

# Multifamily Dwelling Recycling Evaluation Report



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## **Table of Contents**

<b>Section</b>	<b>Page</b>
Executive Summary .....	1
Baseline.....	1
Challenges.....	2
Key Findings & Best Practices .....	3
Program Review .....	5
Conclusions.....	6
Section 1: Overview .....	7
Introduction.....	7
A. Basic Facts Summary.....	7
B. Challenges to MFD Recycling.....	9
C. Outreach Frequency .....	10
D. Participation and Audits.....	10
E. Franchise Provisions .....	12
F. Outreach Materials.....	17
G. Member Agency Best Practices .....	18
H. Other National Program’s Best Practices .....	21
Section 2: Review of StopWaste.Org’s Multifamily Grant Assistance Program.....	23
A. Grant Administration .....	23
B. Grant Program Summary .....	25
C. Feedback from Member Agencies on Grant Administration.....	26
D. Evaluation of In-Unit Collections Containers.....	26
Section 3: The Potential of Organics MFD Program .....	27
Section 4: Space and Access Guidance Review.....	29
Section 5: Conclusions .....	30
Section 6: Bibliography:.....	33

## **Figures**

Figure 1 – Percentage of Landfilled Discards by Sector (Weight, Year 2000)

Figure 2 – Alameda County MFD Waste Stream Characterization

Figure 3 – Distribution of MFD Recycling Facility Used

Figure 4 – Challenges Identified by Alameda County Jurisdictions

## **Tables**

Table 1 – Alameda County Basic Facts Summary

Table 2 – Summary of Member Agency MFD-related Audits

Table 3 – Best Practices to Support MFD Recycling in Franchise Agreements

Table 4 – Grant Program Summary

## **Appendices**

Appendix A: Space and Access Guidelines

Appendix B: Best Practices for Property Managers

## **Executive Summary**

This report serves as an overview and evaluation of multifamily dwelling (MFD) recycling programs in Alameda County. For the purpose of this report, MFD is defined as a residence of 5+ units with shared collection including: townhomes, mixed use buildings, condominiums, and mobile homes. The objectives of this project were to:

- Create a baseline understanding of the MFD programs of the member jurisdictions.
- Identify best practices.
- Identify means by which StopWaste.Org and its member agencies can increase MFD diversion and create sustainable successful programs.

The span of this report covers best practices in Alameda County and compares them with other municipal programs in North America. Research conducted by Science Applications International Corporation (SAIC) is the source of the data and improvements recommended in this report. Research conducted includes:

- Surveys of member agency multifamily recycling outreach practices, past efforts and current initiatives to create jurisdictional profiles.
- Research and interviews of state and national programs to identify best practices and innovative ideas.
- Evaluation of StopWaste.Org's MFD Grant Program, including feedback from member agency applicants.

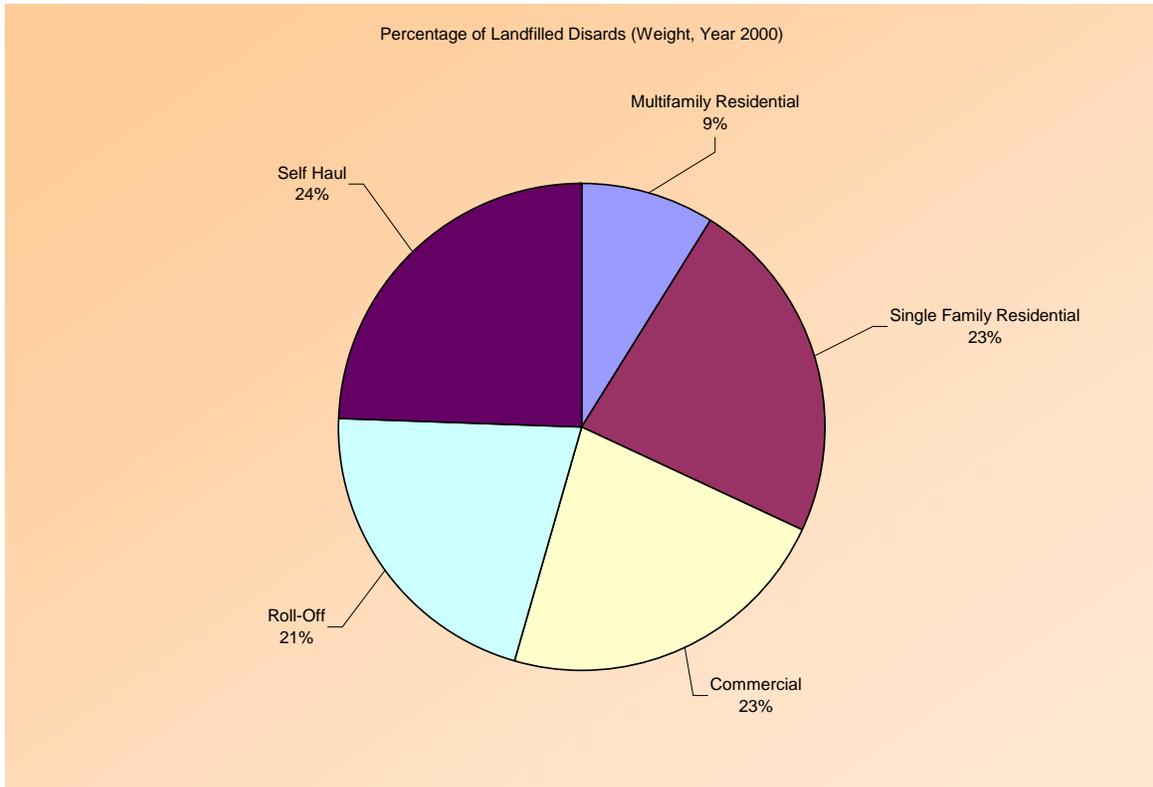
## **Baseline**

Approximately one-third of Alameda County's residences are multifamily units. Multifamily is defined as five or more units with shared collection service. All Alameda County jurisdictions offer recycling services to MFDs. Recycling service is reported to be offered at an average of 82% of MFDs countywide. Although 82% of MFDs have access to recycling and efforts have been continuously made to provide services to MFD residents, opportunities for improvement exist. In a 2007 opinion survey of Alameda County residents, two-thirds of Alameda County MFD residents interviewed are aware of on-site recycling at their building. The survey found that of those MFDs with no program, the majority of those surveyed reported that they would likely participate if one were implemented at their building or complex<sup>1</sup>.

To provide perspective, according to the Alameda County Waste Characterization Study of 2000, MFDs contributed 9% by weight of the materials disposed to landfill, compared to 23% for single family homes or 44% from commercial and roll-off accounts (the remainder is self-haul). Figure 1 below depicts the percentage of tonnages disposed by sector.

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<sup>1</sup> Fairbank, Maslin, Maullin & Associates.



**Figure 1 – Percentage of Landfilled Discards by Sector (Weight, Year 2000)**

A study of national municipal MFD recycling programs reported an average diversion rate of 15 percent through recycling<sup>2</sup>. Eleven of the 40 communities studied achieved MFD recycling rates of more than 20 percent. A few cities have been able to surpass a 25 percent goal for MFD diversion by creating incentives and mandates which motivate the various constituents involved with MFD program implementation and usage.<sup>3</sup> In Alameda County, the lack of MFD diversion data made it difficult to evaluate the effectiveness of our MFD programs. The data that we do have indicates that Alameda County's diversion rates are typical of nationwide averages.

## Challenges

It is widely recognized that there are a number of challenges specific to MFD recycling, which make it difficult to achieve high and consistent diversion. Challenges include:

- Space and Access: Many buildings were not designed with adequate space for separate collection of recyclables. Many buildings have garbage chutes with no accompanying recycling chute; making recycling less convenient for tenants.
- Manager and Tenant Transience: Frequent turnover of residents and property managers make program consistency difficult.
- Education and Outreach: Educational materials, such as garbage bill inserts and other

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<sup>2</sup> Multi-family Recycling: Costs, Diversion, and Program Characteristics, U.S. Conference of Mayors, 1999.

<sup>3</sup> CIWMB/ILSR Recycling in Multifamily Dwellings: A Model for Local Government Recycling and Waste Reduction: September 2001.

communications from the hauler and City, tend to reach only the owner or manager. Tenants do not receive regular education and outreach.

- **Contamination**: Contamination in recycling generally stems from a lack of education about the recycling program, motivation to participate in the program or from illegal dumping in recycling containers.
- **Data tracking & Collection Infrastructure**: MFD recycling is difficult to track and measure because it is collected with single family residential, commercial, and roll-off routes by haulers. This does not affect participation itself, but does create challenges for program tracking and evaluation.
- **Insufficient and Unenforced Franchises**: Goals and expectations including outreach frequency, service levels and data collection requirements are often not specified in the franchise agreement. Jurisdictions need to be familiar with and enforce the elements of their agreements
- **Priorities**: MFDs often house residents whose communities are focused on social issues more pressing than recycling. The tenants generally do not receive or pay the garbage bill and are therefore unmotivated by garbage bill savings.

Multifamily recycling programs are viewed as similar to small business recycling programs. MFD recycling is often serviced by haulers on the same routes as small and medium sized enterprises. These programs can be successful, but in general there are greater barriers along with a lower potential for diversion. For a number of municipalities, MFD outreach programs or small business recycling assistance are implemented as a civic responsibility to provide equal access to recycling rather than for diversion.

One of the biggest challenges in evaluating MFD recycling program success is the lack of data. While franchised haulers are required to provide service, they generally are not required to report participation rates or diversion data specific to MFDs. In order to make sound decisions regarding what initiatives would increase recycling diversion, data is needed to establish the current state of recycling for MFDs. Member agencies need to put data collection and reporting requirements into place for haulers to provide this information.

