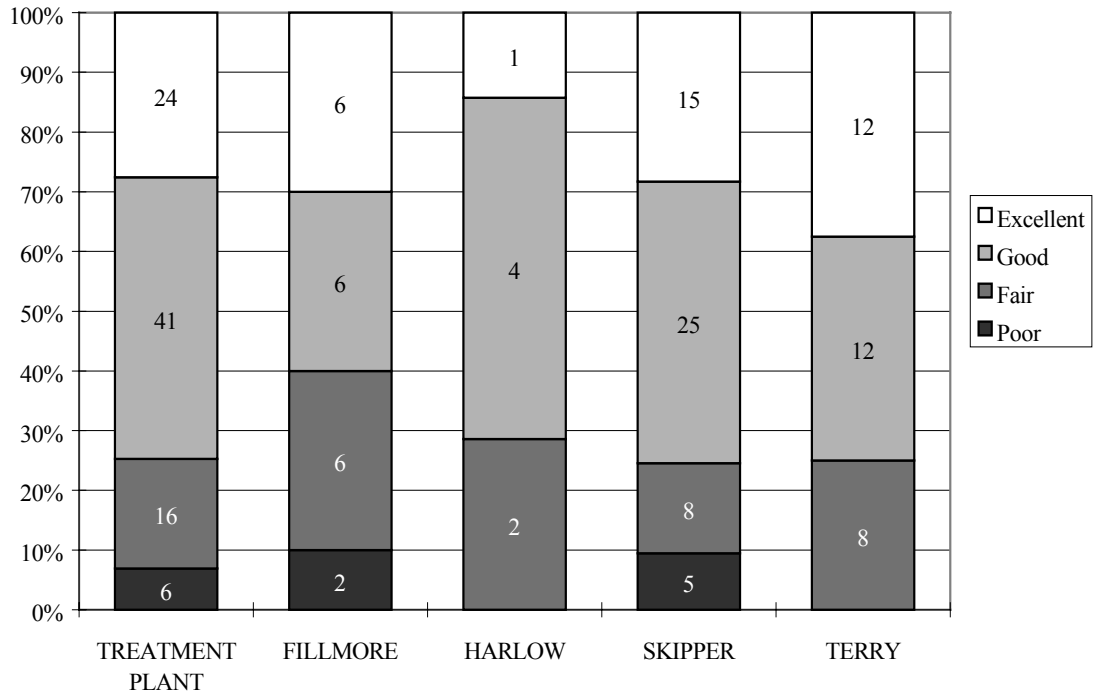


Figure 8: WW Agency is Doing Good Job

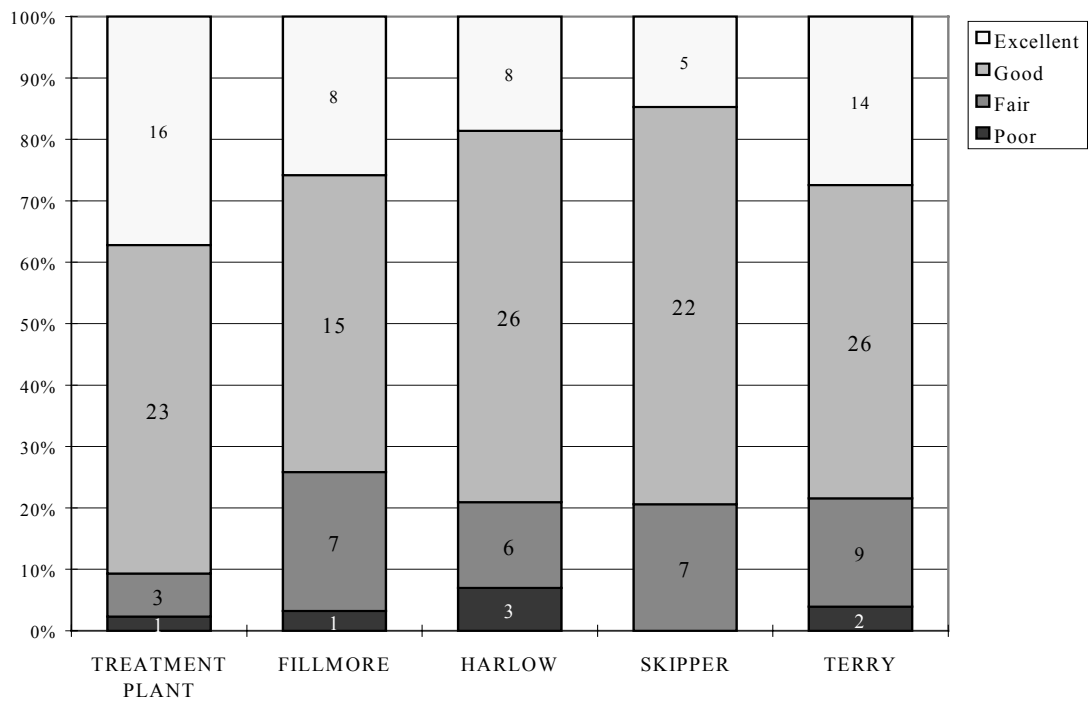


Figure 9: How Much You Can Trust the WW Agency

