These materials were developed by CalRecycle staff for specific workshops and are posted as reference documents for the local government, interest groups and industry staff who attended this workshop.

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MRF Performance Standards: Technical Approaches

CalRecycle Workshop
November 26, 2012
LA County Dept. of Public Works Headquarters
12:00-4:00
Presented by Nancy Carr

CalRecycle

For Webinar Participants

Call in number:

E-mail comments and questions to:

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Agenda

Part 1 – Background and Recap of Past Workshop

Part 2 – Some General Information and Background for Today's Discussion

Part 3 – Details of Staff Discussion Option

Part 4 – Discussion of Other Options

BREAK

Stakeholder Input and Further Discussion

Next Steps, Wrap Up

Part 1

BACKGROUND AND RECAP OF PAST WORKSHOP

Background – why we should set a standard for MRF performance

- Reaching 75% - MRFs are an integral part, standards for higher performance will move us toward the goal
- Mandatory Commercial Recycling (MCR) requirement in AB 341- define “mixed waste processing comparable to source separation” (“Topic 1”)
- Defining residuals from high-performing MRFs such that a sufficient amount of recyclables have been recovered before residuals go to other uses such as energy recovery (“Topic 2)

Recap of September Workshop

- Provided information on regulatory status and existing data on MRFs in CA
- Discussed field reconnaissance and what staff learned
- Discussed some issues on comparing Mixed Waste Processing Facilities (MWPFs) and "clean" MRFs and system boundaries
- Discussed path forward for use of MRF residuals – a standard that could inform decisions as agencies deliberate Cap and Trade and renewable energy issues
- Heard many stakeholder comments
- Sept. Workshop presentation on CalRecycle website at http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=778&aiid=724

Recap - 4 options proposed for Topic 1 (MWPF Comparable to Source Separation)

- Option A –Specify amount of certain materials allowed in residuals from MWPF
- Option B - Require use of best management practices
- Option C - Specify recovery rate for MWPF
- Option D - Compare recovery results on a more system-wide basis
- Presented some issues and questions for each option

Recap - 2 options proposed for Topic 2 (Post-recycled MRF residuals)

- Option A –Specify amount of certain materials allowed in residuals
- Option B - Require use of best management practices
- Presented some issues and questions for each option

Stakeholder Comments Summary September Workshop

- A problem does exist - materials are being disposed that are readily recyclable.
- No consensus on any single option presented at workshop. All options received comparable support. Some recommended adoption of multiple options – "as many tools as possible."
- Requirements need to be:
  - Easily measureable/quantifiable,
  - Flexible to address local conditions, economics and markets, and
  - Enforceable and enforced evenly (level playing field).

Stakeholder Comments (cont.)

Additional Specific Comments/Suggestions:

- Need a landfill ban on recyclable materials.
- Need other options besides landfill and transformation, including CT.
- Look at whole system, including contamination in source separation programs (i.e., blue bins).
- Define what is recyclable and define when we are “done” recycling material.
- L.A. certificate program for MRF performance is an interesting model.
- First, focus on substandard dirty MRFs.
- Follow solid waste management hierarchy: require MRF first, compost second and thermal third.

Stakeholder Comments (cont.)

Additional Specific Comments/Suggestions:

- Consider requiring food to be composted.
- Siting compost facilities is impossible in Los Angeles.
- Most CT facilities don't want glass and metals. But, keep in mind that some forms of CT can recover materials such as metals at back end.
- All energy facilities should have MRF at front end and then the residuals should be acceptable feedstock for thermal conversion.
- There is an economic conflict of interest between BTUs for energy and recycling.
- Unmarketable residuals should be okay for CT.

Part 2

SOME GENERAL INFORMATION AND BACKGROUND FOR TODAY'S DISCUSSION

Staff Discussion Option

- To stimulate more focused stakeholder feedback, we picked one option that looked the most promising to flesh out in more detail
- And it is an option that could be applied to both topics 1 and 2
- Option A –Specify the amount of certain materials allowed in residuals
- All other options are still viable and on the table – but we didn’t look at them in as much detail yet

Main questions for any standard

Question 1: To whom does the standard apply?