## **Key Findings & Best Practices**

There is no “one size fits all” solution to MFD recycling. Recycling should be made as easy and convenient as possible, within the limitations of the property and the waste collections system. Variations in building size, layout, resident characteristics, landscaping, and trash disposal systems require unique arrangements to suit specific sites. A great deal of effort and resources are required to make lasting gains in recycling collection at MFDs. The time and resources dedicated to MFD recycling programs by member agency staff and their franchised haulers vary widely. Education and infrastructure improvements can be made and should be specified in franchise agreements. Key findings and recommendations from the research conducted are summarized below.

- **Jurisdictional Franchises** - Franchise agreements negotiated between a jurisdiction and their selected hauler become the framework around which municipal recycling programs are built. This mutually agreed upon contract details the hauler's responsibilities of outreach, education and reporting, and meeting diversion goals. Member agencies should enforce the franchise provisions that support MFD recycling programs and ensure that their franchised haulers deliver on those requirements. Best Practices include the development of specific goals such as:
  - Determine the number of MFDs to be contacted for a specific time period and include education and outreach requirements (quarterly or twice annual contact recommended).
  - Prioritize which MFDs to contact (e.g. regular outreach and education to large MFD complexes, as defined by the member agency).
  - Establish data and recordkeeping requirements (i.e., annually) to determine actual participation rates or recycling diversion.
  - Require periodic audits of MFD accounts to verify service/service levels.
  - Specific performance standards for collection frequency, minimum service levels and diversion of franchised material by weight.
  
- **Targeting MFDs** - By prioritizing buildings for outreach, recycling coordinators and haulers can achieve the greatest increases in diversion for an investment of time and money. High priorities include: large buildings, MFDs with engaged on-site property managers, owner-occupied buildings, or those where residents pay for garbage service. Lower priority MFDs include those with compactors, functional garbage chutes (and little interest in other collection options), and those with numerous violations with the building department.
  
- **On-going Outreach** - Successful MFD programs require regular outreach. Several jurisdictions indicated that outreach occurs once per year or less. Reminders about recycling should occur at least twice a year to mitigate tenant transiency. Image-based messages help reach multi-lingual groups and those with varied levels of literacy. To streamline efforts, messages should include signage in collection areas, color-coded and labeled bins and carts. Move-in /Move-out kits can be provided to MFD owners and managers to help bridge the gap in tenant transience. Franchise agreements can stipulate outreach requirements and frequency.
  
- **Work with Property Owners and Managers** - Successful programs depend heavily on the level of commitment from property managers. Working directly with owners and property managers can help solve problems unique to that site and institutionalize recycling from the top down. Working with Property Management firms and real estate organizations can provide a means to streamline outreach and integrate recycling into lease language.
  
- **Site Visits and Right Sizing** - Site visits provide face time with resident and managers, and an opportunity to distribute educational materials and/or in-unit collection containers. On these visits, staff can verify service, assure adequate recycling capacity and troubleshoot problems. MFD accounts should be audited periodically to verify service/service levels and update information for more accurate reporting. Franchise agreements can stipulate that the hauler conduct twice annual site visits including service evaluation and right-sizing.

- **Require/Obtain Better Data** - Mixed commercial and MFD routes make it challenging for haulers to separate tonnages for garbage and recycling, but in order to track and improve MFD recycling this data is needed. Program baseline data needs to be established and data tracked. Member agencies are not consistent in requiring their franchised haulers to provide data or analysis. In order to make sound decisions regarding what initiatives would increase recycling diversion; data is needed to establish the current state of recycling for MFDs. Member agencies need to implement and enforce data collection and reporting requirements with their franchised haulers. It is recommended that jurisdictions require haulers to provide data in their franchises and consistently obtain the information.

## **Program Review**

- **StopWaste.Org Grant Assistance** - Since 2002, the Agency has provided grant funding, technical assistance and resources to Member Agencies. Approximately \$130,000 in funding has been awarded and outreach has been conducted to over 20,000 units. The average cost for program implementation was less than \$10 per unit. Based on the results, the grant program appears to be successful and cost effective.
- **Leveraging Resources** - In a FY07/08 pilot program, StopWaste.Org partnered with the City of Oakland and the California Department of Conservation (DOC) to increase multifamily recycling capture. The DOC awarded a grant totaling \$444,700 in funding and in-kind services for promotion of multi-family recycling in low-income populations. Funding was used for design and advertising, printing, purchase of in-unit containers, and consultant assistance for recruitment and material distribution. The DOC, StopWaste.Org and City of Oakland all contributed towards a media campaign promoting recycling. Technical assistance, in-unit recycling bags and outreach materials had been distributed to over 30 buildings and new recycling service has been added. This project is still in progress but provides an example of the possibility for partnerships.
- **Organics Collection** - Most cities are not offering wide-scale organics recycling services to MFDs (5+ units). Many MFDs do not have yard waste collection service due to franchise constraints, limited or no landscaping, or privately serviced landscaping contracts; thus making a commingled plant debris and food scrap collection program difficult to implement. Currently, 11 jurisdictions offer green waste collection to MFDs with eight collecting food scraps, mostly on a by request basis. If food scrap collection is offered, it is recommended that MFDs with strong traditional recycling programs and active on-site management be prioritized.
- **Space and Access for Recycling** - Limited capacity for recycling and restricted access by recycling vendors is a recurring challenge in multifamily units and complexes interested in establishing successful recycling programs. For strong program participation, recycling must be as convenient as taking out the trash. Addressing this issue is difficult in existing buildings. StopWaste.Org has developed “Recycling Guidelines for Multifamily Housing Design” and has incorporated the practices into the Multifamily Green Building Guidelines. The document covers how to estimate capacity for discards; how to calculate allotment for

recycling and trash containers; recommendations of where to place interior and exterior bins; considerations for mixed-use buildings and how to address the challenge of chutes that are used in tall buildings. Several member agencies in Alameda County have developed processes, documents or ordinances to support the equal access to and allocation of space for recycling containers.

## **Conclusions**

MFD programs have lower participation rates due to the multiple variables influencing success. Multifamily waste represents a fairly small fraction of the waste stream. Despite the perception that they are not being served, recycling service is offered at approximately 82% of MFDs countywide. Experience in Alameda County and across the nation has shown that significant effort and resources are required to make lasting program gains. How much time and effort to devote to this sector depends on jurisdictions' demographics and available resources.

It is recommended that jurisdictions work to institutionalize MFD recycling in their franchise agreements and enforce existing requirements. Data is needed to evaluate program success and progress. Accurate data can inform decision-making regarding where to focus limited resources. Education, infrastructure improvements and data collection requirements can be made and should be specified in franchise agreements. One-time outreach efforts are beneficial, but ongoing outreach is needed to maintain program participation. The Agency should continue to provide grant and technical assistance to member agencies, including franchise assistance. The Agency can also serve as a medium for sharing resources and tracking insights and practices from local and national programs. Partnership opportunities provide a unique opportunity to expand the scope and momentum of multifamily residential programs.

## **Section 1: Overview**

### **Introduction**

This report serves as an overview and evaluation of multifamily dwelling (MFD) recycling programs in Alameda County. For the purpose of this report, MFD is defined as a residence of 5+ units with shared collection including: townhomes, mixed use buildings, condominiums, and mobile homes. The objectives of this project are to:

- Create a baseline understanding of the MFD programs of the member jurisdictions.
- Identify best practices.
- Identify means by which StopWaste.Org and its member agencies can increase MFD diversion and create sustainable successful programs.

Access to residential recycling is mandated in Alameda County. In Alameda County and nationwide, recycling efforts focused on single family dwellings have largely been considered successful, but MFD programs remain a challenge. Approximately one-third of Alameda County's residential housing stock consists of multifamily dwellings whose waste comprises roughly 9% of the total waste stream in the county.

All jurisdictions in Alameda County offer multifamily recycling collection programs. The multifamily sector presents many challenges and contributes a relatively small amount to the waste stream. Successful MFD recycling programs generally require a great deal of outreach effort to residents, owners and property managers, and additional effort working with the MFD service providers.

The time and resources dedicated to MFD recycling programs by member agency staff and their franchised haulers varies widely. A number of factors affect the types of programs and the level of outreach: demographics, franchise agreements, and resources of city staff all play a part. In order to obtain a baseline of information regarding the state of MFD recycling in Alameda County, a survey was conducted with each member agency, coupled with several hauler interviews.

### **A. Basic Facts Summary**

Approximately one-third of Alameda County's residences are multifamily units. Multifamily is defined as five or more units with shared collection service. All Alameda County jurisdictions offer recycling services to MFDs. Recycling service is reported to be offered at an average of 82% of MFDs countywide. Although 82% of MFDs have access to recycling and efforts have been continuously made to provide services to MFD residents, opportunities for improvement exist. In a 2007 opinion survey of Alameda County residents, two-thirds of Alameda County MFD residents interviewed are aware of on-site recycling at their building<sup>4</sup>. The survey found

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<sup>4</sup> Opinion survey on Food Scrap and Curbside Recycling conducted for StopWaste.Org during the fall of 2007 by Fairbank, Maslin, Maullin & Associates.

that of those MFDs with no program, the majority of those surveyed would likely participate if one were implemented at their building or complex<sup>5</sup>.

To provide perspective, according to the Alameda County Waste Characterization Study of 2000, MFDs contributed 8.8% by weight of the materials disposed to landfill, compared to 23.1% for single family homes or 22.6% for the commercial sector<sup>6</sup>.

Each jurisdiction in Alameda County is unique in its percentage and type of multifamily dwellings, socio-economic strata, cultural diversity, languages spoken, and density of MFDs. For example, multifamily units comprise 36% of the residential units in both Dublin and Oakland; however, the demographics of the population and logistics of providing service are quite different. Emeryville and Livermore each have approximately 4,700 units of MFDs, but in Emeryville MFDs compose 88% of the residences compared to 16% in Livermore. Table 1 below summarizes some of the basic statistics gleaned from the surveys.

**Table 1 – Alameda County Basic Facts Summary**

	<b>Number of MFD Units</b>	<b>% MFD of Residential</b>	<b>% MFD Access to Recycling</b>
Alameda	15,090	46%	82%
Albany	3,344	46%	96%
Berkeley	25,461	55%	60%
Castro Valley	3,779	25%	94%
Dublin	5,139	36%	84%
Emeryville	4,786	88%	98%
Fremont	19,686	29%	99%
Hayward	14,709	31%	64%
Livermore	4,678	16%	91%
Newark	2,912	22%	80%
Oakland*	54,000	36%	87%
Oro Loma	15,026	42%	35%
Piedmont	69	2%	100%
Pleasanton	5,519	22%	100%
San Leandro	4,222	23%	80%
Union City	4,861	23%	65%
<b>Average:</b>	<b>11,455</b>	<b>34%</b>	<b>82%</b>

**Number of MFD Units** – Based on the CIWMB profiles for each jurisdiction, and verified or updated during the MFD surveys. (MFD unit is defined as five or more units plus mobile homes).

**% MFD of Residential** – The number of reported MFD units divided by the total number of residential units in that jurisdiction.

**% Access to Recycling** - the percentage of MFD complexes in the jurisdiction that are signed up for any level of recycling service.

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<sup>5</sup> Fairbank, Maslin, Maullin & Associates.

<sup>6</sup> Excluding any contribution from MFD from roll-offs.

## **B. Challenges to MFD Recycling**

It is widely recognized there are a number of challenges specific to MFD recycling, which make it difficult to achieve high and consistent diversion. Challenges include:

- Space and Access: Many buildings were not designed with adequate space for separate collection of recyclables. Recycling should be just as easy as taking out the trash. Many buildings have garbage chutes with no accompanying recycling chute, which makes recycling much less convenient for tenants. Variations in building size, layout, resident characteristics, landscaping, and trash disposal systems require unique arrangements to suit specific sites.<sup>7</sup>
- Manager and Tenant Transience: Frequent turnover of residents and property managers make program consistency and education difficult. Property managers serve as gatekeeper; directing maintenance staff, disseminating information to new and existing tenants and are the key to a successful program.
- Education and Outreach: Educational materials, such as garbage bill inserts and other communications from the hauler and City, tend to reach only the owner or manager. Tenants do not receive regular education and outreach.
- Contamination: Contamination in recycling generally stems from a lack of education about the recycling program, motivation to participate in the program or from illegal dumping in recycling containers. Repeated contamination in the recycling bins from non-participating residents can cause participants to give up their efforts.
- Scavengers & Bulky Waste: MFDs in dense neighborhoods suffer from scavenging of traditional recyclables, notably those with Container Redemption Value (CRV). Managers are reluctant to initiate recycling programs in fear of attracting noisy scavengers. Tenant moves may generate large amounts of bulky goods, such as furniture, appliances and mattresses and corrugated cardboard. Many MFDs oversubscribe to collection service to accommodate the fluctuations in materials.
- Data tracking & Collection Infrastructure: MFD recycling is difficult to track and measure because it is collected with single family residential, commercial, and roll-off routes by haulers. This does not affect participation itself, but does create challenges for program tracking, evaluation and gauging program success.
- Priorities: MFDs often house residents whose communities are focused on social issues more pressing than recycling. The tenants generally do not receive or pay the garbage bill and are therefore unmotivated by garbage bill savings.

MFD recycling programs are seen as similar to small business recycling programs.<sup>8</sup> MFD recycling is often serviced by haulers on the same routes as small and medium sized enterprises. These programs can be successful, but in general there are greater barriers along with a lower

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<sup>7</sup> CIWMB/ILSR Recycling in Multifamily Dwellings: A Model for Local Government Recycling and Waste Reduction: September 2001

<sup>8</sup> **Cutting the Waste Stream in Half**: Community Record-Setters Show How. US EPA & ILSR. 1999

potential for diversion. Jurisdictions have a limited amount of time and resources to spend on recycling programs. There is often one full-time recycling coordinator who must split their time between MFD, SFD and commercial. Member agency survey results indicate an average of four hours a week dedicated to MFD recycling. For a number of municipalities MFD outreach programs or small business recycling assistance are implemented more as a civic responsibility to provide equal access to recycling.

### **C. Outreach Frequency**

Transience of both property managers and MFD tenants results in the need for continual education regarding recycling programs. Overall, member agency MFD programs could conduct more frequent and consistent outreach. In many cases, jurisdictions will make a concerted and labor-intensive effort to “re-launch” MFD recycling programs by distributing outreach materials and in-unit collection containers, but little on-going outreach follows these efforts.

Survey results indicate that five jurisdictions provide information to MFDs or monitor bins once or twice a year: Castro Valley, Fremont, Hayward, Livermore and Newark. In Fremont, during 2005 – 2006, the Allied customer service representative worked to contact property managers quarterly once a program was established and was able to increase diversion by 7% by volume during that time period.

**Recommendation:** Twice annual contact should be made to MFD Property managers. This contact serves as a reminder and an opportunity to provide assistance and on-site troubleshooting. Regular outreach and education to large MFD complexes (defined by the member agency) can have greater impact than one-time contact with smaller properties. Even if a jurisdiction has little time to spend on MFD outreach, contact could be made through mailing or emails to property management companies.

### **D. Participation and Audits**

Recycling program participation is difficult to assess and is often different from reported level of service. While many buildings have been set up for recycling service at one point in time that does not mean that recycling containers are being utilized or that residents are actively participating. Some cities conduct periodic audits to verify service levels reported by their hauler.

While franchised haulers are required to provide service, they generally are not required to report participation rates or diversion data specific to MFDs. MFD data is difficult to collect as it is usually collected and commingled on mixed commercial routes. Member agencies have not regularly requested this data nor has the data been tracked consistently over time. Information gathered was not consistent across jurisdictions, even from the same hauler. Diversion estimates based on service levels are available for some cities. This data is useful to track a MFD recycling program’s progress within a city, but is not generally comparable between cities.

Accurate data can inform decision-making regarding where to focus limited resources. Audits are one tool that member agencies can use to assess their programs. Despite significant efforts, there were challenges to gathering and reporting meaningful data. At this time, the majority of MFD programs are not collecting consistent records on these metrics, and so it is difficult to assess the impact, progress and success of these programs.

Table 2 below summarizes the audits the various jurisdictions conduct, based on the responses to the MFD surveys.

**Table 2 – Summary of Member Agency MFD-related Audits**

<b>Member Agency</b>	<b>Audit Description</b>	<b>Frequency</b>	<b>Who conducts audit</b>
Albany	2008 audit underway	Single validation	Consultant for the City
Castro Valley	Accuracy of service level and services billed	Every 2 years	Franchised hauler
Emeryville	2006 SAIC/WM MFD Tonnage Study	Single validation	Franchised hauler and Consultant for the City
Fremont	Audit to determine allocation between MFD and Commercial Front End Load for reporting purposes.	Three audits a year	Franchised hauler
Livermore	Visual observation to verify bins being utilized.	Twice a year	Franchised hauler
Newark	Site inspection to determine participation and level of contamination.	Twice a year	Franchised hauler
Oakland	Service Verification Audit	Conducted in 2004 and 2007. In franchise agreements for up to annual audits.	City or Contractor for the City
Oro Loma	File audit and contact of the MFD customers to track their participation in recycling.	Periodically	Franchised hauler
Union City	Account Audit	Periodically	Franchised hauler

**Recommendation:** Jurisdictions should work with their franchised hauler to provide data on a regular basis (i.e., annually) to be able to determine actual participation rates or recycling diversion<sup>9</sup>. Member agencies should conduct or require franchised haulers to periodically audit MFD accounts to verify service/service levels and update information for more accurate reporting. Member agencies need to put data collection and reporting requirements into place for haulers to provide this information

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<sup>9</sup> “Alameda County Waste Management Authority - Best Practices Guide for Franchise Agreements” prepared by HFH. LLC (March 27, 2006).

## **E. Franchise Provisions**

Franchise agreements negotiated between a jurisdiction and their selected hauler become the framework around which municipal recycling programs are built. This mutually agreed upon contract details the hauler's responsibilities of outreach, education and reporting, and meeting diversion goals, and frees up jurisdiction staff for programmatic planning and monitoring. Thus, a well crafted agreement can provide the infrastructure necessary for a successful, self-sustaining MFD recycling program.

All but two of the jurisdictions have franchise agreements with a hauler for recycling collection at MFDs, either as part of their commercial or residential collection programs. One jurisdiction has municipal collection and one separates recycling post collection at a Materials Recovery Facility (MRF). Member agencies should enforce the franchise provisions that support MFD recycling programs and ensure that their franchised haulers deliver on those requirements. Best Practices include the development of specific goals such as:

- Determine the number of MFDs to be contacted in a specific time period (quarterly or twice annual contact recommended). This includes education and outreach requirements.
- Prioritize which MFDs to contact (e.g. regular outreach and education to large MFD complexes, as defined by the member agency)
- Data and recordkeeping requirements (i.e., annually) to determine actual participation rates or recycling diversion.
- Require periodic audits of MFD accounts to verify service/service levels.
- Specific performance standards for collection frequency, minimum service levels and diversion of franchised material by weight

The provisions in the table on the following pages are excerpted from the 2006 Best Practices Guide for Franchise Agreements Report prepared for the Alameda County Waste Management Board by HFH. Related jurisdictional practices, as reported in the survey, are shown in the adjacent column.