Question 2: What is the standard?

Question 3: How would the standard be measured?

Question 4: How would the standard be enforced?

Discussing the questions for Topics 1 and 2

- Will discuss each of the questions for each topic
- Many aspects apply to both topics, so will discuss these together
- But there may be variations in how aspects apply to the different topics, so
- Variations will be noted separately

Question 1: To whom does the standard apply?

- The same for all options
- Application of Standard for Topic 1: MWPFs that receive materials from businesses/apartments that must comply with MCR
- Application of Standard for Topic 2: Any MRF wishing to be designated as high-performing by demonstrating that a “sufficient” amount of recyclables/compostables have been recovered

Application of Standard for Topic 2

Any MRF wishing to be designated as high-performing by demonstrating that a "sufficient" amount of recyclables/ compostables have been recovered

- This designation might be useful in defining whether residuals that go to other uses such as feedstock at an energy/fuel recovery facility are still considered solid waste or not
- It might also be useful for an energy/fuel recovery facility that wants to accrue other possible benefits related to high performance – RPS, Cap and Trade credits, advantage in the marketplace, etc.
- To develop the designation, CalRecycle needs to better understand current MRF performance level
- Will analyze need for additional data to better understand MRF performance in various regions and processing varying feedstocks

Question 2: What is the standard?

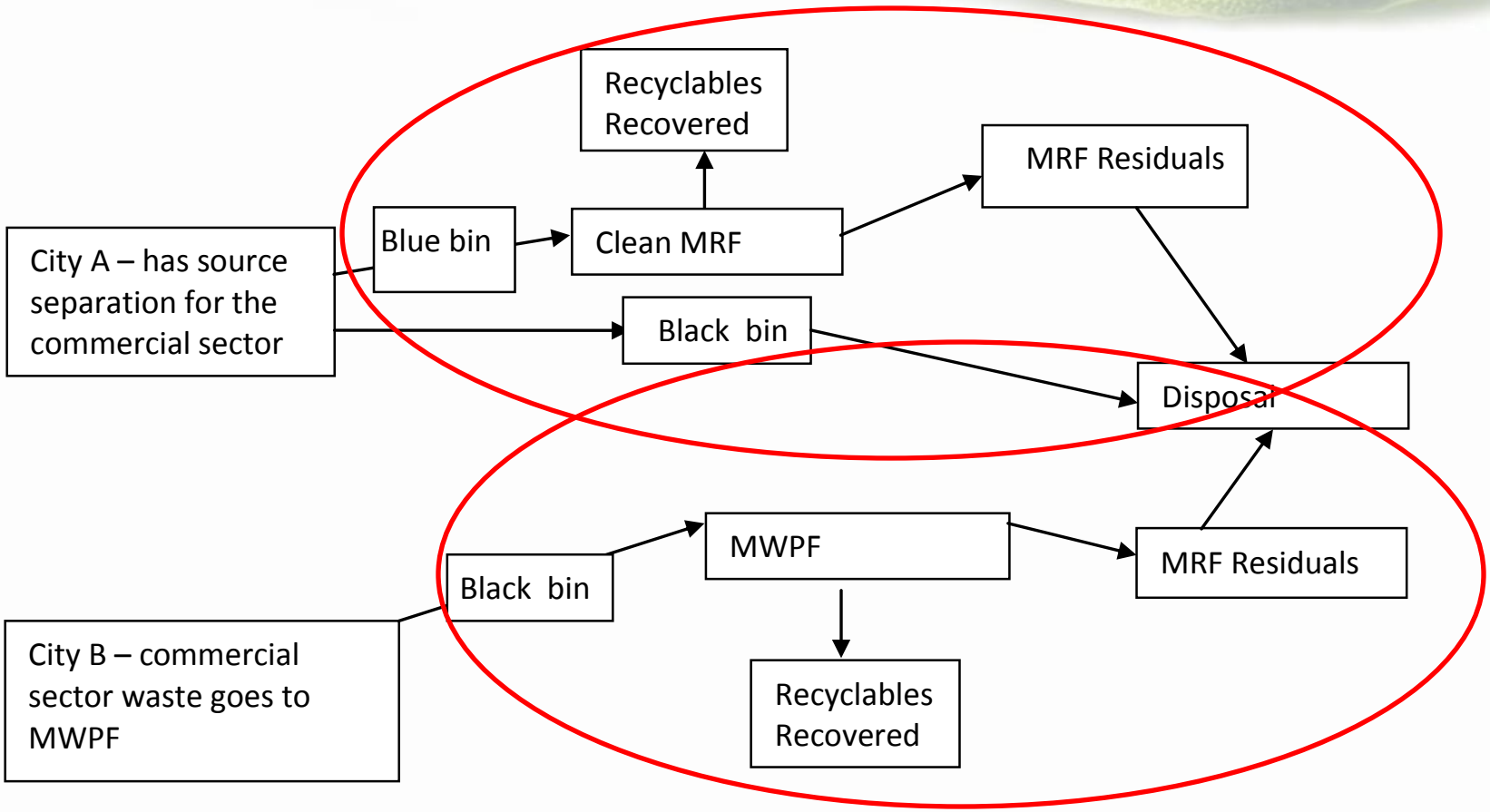
- Even for the same approach, i.e., Option A, the actual numerical standard could be different for Topic 1 and Topic 2 and so will be discussed separately
- How measured and enforced - could be the same for Topic 1 and Topic 2 and will be presented for both topics together