**Table 3 – Best Practices to Support MFD Recycling in Franchise Agreements**

	<b>Franchise Agreement Recommendations for Multi-Family<sup>10</sup></b>	<b>Jurisdictional Provisions</b>
Exclusivity	Franchise hauler has exclusive rights to traditional recyclable materials placed in collection containers by multi-family generators.	All member agencies have given the franchise hauler(s) exclusive rights to the traditional recyclable items set out for collection by MFDs. None of the jurisdictions have an open market for residential recycling.
Scope	<ul style="list-style-type: none"> <li>• Traditional recyclable materials collection, transportation, processing, and marketing for materials placed in collection containers by generators.</li> <li>• Public education.</li> <li>• Customer service and billing.</li> <li>• On-site waste assessments.</li> </ul>	<p>The scope of the franchise agreement encompasses the responsibilities of the hauler and generator.</p> <ul style="list-style-type: none"> <li>• All franchised haulers, with the exception of one, provide some outreach and public education.</li> <li>• Three jurisdictions (Castro Valley, Dublin and Fremont) have incorporated the best practice of offering on-site assessments.</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• Contractor provides collection containers in a variety of types and sizes (35-, 64-, and 96-gallon carts and 1 to 8 cubic yard bins). Contractor possibly charges customers a rental fee for use of container.</li> <li>• Contractor offers carts to use in the mail area of the premises.</li> <li>• Contractor provides each multi-family tenant unit with personal recycling bin or bag for inside collection of recyclable materials, and/or labels for customer-provided containers.</li> <li>• Containers to be consistently color-coded by material type.</li> <li>• Offer monthly steam cleaning of outside containers at no additional charge.*</li> <li>• City right to own containers at the expiration of the agreement.</li> <li>• Minimum specification for carts to include post-consumer recycled plastic.</li> </ul>	<ul style="list-style-type: none"> <li>• All franchise agreements require the generators to place the recyclable materials in specified containers, provided by the hauler.</li> <li>• While none of the haulers provide in-unit bins or baskets for MFD customers, two jurisdictions (Hayward and Emeryville) have clauses for their haulers to assist in distributing them.</li> </ul>

<sup>10</sup> This table is excerpted from: “Alameda County Waste Management Authority - Best Practices Guide for Franchise Agreements” prepared by HFH. LLC (March 27, 2006).

	Franchise Agreement Recommendations for Multi-Family <sup>10</sup>	Jurisdictional Provisions
Performance Standards	<ul style="list-style-type: none"> <li>• Provide collection as frequently as needed by customer, up to six times per week.</li> <li>• Provide a minimum of 10 gallons of capacity per tenant unit per week.</li> <li>• Collect missed pick-ups within 24 hours of customer call.</li> <li>• Set maximum allowable missed pick-ups based on the number of customer calls reporting missed pick-ups divided by the total service opportunities for all customers.</li> <li>• Set minimum standard for diversion of franchised materials by weight (e.g., (recyclable materials + organic materials) / (total recyclable materials + organic materials + solid waste)).</li> <li>• Set minimum annual requirements (which may be structured to increase each year of the contract) for the following benchmarks:               <ul style="list-style-type: none"> <li>- Percentage of total multi-family service volume that is recyclable materials service volume.</li> <li>- Percentage of multi-family customers that have recycling service.</li> <li>- Average volume of recyclable materials collected per tenant unit per week.</li> </ul> </li> <li>• Establish customer service standards including average hold times, and the maximum period to complete a customer's service change request (e.g., two weeks).</li> </ul>	Few performance standards have been set for MFD recycling.
Processing and Marketing	Same requirements as that listed for single-family recyclable materials.	

	Franchise Agreement Recommendations for Multi-Family <sup>10</sup>	Jurisdictional Provisions
Program Evaluation and Monitoring	<p>Same requirements as that listed for single-family recyclable materials plus the following:</p> <ul style="list-style-type: none"> <li>• Calculate and monitor quarterly or annually the following benchmarks:                             <ul style="list-style-type: none"> <li>- Percentage of total multi-family service volume that is recyclable materials service volume.</li> <li>- Percentage of multi-family customers that have recycling service.</li> <li>- Average volume of recyclable materials collection service provided per tenant unit per week.</li> </ul> </li> </ul>	<p>Three jurisdictions (Castro Valley, Dublin and Fremont) have incorporated the best practice of offering on-site assessments.</p>
Rate Structure	<ul style="list-style-type: none"> <li>• Use an integrated fee that includes the cost of recyclable materials and solid waste service; and charge customer based on their solid waste service level. Under this approach all customers are required to pay for recyclable materials collection, but it appears “free.” <u>Or,</u></li> <li>• Set the recyclable materials collection rate at no more than 50% to 75% of equivalent solid waste collection rate; and charge only the multi-family customers that subscribe to the program.</li> </ul>	<ul style="list-style-type: none"> <li>• Five jurisdictions have a flat per unit recycling rate, three have recycling rates bundled into solid waste rates, two offer recycling rates at a discount of the waste rates, one separates recyclables after collection.</li> <li>• Pricing structures in which increased recycling yields a reduction in total refuse costs create financial incentives for owners and managers. Care needs to be taken to ensure that MFDs do not under subscribe to service for lower rates.</li> </ul>
Reporting	<p>Same requirements as that listed for single-family recyclable materials plus the following:</p> <ul style="list-style-type: none"> <li>• Require hauler to perform a specific number of multi-family site assessments each year, and submit results of their site assessments quarterly, or upon request provide copies of assessment data and recommendations for individual site assessments. Alternatively, contractor can fund city use of an independent party to conduct site assessments.</li> </ul>	<p>Record keeping and reporting to the jurisdiction are crucial in program of the results quarterly or annually assessment and targeting outreach.</p> <ul style="list-style-type: none"> <li>• A few jurisdictions (Albany, Emeryville, Fremont, and Union City) have regular reporting requirements. In some jurisdictions these requirements are not enforced.</li> <li>• During the survey interview, the City of Fremont was working with their franchised hauler to implement quarterly goals for MFD outreach and a standardized reporting format.</li> <li>• Union City was developing a similar set of goals for their new MFD initiative.</li> </ul>

	<b>Franchise Agreement Recommendations for Multi-Family<sup>10</sup></b>	<b>Jurisdictional Provisions</b>
Education and Outreach	<p>The first three requirements listed for single-family recyclable materials plus the following:</p> <ul style="list-style-type: none"> <li>• Contractor responsible for providing signage on and around containers demonstrating acceptable materials.</li> <li>• Provision of flyers for tenants, signage for common areas such as mailrooms and laundry rooms, and move-in kits for new tenants, which shall be distributed annually.</li> <li>• Notification of all multi-family customers at least annually of the availability of recyclable materials and organic materials collection services and the possibility of reducing costs by recycling.</li> <li>• Contractor to attend property manager’s association meetings, homeowners’ associations, or other groups to promote recyclable materials and organic materials collection programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Nine member agencies specify support from their franchised hauler in their franchise agreement, in the form of proactive one-on-one contact with property managers and/or residents. Many do not enforce this clause.</li> <li>• Three of the jurisdictions did not report significant staff or hauler time devoted to MFD programs.</li> <li>• The City of Fremont in its franchise agreement has a dedicated full-time employee (FTE) dedicated to MFD. In practice this resource is shared with the commercial food scraps program in that jurisdiction.</li> <li>• The City of Dublin requires a FTE to assist commercial and MFD properties with recycling as well.</li> <li>• At the time the MFD surveys were conducted, none of the jurisdictions had measureable goals associated with outreach.</li> </ul>

**Recommendation:**

- **Rate Structure:** The rate structure for recycling and solid waste services is potentially one of the ways to motivate property managers and Owners who are interested in cutting costs to recycle. Bundling the cost of recycling into the solid waste rates is attractive because recycling appears “free” to the customer. Less preferable from the standpoint of a property manager is a rate structure where recycling is highly discounted, 50% - 75%, from the cost of solid waste<sup>11</sup>, as even a small charge for recycling is a barrier for some MFDs<sup>12</sup>.
- **Goals and Requirements:** Member agencies should enforce the franchise provisions that support MFD recycling programs and ensure that their franchised haulers deliver on those requirements. Best Practices include the development of specific goals such as:
  - Setting the number of MFDs to be contacted in a specific time period;
  - Education and Outreach;
  - Prioritizing which MFDs to contact; and
  - Data and recordkeeping requirements.
- **Customer Service:** Property managers are critical to successful recycling programs. A hauler representative in Fremont got the best results when he walked in without an appointment to meet a property manager. During these calls he would underscore the customer service that he was providing in assisting the property managers with their garbage and recycling issues. By listening to the challenges faced and helping to come up with solutions, he was able to gain the trust of several property managers of large complexes.

## **F. Outreach Materials**

All recycling campaigns require promotion and education. Literature and outreach materials are the public face of MFD recycling programs, functioning both as program advertisement and education. Effective materials must be well-designed and contain a simple message. Image-based messaging is key to reach multi-lingual groups and those with varied levels of literacy.

Information can be distributed through postcards, door-hangers, magnets, on-site signage and collection containers, as well as on jurisdiction and hauler websites. Jurisdictions can work with the haulers and utilize the regular recycling collection route for material distribution. Jurisdictions can create a mailing list to send mailings directly to every apartment unit.

About half of the member agencies have current MFD-specific outreach print materials, often distributed in conjunction with in-unit recycling bins. Almost one-third have MFD recycling specific websites.

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<sup>11</sup> “Alameda County Waste Management Authority - Best Practices Guide for Franchise Agreements” prepared by HFH. LLC (March 27, 2006).

<sup>12</sup> Conversation with Steve Sherman, ESA Lead for “Metro Identifying Barriers and Benefits to Effective Multifamily Recycling and Waste Reduction Behaviors” Report October 23, 2007.

**Recommendation:**

- **Frequency:** Successful MFD programs require outreach at regular intervals and more frequent outreach is needed. Reminders about recycling should occur at least twice a year at a minimum. The key to success is to streamline efforts as much as possible, so that staff resources are used efficiently. Jurisdictions can create a mailing list to send mailings directly to every apartment unit.
- **Messages:** To reach multi-lingual groups and those with varied levels of literacy the use of image based messages is recommended. Providing a link specifically for multifamily recycling on jurisdiction and hauler websites is an easy way to provide information to MFD residents and managers.
- **Targeted Materials:** The StopWaste.Org Waste Characterization Report (2000) found that four of the top 10 materials discarded from MFDs were fiber: other paper, newspaper, mixed paper and cardboard. These are the same materials identified by the 5-year assessment team for focus at MFDs by StopWaste.Org. Campaigns and mailings can focus on one targeted material at a time to really drive the message home with residents.

## **G. Member Agency Best Practices**

All member agencies offer MFD recycling. Although the member agencies have unique programs, employing various strategies and solutions that they feel are effective with their constituents; many of these are best practices that can be replicated in other jurisdictions with the right context.

- **Dedicated MFD Staff hours:** Staff, contractor or franchised hauler personnel hours dedicated to MFD outreach are needed to start up and maintain successful programs. Emeryville staff is committed to contacting all MFDs in their jurisdiction and providing in-unit recycling bins and outreach material to all tenants.
- **Dedicated Franchised Hauler Hours:** The City of Fremont has a provision in their franchise agreement that their hauler is to provide a full time employee to work on multifamily recycling.
- **Easily accessible information:** Simply providing a link specifically for multifamily recycling on the website is an easy way to provide information to MFD residents and managers. Promoting a hotline or phone number for recycling questions answered by the franchised hauler or the city is an easy way to assist proactive recycling residents.
- **Providing in-unit recycling Bins/Bags:** Baskets or bags provide a concrete reminder of the recycling program and a way to sort and transport materials to collection areas. Additionally, several styles of in-unit collection containers can sport graphics of acceptable materials.
- **Tailored recycling support and frequent follow up:** One size does not fit all. In working with property managers to improve recycling programs, the outreach team provides customized recycling support starting by talking to and listening to the challenges and issues that face a property manager. Protocols have been created to assure that follow up is provided in a sufficient and timely manner.

- **Feedback, ticketing/tags:** Feedback, both positive and negative, is valuable in letting residents and property managers know about contamination in their recyclables. Providing advisory tags or corrective action notices is a way to give immediate input to improve recycling. Oro Loma recycling and garbage drivers issue advisory tags that include checkboxes and graphics indicating why materials were not picked up. Once any problem is corrected the customer can call the hauler and the materials will be picked up at no extra charge. Castro Valley Sanitary District provides feedback using a colorful postcard that is sent to each resident at an MFD with contamination. The postcard has checkboxes to easily note what materials were placed in the wrong bins.
- **Measurable Goals:** The City of Fremont set measurable goals for franchised hauler staff, including proactively contacting a set number of MFDs per quarter; and required data reporting on each complex contacted.
- **Presentations to Property Management Associations:** Presenting information to property management associations is an efficient method to reach property managers and disseminate information about programs and resources available.
- **Providing Property Managers Incentives:** The City of Newark garnered the attention of property managers when they announced the incentives program for multifamily properties that participated in the municipal recycling program. Under this effort, Newark utilized grant funding from StopWaste.Org and the California Department of Conservation (DOC) to reward property managers for increasing recycling at their properties. Properties were rewarded with checks ranging from \$95 to \$19,935 based on their efforts and performance, as well as public recognition of their program. Incentives got the attention of the property manager to initiate programs, but were not sufficient to sustain program participation over time.
- **Targeting MFDs** - By prioritizing buildings for outreach, recycling coordinators can achieve the greatest increases in diversion for an investment of time and money. High priorities include: large buildings, MFDs with engaged on-site property managers, owner-occupied buildings, or those where residents pay for garbage service. Recycling service level is another useful guideline for prioritization (MFDs with little or no-recycling service). It can be useful to leverage relationships with managers who manage multiple buildings. Lower priority MFDs include those with compactors, functional garbage chutes with little interest in other collection options, and those with numerous violations with the building department.

#### **Member Agency Innovative Approaches:**

- **Partnerships:** By teaming with organizations with like-minded goals member agencies can benefit from shared resources. In a 2007 pilot program, the City of Oakland partnered with StopWaste.Org and the California Department of Conservation (DOC) to increase multifamily recycling capture. This innovative partnership pairs on-the-ground outreach services to lower income MFD communities with a regional media campaign focused on increasing recycling from the multifamily residential sector.

StopWaste.Org, in partnership with the City of Oakland, submitted a grant application to the DOC to increase MFD recycling through a combination on-the-ground outreach services to lower income MFD communities and local media. The DOC awarded a grant totaling \$444,700 in funding and in-kind services for promotion of multifamily recycling in low-

income populations. Grant funding was used for design and advertising, printing, purchase of in-unit containers, and consultant assistance for recruitment and door-to-door distribution of materials. The City of Oakland and StopWaste.Org contributed funds to an advertising campaign of bus, transit and billboard ads that were posted in the area of the targeted low-income MFD housing. The DOC sponsored a radio campaign targeting multifamily residents using a popular radio station in Oakland, Alameda County and the greater Bay Area.

The City of Oakland identified a targeted list of low-income MFDs which was prioritized based on service levels. Outreach materials were developed by the City of Oakland including a toolkit for property managers, poster, brochure and door-hanger. The tool kit consists of a specially designed folder containing a recruitment letter, sample letter to residents, outreach materials, and a magnet listing important numbers and websites for recycling.

Using grant funds from the DOC, customized in-unit recycling bags were designed and purchased and a consultant was hired to do outreach, recruitment and assessment of the MFDs. Civicorps Schools, a local non-profit, was contracted to distribute materials door-to-door. As of the writing of this report, this extensive effort has resulted in the addition of 32 new buildings set up with recycling service and distribution of materials to 1250 MF units. As a result of this effort, approximately 100 additional tons per year will be diverted. Concurrent with the grant funded outreach which targets only low-income housing, Oakland is conducting outreach to all MFD complexes citywide for improved recycling services and has distributed materials to 1000 units. This project was still in progress as of the writing of this report.

- **Fremont:** The City of Fremont has made a concerted effort for continual and ongoing outreach to MFDs and has incorporated practices into its Franchise. The City has institutionalized MFD recycling through charters and franchises. Weekly collection of recyclables is mandatory at single-family and multi-family residential complexes, and is provided by Allied Waste Services, on an exclusive basis. Fremont's franchise requires the hauler to provide one full-time equivalent (FTE) to be dedicated to MFD. The franchisee must do 3 audits per year to determine allocation between MFD and business collections for reporting purposes.

Fremont takes a proactive approach to contacting property managers, instead of waiting and responding to calls. The city maintains a list of all complexes, with basic contact information, service level data, and problems. Fremont plans to conduct continual and focused outreach with the goal of 50 complexes every 6 months targeted by size and geographic area. They are working towards tracking participation, contamination, service levels, signage and outreach. The City is working to systematize response and outreach. Currently, MFD diversion is about 1000 tons/year which is 0.5% of the city's total disposal for the year. It is therefore not the highest priority.

- **Castro Valley Sanitary District:** Castro Valley Sanitary District's (CVSD) award winning MFD recycling program takes a customized approach to increasing recycling through a joint outreach effort with WMAC and CVSD. The research, development and implementation of the MFD recycling program have produced an attractive and easy to understand campaign that can be customized to provide solutions for individual apartment, condominium, townhouse and trailer park communities.

Staff and the franchised hauler conduct analysis to determine MFD targets. The franchised hauler contacts the MFDs and conducts a site-assessment that includes a site survey with the property manager. They then create proposals to increase recycling to either 25% or 40-50% depending on the current service level. Recommendations are provided to the property manager leading to service change orders. An outreach plan and customized outreach materials are provided to the complex with in-unit containers.

A follow-up site visit is conducted to adjust service levels if necessary. The hauler reports garbage, recycling, and organics levels, and calculates the “diversion” percentage based on service levels. Every 2 years, all customers in the District are formally audited by the hauler with regards to accuracy of service level and services billed.

The program has been showcased in the District’s newsletter and a website has a link specifically for MFD recycling. The annual report sent to every bill payer mentions the program. CVSD was selected by the Solid Waste Association of North America (SWANA) to receive the 2008 Public Education Gold Excellence Award for its achievement with multifamily recycling.

**Emeryville:** MFD housing makes up 88% of the City of Emeryville’s residential population. Using funding from StopWaste.Org’s grant program, the City of Emeryville conducted a volume, tonnage and contamination study in order to determine the MFDs with the largest diversion potential. Watergate Condominiums, one of the largest MFDs in the City with 1247 units, was identified as a priority. This property has many of the elements identified for a successful program including an enthusiastic property manager; majority owner-occupied, and an on-site resident volunteer to facilitate the efforts of the City.

Staff worked with the property to create a customized program for this site. On-site assessments were followed by right-sizing of service, labeling of collection containers and signage at the 99 chute rooms and 12 parking garages. Outreach to residents included letters from the property manager, brochures, in-unit recycling containers and newsletter articles. The efforts at Watergate Condominiums resulted in a 25% reduction in waste and a 50% increase in recycling and organics collection by volume. The change in service resulted in an annual savings of \$56,000 on the garbage bill.

The effort at Watergate Condominiums became the template for additional outreach throughout the City. Outreach was conducted to a total of 24 MFDs consisting of 4473 units. Waste was decreased by 12% and recycling was increased by 5% by volume during that time period. Tracking and reporting templates were established for this project and are being used in their ongoing effort.

## **H. Other National Program’s Best Practices**

A study of municipal MFD recycling programs reported that the average program diverted 15 percent of residents’ waste from disposal through recycling. Only 11 of the 40 communities studied achieved MFD recycling rates of more than 20 percent. Below is a summary of several of the best practices, lessons learned and recommendations based on this research.

**Innovative Rate Structure** (San Francisco City and County, CA): San Francisco Department of the Environment has an innovative rate structure in which increased recycling yields a reduction in the total refuse cost reflected in the bill. Commercial accounts pay a set amount for garbage service based on volume and frequency, but receive a discount for the volume of recycling service on the monthly garbage bill. Residential accounts pay only for the volume and frequency of garbage service, with no additional cost for unlimited capacity of recycling and organics collection. Depending on building size and other considerations, MFDs are billed as either commercial or residential accounts.