Issue for Topic 1 – What to compare to?

- "Businesses may subscribe to a service that may include mixed waste processing that yields diversion results comparable to source separation" (AB 341)
- How can we compare MWPF to a source separation standard when we don't know what that is?
- Need to know the amount of the targeted materials in the "residuals" of a source separation system

Recyclables in clean MRF residuals + Recyclables in the black bin
=
Recyclables in the residuals

Comparing Systems – where to draw the boundaries?



Getting data on source separation systems

2014 CalRecycle Waste Characterization Study

- Can characterize residuals at clean MRFs and MWPFs
- Can characterize contents of black bins
- Can get good evaluation of current source separation programs
- We need volunteer facilities to host characterizations!

No data until 2015?!

- Could develop interim standard using existing data
  - CalRecycle 2006 MRF Residuals Study – composition of overall MWPF residuals (but we don't have data for just commercial sources)
  - CalRecycle 2008 statewide study – composition of commercial waste disposed, divertibility study
  - From these data sources, may be able to estimate expected amounts of targeted recyclables in residuals
- Could use actual current data from MRFs eagerly supplied by YOU!
  - A much better solution

PART 3

DETAILS OF STAFF DISCUSSION OPTION

Question 2 for Topic 1 – Let's review

- Question 2 is: What is the standard?
  - The standard is: Certain target materials must not exceed a specified amount in residuals
- Topic 1 is:
  - The standard applies to MWPFs that receive materials from businesses/apartments that must comply with MCR

Developing the standard: List of Materials must be developed - ideas

- Could base it on what is commonly recovered in most recycling programs
- Could base it on which materials high-performing facilities recover
- Could take GHG benefits of recycling different materials into account
- Could have a minimum "non-negotiable" list
  - Certain types of paper, glass, metal, plastic, other?
- Should the list change over time (such as adding food waste as more programs develop)?

Developing List of Materials (cont.)

- For flexibility, could have a secondary list for "extra credit" if facility recovers additional materials
- Need to take current local markets and future markets into account
- Need to take other economic aspects into account
- Are other types of flexibility needed to address local conditions, e.g. availability of compost or AD facilities?
- Other ideas?

Developing the standard: Maximum amount allowable must be determined – ideas:

- Need to consider what is technically attainable – could look at current examples of high performance; balanced with practically and economically reasonable
- Standard should result in increased recovery (more than status quo)
- Could look at current average performance and ask for "above average"
- Economic factors must be addressed – cost of recovery, markets, ratepayers, etc.
- Condition of materials must be addressed – when recyclables are not recoverable or marketable
- Other ideas?