- **Move In/Move out Kits** (San Mateo County, CA): Property managers are provided kits to inform residents of on-site recycling programs and resources upon moving in and moving out. RecycleWorks provides property managers move-in kits to distribute to new tenants. The kit includes a welcome letter, a summary of the recycling program, Recycling Guide for Residents, Household Hazardous Waste (HHW) Guide, and promotional items. The welcome letter asks new tenants to break down cardboard boxes and place them in the recycling bin. RecycleWorks also provides move-out kits to be distributed by property managers to tenants who have given notice to move-out. The move-out kits includes a Household Hazardous Waste (HHW) Guide and the RecycleWorks Recycling Guide for Residents.
- **Recycling Handbook: A Resource for Superintendents and Property Managers** (City of Toronto, Canada): Toronto has created “Recycling Handbook” for superintendents and property managers of apartment buildings. The handbook contains a comprehensive list of instructions and available promotional materials. The instructions on how to set up a program are simple yet also address important details such as the size of recycling collection containers based on the number of units. The highlight of the guide is a section on troubleshooting. The City, recognizing that recycling programs rarely run well without some tuning up, created a list of common problems with multiple suggestions of how to address each. The guide also contains a sample tenant letter, notifying them of the recycling program, and sample signs.
- **Direct mail to residents** (City of Chula Vista, CA): Starting in 2005, the City of Chula Vista implemented a multi-tiered outreach effort to promote the switch from dual stream to single stream recycling. Using DOC grant money, Chula Vista dedicated staff time to physically verify MFD service addresses and to form a complete list of every MFD unit in the city. According to Chula Vista’s Recycling Coordinator, direct mail to tenants is an effective way to bypass property managers that do not have time or resources to dedicate to outreach and recycling efforts. They promoted their switch to single stream by sending recycling literature directly to MFD residents and increased recycling from 90 tons per month to 1400 tons per month.

Jurisdictions could consider creating or updating an accurate database of MFD addresses based on information from the hauler(s). A one-time effort of phone calling and physical inspection would be enough to develop an up-to-date mailing list of each individual unit address that could be revised easily when new MFD units are added to the housing stock. It is important to ensure that recycling service is in place at the buildings prior to sending out promotional outreach.

## **Section 2: Review of StopWaste.Org’s Multifamily Grant Assistance Program**

StopWaste.Org actively seeks to lower the barriers for member agencies to address MFD recycling programs. The MFD Grant Program is an initiative that provides jurisdictions with seed money to get MFD recycling programs off the ground. There are two grants available at this time: one for member agencies, and one for infrastructure in MFD buildings.

### **A. Grant Administration**

#### ***Multifamily Unit Assistance Recycling Program Grant for Member Agencies***

- All member agencies are eligible to apply for grants.
- Up to \$15,000 per jurisdiction per fiscal year.
- Funds can be used for public outreach materials, in-unit collection containers and short term labor for distribution.
- Priority given to applicants who demonstrate a commitment of longer than 2 years, and have a targeted, efficient approach to increase diversion.
- Reporting is required during and after program, including a description of the program, invoices, disposal rates before, during, and one year after implementation.

#### ***Multifamily Unit Assistance Recycling Program Grant for Infrastructure Improvements***

- Properties referred by jurisdictions who participate in the StopWaste.Org MFD Assistance program are eligible to apply.
- Up to \$15,000 per applicant, applicant may not reapply.
- Funds can be used for collection area retrofits, recycling equipment, signage, and installation.
- Priority given to applicants who demonstrate a commitment of longer than 2 years, and have a targeted, efficient approach to increase diversion.
- Reporting is required during and after program, including a description of the program, invoices, disposal rates before, during, and one year after implementation.

Since 2002, the Agency has offered grant funding, technical assistance and resources available to all the member agencies. The grant money can be used for educational materials, infrastructure improvements and in-unit containers. Requests for other items have been granted on a case-by-case basis. Member agencies, MFD complexes and housing authorities have applied for and received grants. Other member agencies have used resources, such as line drawings, graphics and template outreach materials, for their programs.

Most programs resulted in a measurable increase in diversion, with Pacific Park Plaza and Watergate Condominiums in Emeryville leading the way. Pacific Park Plaza in Emeryville applied for grant funding for infrastructure improvements and more than doubled its diversion rate, from 11% to 28%. The member agency grant funded programs increased annual diversion by over 500 tons, at an overall cost of \$180 per ton. On average, the complexes involved increased their recycling service level diversion rates by 30% (by volume).

**Increased Participation:**

In reviewing completed grants, the grant program conducted outreach to over 20,000 units, which, assuming an average household size of two, means that over 40,000 people received recycling messages through some combination of signage, literature, in-unit recycling containers and face-to-face contact. Over a six year period of time, \$130,000 in funding was awarded. The average cost for program implementation was less than \$10 per unit.

Based on the results, the grant program appears to be successful and cost effective. As diversion continues, the \$180/ton spent in the startup year should provide a positive rate of return.

See Table 4, Program Summary on the following page.

## B. Grant Program Summary

**Table 4 – Grant Program Summary**

Jurisdiction	Year	Amount Awarded	Program Details	Units Reached	Results
City of Alameda Housing Authority	FY08/09	\$7,000 Approved	Funding to be used for production and installation of durable signage in collection enclosures of 12 Alameda Housing Authority sites.	565 units	Currently in progress
Castro Valley	FY07/08	\$11,040 Approved	Funding to be used to print outreach materials and to conduct a media campaign to reach MFD residents	3481 units	Currently in progress
Dublin	FY02/03	\$6,568	PRBs were distributed by boyscouts along with outreach materials	4262 units	3% increase in diversion, up to 11% diversion after 1 year
	FY07/08	\$22,300	Funding to be used to print outreach materials and distribute outreach materials and in-unit containers to MFD residents	1676 units	Currently in progress
Emeryville	FY05/06	\$10,426	Conducted baseline study of all MFDs to assess levels of service and determine levels of contamination.	4786 units	Baseline data obtain for each property. Analysis showed weekly generation of 16.2 gal/unit of trash and 8.1 gal/unit of recycling per pick up.
	FY02/03	\$30,000	Pacific Park Plaza had diversion rates at about 11%. Grant money was used to purchase collection and carrying equipment so that janitorial staff could collect recyclables from trash rooms where tenants threw trash into trash chutes.	585 units	Diversion rates increased to 28%
Fremont	FY04/05	\$15,000	Delivery of 18,165 Multi-family Program Guides, Personal Recycling Bags to 20 complexes, 3,481 units. Performed site visits and service evaluations at each complex	3550 units	Increase in recycling from 10.0 to 12.5 lb/unit. Trash also increased from 29.0 to 32.0 lb/unit
Hayward	FY03	\$30,340	Conducted a pilot with two apartment complexes, Lord Tennyson, and Clarendon Hills. Efforts included: distribution of literature, PRBs, and toolkits to property managers.	537 units	Data available for only Tennyson Apartments. Garbage decreased 3.3tons/month, Monthly Average Recycling increased 0.13 tons/ month. Diversion Rate after 1 year was .014%
Livermore	FY02-05	\$11,780	Distributed over 4,000 PRBs door-to-door	4748 units	2% increase in diversion 1 year after implementation
Newark	FY04/05	\$5,000	Newark combined funding from the StopWaste Incentive Funding, the Department of Conservation, and the StopWaste Multifamily Grant with a total of \$107,721 to fund projects. Newark created an incentive program and conducted a thorough outreach campaign. See case study below for details.	1622 units	6% increase in diversion by weight. 66% increase in diversion capacity of participating complexes 25% increase average diversion capacity. 71% increase in average per-unit recycling volume (21.1 gallon/week/unit).

### **C. Feedback from Member Agencies on Grant Administration**

In general, feedback regarding the grant administration was positive. Jurisdictions noted that the process was straightforward, reporting was easy and grant money was useful to supplement small budgets. Although sometimes perceived as burdensome, data collection is crucial in the grant process. Baseline data is an important part of reviewing a grant's success and to evaluate if efforts have resulted in an increase in diversion. Stopwaste.Org has developed standardized reporting spreadsheets to ease the data collection process.

*Recommendation:* Staff should look for more frequent opportunities to inform member agencies about the Multifamily Grant Program and for ways to streamline reporting. Letters of commitment are recommended to ease data collection. Stopwaste.Org can make a sample application available to member jurisdictions. StopWaste.Org should consider longer duration of data collection and outreach requirements.

### **D. Evaluation of In-Unit Collections Containers**

In-unit collection containers (bags or bins) are useful to promote residential recycling programs. In-unit collection containers are effective in storing recyclables as well as to transport the materials from the residential units to the common collection area for recyclables. The in-unit collection containers serve as a concrete reminder of a recycling program. Most in-unit collection containers can be customized with graphics of acceptable materials, reinforcing the recycling message.

Over the years, StopWaste.Org has promoted the use of in-unit collection containers. They have provided them directly to jurisdictions with grant funding for decals and outreach materials. More recently, StopWaste.Org has provided grant funding to allow jurisdictions to order their own customized in-unit collection containers. Property managers, haulers, city staff or community service organizations, such as the Boy Scouts, can use in-unit recycling bag distribution as an opportunity to talk with tenants about the benefits of a recycling program, answer any questions and assuage any concerns they may have about participating.

Two types of in-unit collection containers have been distributed: a 6-gallon hard plastic basket; and a 5-gallon polypropylene bag. This hard plastic basket is durable, has more capacity and is designed to fit under the sink. Tenants in larger residential units seem to prefer these containers. The soft-sided bags are lower in cost and can be imprinted with customized graphics detailing program acceptable and non-acceptable materials. Tenants in smaller units reportedly prefer the flexibility of the softer containers as they can be stored in a wider variety of locations. Property managers found the bags easier to store, handle and distribute. The hauler representatives who have observed residents using the bags for recycling state that the investment in in-unit containers, especially the bags, was worthwhile.

*Recommendation:* Provision of bags as part of the franchise or through grant funding is as a good use of funding as a one-time capital cost, as opposed to an on-going cost.

### **Section 3: The Potential of Organics MFD Program**

Most cities are not offering wide-scale organics recycling services to MFDs (5+ units). Many MFDs do not have yard waste collection service due to franchise constraints, limited or no landscaping, or privately serviced landscaping contracts; thus making a commingled plant debris and food scrap collection program difficult to implement. Currently, 11 jurisdictions offer green waste collection to MFDs and with eight collecting food scraps, mostly on a by request basis.

It is recommended that traditional recyclables be prioritized for MFD efforts, since organics are a more challenging material. Buildings that have high levels of participation and diversion along with low levels of contamination of traditional recycling could be targeted for the addition of organics collection routes, as franchises permit. Outreach on this issue should be prioritized based on an established and well-functioning, successful recycling program already operating in the building.

More similarities exist between MFD and commercial collection programs in regards to food scraps recycling since each building is a different size with different parameters for collection and training. Jurisdictions may wish to consider MFDs with well-functioning recycling programs as commercial accounts and add them one by one onto commercial or residential routes.

**Castro Valley Organics Collection** - When conducting on-site outreach to MFDs, the food scrap recycling program is explained to property managers. Property managers can elect to include the service and selectively invite interested tenants to participate. This level of control allows the program to grow slowly, but successfully.

**San Francisco Organics Collection** - San Francisco MFDs charged as residential customers pay for volume and frequency of garbage service at no additional cost for unlimited capacity of recycling and organics collection. However, MFDs may have to pay for extra services, such as key and distance charges. Recently, San Francisco Department of Environment was able to convince their hauler to waive key and distance charges associated with the green carts for MFDs. This has encouraged hundreds of MFDs to order green cart service that would previously not have considered the service, due to the associated charges. Case studies show that with this program change, one 45-unit MFD increased recycling service, began organics collection and significantly decreased garbage service. They have been able to decrease garbage volume from four 96-gallon carts picked up seven days per week to four 96-gallon carts picked up two days per week, with a savings of approximately \$20,000 per year.

**San Jose Green Team Composting of residuals** - San Jose's Green Team is required by contract to meet a 35% diversion rate for both SFD's and MFD's. San Jose adopted a proposal to greatly expand recycling at multi-family dwellings (MFDs), by amending the GreenTeam agreement for recyclables and garbage collection. In San Jose's voluntary program, the city has a separate contract with one of its recyclers to serve multi-family households. Built into this contract (and its other residential recycling contracts) is a per ton incentive payment through which the contractor receives more money from the city for each ton of recyclables that are collected from MFDs and actually marketed.

Garbage collected from MFDs is processed at a waste processing facility in San Jose to remove recyclables such as cans, bottles, and paper. Remaining material, consisting largely of food waste, is composted at a nearby composting facility. The composting of the residuals was determined to be the most cost-effective way to achieve 75% diversion in the MFD sector and results in one of the highest diverting MFD recycling programs in the country. In addition, it reduces the environmental impacts of the MFD program by processing at a centrally located facility rather than the landfill. The structure of the program removes the burden on property managers and owners to implement and maintain on-site recycling programs.

Jurisdictions should cautiously consider backend recycling versus the traditional source separated recycling. Without the right processing facilities, backend recycling can result in low-recovery of recyclable materials and a highly contaminated compost product.

## **Section 4: Space and Access Guidance Review**

The lack of space to collect and store recyclables is a recurring challenge in multifamily units and complexes. Limited capacity for recycling and restricted access by recycling vendors becomes a frustration for both managers and tenants who are interested in establishing successful recycling programs. Research indicates a strong correlation between capture rates and the perceived presence of adequate interior space for processing recyclables, and distance to recycling bins affects container-recycling intensity<sup>13</sup>. One conclusion of a recent 2007 study is that “making recycling convenient, rather than persuading residents of its importance, seems to be the main challenge”<sup>14</sup>.

StopWaste.Org has developed a document titled “Recycling Guidelines for Multifamily Housing Design” and has incorporated the practices described therein into the *Multifamily Green Building Guidelines*. The document describes how to estimate capacity for discards; how to calculate allotment for recycling and trash containers; gives recommendations of where to place interior and exterior bins; and provides considerations for mixed-use buildings and how to address the challenge of chutes that are used in tall buildings.

Several member agencies in Alameda County have developed processes, documents or ordinances to support the equal access to and allocation of space for recycling containers. Cities that have not adopted their own space and access guidelines, default to the State requirement. Please see Appendix A - Summary of Space and Access Guidelines by Jurisdiction.

Trash chutes, mixed-use developments, and compactors present unique space and access design challenges. In existing structures where buildings have two chutes, converting one chute from trash to recycling can increase recycling collection. A pilot project at Park Merced in San Francisco showed positive results when one chute, of two chutes on each floor, was converted to “recyclables only.”<sup>15</sup> For new construction, two chutes are recommended: one for recycling and one for garbage. In the newly constructed Avenue 64 in Emeryville, the chutes are located near the elevators on each floor of the building and lead to a trash room in the garage.

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<sup>13</sup> “Recycling in multifamily dwellings: does convenience matter?” Ando, Amy and Gosselin, Anne. Economic Inquiry, April 1, 2005.

<sup>14</sup> Fairbank, Maslin, Maullin & Associates.

<sup>15</sup> Conversation with Alex Dmitriew, San Francisco Department of the Environment, May 7, 2008.

## **Section 5: Conclusions**

There is no “one size fits all” solution to MFD recycling. Variations in building size, layout, resident characteristics, landscaping, and trash disposal systems require unique arrangements to suit specific sites.”<sup>16</sup> Successful programs provide participants with the convenience of residential programs while working with individual haulers to provide services for MFDs that fit into their waste management systems.

In order to measure program results, baseline data needs to be established and data tracked over time. Member agencies are not consistent in requiring their franchised haulers to provide data or analysis. Mixed commercial and MFD routes make it challenging for haulers to separate tonnages for garbage and recycling, but in order to improve MFD recycling this data is needed.

While program improvement can be found through certain elements such as franchise agreements, rate structure, and outreach frequency, there is still room for innovation. Resource sharing and periodic review of other local and national programs can provide insight and inspiration. Partnerships with other agencies provide a great opportunity to expand the message and strategy and to try innovative approaches.

Member agencies can take-on a number of actions to bolster their programs, including:

- **Specific language in Franchise Agreements** - Franchise agreements negotiated between a jurisdiction and their selected hauler become the framework around which municipal recycling programs are built. This mutually agreed upon contract details the hauler’s responsibilities of outreach, education and reporting, and meeting diversion goals, and frees up jurisdiction staff for programmatic planning and monitoring. Thus, a well crafted agreement can provide the infrastructure necessary for a successful, self-sustaining MFD recycling program.
- **Targeting MFDs** - By prioritizing buildings for outreach, recycling coordinators can achieve the greatest increases in diversion for an investment of time and money. High priorities include: large buildings, MFDs with engaged on-site property managers, owner-occupied buildings, or those where residents pay for garbage service. Lower priority MFDs include those with compactors, functional garbage chutes with little interest in other collection options, and those with numerous violations with the building department.
- **On-going outreach to MFDs** – Frequent education is required for both property managers and MFD tenants. Member agencies need to be more proactive in raising awareness for MFD recycling programs on a more regular basis. Materials should be distributed at a minimum of twice annually to account for frequent turnover of management and tenants. Expending resources to obtain accurate email addresses and mailing addresses for property managers and for tenants can pay off by providing a way to disseminate information. Messages should include appropriate on-site signage recycling container labeling. Image-based messages help reach multi-lingual groups and those with varied levels of literacy.

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<sup>16</sup> CIWMB/ILSR Recycling in Multifamily Dwellings: A Model for Local Government Recycling and Waste Reduction: September 2001

- **Work with Property Owners and Managers** - Successful programs depend heavily on the level of commitment from property managers. Jurisdictions can work with Property Management firms and Real Estate Organizations to gain access to buildings, and integrate recycling into lease language. As part of the current outreach effort in Oakland, program efficiencies and momentum has been realized by working with the manager of several different properties.
- **Site Visits and Right Sizing** - Site visits provide face time with resident and managers, and an opportunity to distribute educational materials and/or in-unit collection containers. On these visits, city or hauler recycling staff can verify service and assure adequate recycling capacity and provide value to the property by right-sizing their recycling and trash collection containers. Site visits not only allows staff to verify capacity, but also to identify problems with recycling programs and effectively troubleshoot them. Franchise agreements can stipulate that the hauler conduct twice annual site visits including service evaluation and right-sizing.
- **Require/Obtain better data** – There is a need for more consistent data collection regarding MFD programs. Necessary data includes: MFD recycling diversion, MFD complex participation and contamination. Member agencies need to work closely with the franchised haulers to obtain the data on a regular basis that can be used as a baseline or for tracking of the success (or failure) of programs. Member agencies need to implement and enforce data collection and reporting requirements with their franchised haulers. It is recommended that jurisdictions require haulers to provide data in their franchises and consistently obtain the information.

**StopWaste.Org’s Grant Program and Resources:** StopWaste.Org’s grant program has been effective in bridging the gap and providing resources towards improving MFD outreach and infrastructure. The grant program appears to be successful and cost effective in increasing participation and diversion. Although appearing to some jurisdictions as burdensome, the data reporting requirement is important and could be expanded for a longer period than one year in order to evaluate the long-term effectiveness of these efforts.

**In-Unit Recycling Containers:** While not a critical program component; the distribution of in-unit recycling collection containers appears to be an effective promotional tool to improve recycling programs. It is viewed as a good use of funding as a one-time capital cost, rather than an on-going one.

**Organics:** While organics represent the largest component of the MFD waste stream and a significant diversion opportunity, it is recommended that traditional recyclables be prioritized for MFD efforts, since organics are a more challenging material. Buildings that have high levels of participation and diversion along with low levels of contamination of traditional recycling could be targeted for the addition of organics collection routes, as franchises permit. Outreach on this issue should be prioritized based on an established and well-functioning, successful recycling program already operating in the building. Jurisdictions may wish to consider MFDs with well-functioning recycling programs as commercial accounts and add them one by one onto commercial or residential routes.

**Space and Access for Recycling** - Limited capacity for recycling and restricted access by recycling vendors is a recurring challenge in multifamily units and complexes interested in establishing successful recycling programs. For strong program participation, recycling must be as convenient as taking out the trash. Addressing this issue is difficult in existing buildings. StopWaste.Org has developed “Recycling Guidelines for Multifamily Housing Design” and has incorporated the practices into the Multifamily Green Building Guidelines. Several member agencies in Alameda County have developed processes, documents or ordinances to support the equal access to and allocation of space for recycling containers.

MFD programs are complicated to implement due to the multiple components that need to be in place for a successful program. MFDs contribute a small percentage of the total waste stream. Despite the perception that they are not being served, recycling service is offered at approximately 82% of MFDs countywide. Experience in Alameda County and across the nation has shown that significant effort and resources are required to make lasting program gains. How much time and effort to devote to this sector depends on jurisdiction’s demographics and available resources.

It is recommended that jurisdictions work to institutionalize MFD recycling in their franchise agreements and enforce existing requirements. Data is needed to evaluate program success and progress. Accurate data can inform decision-making regarding where to focus limited resources. Education, infrastructure improvements and data collection requirements can be made and should be specified in franchise agreements. One-time outreach efforts are beneficial, but ongoing outreach is needed to maintain program participation. The Agency should continue to provide grant and technical assistance to member agencies, including franchise and ordinance assistance. The agency can also serve as a medium for sharing resources and tracking insights and practices from local and national programs. Partnership opportunities provide a unique opportunity to expand the scope and momentum of multifamily residential programs.

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## **Appendices**



## **Appendix A: Space and Access Guidelines**

<b>Member Agency</b>	<b>Space and Access support for recycling</b>	<b>Details</b>
Berkeley	Review on a case by case basis	
Emeryville	City Review	Based on StopWaste.Org guidelines, plus dual chutes or no chutes rule.
Fremont	Waste handling guidelines have been developed for the planning department.	For multifamily there are guidelines for number of trash bins, number of recycling carts or bins, the number of enclosures and the square footage recommended for those enclosures based on the number of MFD units.
Hayward	Standard provisions instituted with the planning and building department	Standard provisions require equivalent space be allocated to recycling as for trash.
Livermore	Livermore Municipal Code – 8-08-040-B	Exterior enclosures for trash and recycling required for developments of four or more units. Enclosures need to be able to hold one 4 cubic yard bin and two 96 gallon carts. Minimum vertical clearance stipulated, and guidelines provided for slope and turning radius.
Oakland	Oakland Municipal Code – Ordinance 11807	Requires adequate area for collection and loading of recyclables. It specifies 2 cubic feet of space be allocated, with a minimum of 10 cubic feet.
San Leandro	Enclosure Guidelines based on CIWMB document	Recommends equivalent storage for trash and recyclables. Estimates recycling capacity based on 32 gallons/unit/week. San Leandro provides direct outreach to developers for re/modeling or new construction.
Union City	City Municipal Code	Requires recycling areas/enclosures adequate in capacity, number and distribution to serve the development. Also recommends that developers provide recycling space/systems within residences.
<b>Other Jurisdictions</b>		
Chula Vista, CA	Recycling and Solid Waste Plan Guide by Department of Sanitation	All residential properties are required to recycle or reuse 50% of their waste. Recycling bin volume 1 bin (4 cy min) to 8 – 12 residents.
Fresno, CA	Multifamily Service Requirements	Minimum combined service for Solid Waste and Recycling must equal or exceed a 2:1 ratio of 2 units per one cubic yard of service per week.

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<b>Member Agency</b>	<b>Space and Access support for recycling</b>	<b>Details</b>
Rancho Mirage, CA	17.20.160 Solid waste/recyclable materials storage.	Municipal code specifies 6 cubic feet of trash and recyclables storage within each dwelling unit. Common area recycling collection area (indoor or outdoors) is specified by square feet based on the number of units.
Sacramento, CA	Sacramento municipal code, Chapter 17.72 RECYCLING AND SOLID WASTE DISPOSAL REGULATIONS	Building plan approval requires the submittal of a plan indicating location and design specifications of the recycling and trash enclosure(s) and receptacle(s) and minimum recycling of 1 cubic yard for metal, glass, plastic, and newspaper.
San Francisco, CA	Administrative Bulletin with the Building & Inspections Department Also incorporated into the green building ordinance.	Adequate space needs to be provided for recycling, and must be as convenient as garbage. For a building to use chutes they need to incorporate 3 chutes (recycling, composting and garbage) or install technology that can keep the 3 streams separate.
Santa Monica, CA	Green building design and construction guidelines	Recyclables storage and handling area must be adequate for the recyclables flow from the occupancy, assuming a 100% recovery rate over a typical period between pickups. Assume that there will be a minimum of four recyclables: paper, metals, plastics and glass. Building operators should be trained to provide guidance for building occupants and ensure regular emptying and cleaning of the area. Recyclables separation instructions should be posted in universal symbols and several languages.
Toronto, Canada		Recycling must be as convenient as throwing away trash. i.e. double chutes or no chute.

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## **Appendix B: Best Practices for Property Managers**

## **Best Practices For Property Managers**

There are a number of best practices that PMs should employ to encourage their tenants to participate in a recycling program. A study by Katzev<sup>17</sup> found that PM dedication to recycling correlated positively with resident participation. Property manager commitment was defined as motivation, direct participation and interest in the MFD recycling program.

The following section summarizes a number of best practices that property managers and owners can take to encourage tenants to participate:

- **Convenience** – Recycling needs to be made convenient in order to be successful. Recycling containers should be as easily accessible as garbage containers, in terms of location. Distances to recycling rooms, areas or enclosures from MFD units should be within reasonable walking distance.
- **Location** - Based on the flow of materials in residences placing recycling bins adjacent to trash bins is best, both in common areas indoors, as well in collection locations below buildings or in enclosures. A number of studies have identified user friendliness of collection containers and their location to be the two factors most highly correlated with MFD participation<sup>18</sup>. User friendliness encompassed aesthetics, visibility, prominence, and cohesiveness. Location of the recycling collection area included distance from trash containers, proximity to MFD units and resident traffic and the lack of physical obstacles to the collection containers.
- **Cleanliness** – Property managers can foster recycling by keeping recycling areas clean and branding recycling as the clean way to handle discards. Neat, well-lit areas that are organized and feel safe lead to increased participation in recycling programs, as residents don't dread taking the recycling to the collection location.
- **Capacity** – Providing adequate capacity for recycling is key. If tenants separate materials correctly, it is still hard to participate in a recycling program if the containers are not adequate for the volumes generated
- **Labels and Signage** – Bins for both trash and recycling need to be clearly and correctly labeled. Using a consistent color coding scheme for interior and exterior bins helps. For garden-style or town-home style complexes, carts or bins should be labeled with the building or unit number to encourage ownership.

English is not the first language of many MFD residents. To facilitate non-native speakers or those with difficulty reading, signage posted should employ unambiguous

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<sup>17</sup> Katzev, R., Blake, G. & Messer, B. (1993) Determinants of Participation in Multi-Family Recycling Programs. *Journal of Applied Social Psychology*, 23(5) p383.

<sup>18</sup> Katzev, R. et al. (1993) p374 & p379 and Skumatz & Green (1999) p 11; Recycling Council of Ontario (2000) p50.

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graphics or photographs showing what materials can be recycled and clearly indicating which containers they should be placed in.

- **Education** – Tenant education needs to be ongoing. Frequent messaging serves as reminders for long-time residents and often as primary instruction for new tenants. Seasonal reminders about frequently discarded materials can help to remind tenants to recycle.

Property managers should take advantage of resident turnover as an opportunity to educate tenants about the recycling system, why it is important and how they can participate by distributing informational move-in/move-out kits. Proactive PMs can require that residents recycle as part of their lease agreement.

- **Incentives** – Property managers can create incentives for residents to recycle. This draws positive attention to the program as well as rewards good behavior. Maple Square in Fremont has created a program where if residents show they are recycling they earn a star. Once enough stars are earned they win a prize.
  - **Enlist Volunteers** – Property managers can recruit residents to assist. On one end of the spectrum their commitment could take the form of one time assistance to distribute fliers or in-unit collection containers. Or for those with an ongoing interest it could be a more formal arrangement, like auditing the community collection area, helping new residents or assisting elderly or disabled residents to transport their materials.
  - **Bulky Items** – MFD Managers can proactively work to have bulky items generated from move out or new purchases picked up (in jurisdictions where this is offered). This could decrease dumping and overages for MFD trash collection. Publicizing dates for bulky item collection or letting tenants know of a process to handle bulky items could help residents plan ahead and PMs to divert those items. Also providing PMs and tenants with names and contact information for thrift stores with drop off and pick up services is highly recommended. Reminding tenants that they can benefit from tax write offs is an excellent way to promote the idea.
  - **Reusable Items** – It is often said that one person's trash is another's treasure. One solution is to provide an area where residents can leave unwanted items for others perusal. A small storage cabinet with a combination lock can be designated. Residents can be provided with the lock combination during move in. When the storage shed is full the PM can call their favorite charity to donate all the items in there.
  - **Penalize for not recycling** -Some complexes have developed systems of economic penalties to encourage recycling by individual tenants. For example, if the management at Blossom Hills Estates in San Jose, Calif., finds a lot of recyclables in trash from a particular household and the household does not begin to comply with the recycling program, the complex can fine the residents \$30.
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