Application of Standard for Topic 2

To whom it applies:

Any MRF wishing to be designated as high-performing by demonstrating that a “sufficient” amount of recyclables/compostables have been recovered

- This designation might be useful in defining whether residuals that go to other uses such as feedstock at an energy/fuel recovery facility are still considered solid waste or not.
- It might also be useful for an energy/fuel recovery facility that wants to accrue other possible benefits related to high performance – RPS, Cap and Trade credits, advantage in the marketplace, etc.

What the standard is: Certain target materials must not exceed a specified amount in residuals

Again, list of materials must be developed – could be different from list for Topic A, but some (all?) of the same ideas may apply

- Could base it on what is commonly recovered in most recycling programs
- Could take GHG benefits into account
- Need to take current and future markets into account
- Etc. – see previous slides
- Is flexibility needed here, or is a non-negotiable minimum list appropriate?
- Should the list change over time? How does that affect long-range planning for use of residuals?
- Other ideas?

Developing the standard for Topic 2 (cont.)

Maximum amount allowable must be determined – could be different from that for Topic 1, but some (all?) of the same ideas may apply

- Need to consider what is technically attainable – could look at current examples of high performance; balanced with practically and economically reasonable
- Standard should result in increased recovery (more than status quo)
- Economic factors must be addressed – cost of recovery, markets, ratepayers, etc.
- Condition of materials must be addressed – when recyclables are not recoverable or marketable
- Other ideas?

Recap so far – standards for Topics 1 and 2

Topic 1 – "comparable to source separation"

- Standard must be defined since requirement is in statute
- MWPFs that want to serve businesses complying with MCR must meet the standard
- Need data on source separation systems in order to develop the standard

Recap so far (cont.)

Topic 2 – sufficient recyclables have been removed so residuals can go to other uses

- Voluntary for MRFs that wish to have their residuals to be attractive for other uses
- Voluntary for MRFs that wish to achieve higher performance that results in other advantages

Recap so far (cont.)

- Different purposes, but should it be the same standard?
- Advantages/disadvantages of having the same or different standards
  - One standard may make it easier for facilities overall
  - One standard may not adequately address all the nuances of the 2 topics
  - With two standards, can tailor each one to its specific purpose
  - Facilities may be interested in meeting the standard for only 1 topic

Review - Main questions for any standard

Question 1: To whom does the standard apply?

Question 2: What is the standard?

Question 3: How would the standard be measured?

Question 4: How would the standard be enforced?

- Questions 3 and 4 can be addressed for both topics together

Question 3: How would the standard be measured?

- Residuals would be characterized
- Could be a simple sort – targeted materials vs. all else
- Sampling method would be developed by CalRecycle with input from stakeholders
  - sorting procedures – hand sorts, weighing of materials
  - how, where, when, how often
  - data compilation and reporting
- Characterization results would be submitted to CalRecycle

Question 4: How would the standard be enforced?

- CalRecycle, LEA, or other third party (model after LEED or EPR?) would ensure sampling and sorting are done correctly, audit records
- Random sampling required to ensure representative results
- Unannounced visits to facilities could be used to confirm results that are reported
- Should phase-in period be allowed for existing facilities?

What we like about Option A

- Simple metric – just looking at one part of the system, may be easier to identify low performance
- Many variables can drop out of the picture if we just look at what's coming out at the end of the system
- MRF's performance is evaluated, regardless of feedstock and operations
  - if few recyclables coming in, few would be in the residuals; if feedstock rich in recyclables, they must be recovered;
  - high or low tech operations don't matter, just the results

What we like about Option A (cont.)

- Since jurisdictions and MRFs and local conditions vary, this is a simple approach
- List of materials and amounts could change as markets and technology change
- Quantitative standard – results are straightforward and easy to understand
- Workable for MRFs – many already do waste characterization for their own uses
- By limiting the amount of recyclables in residuals that could go to other uses, it limits competition for those recyclables by the other uses

What we don't like about Option A

- Need characterization of source separation system (clean MRFs and black bins) for comparison (but we potentially will have some very useful data)
- Could be difficult to determine when materials are unmarketable
- Cost to facilities for extra data collection and reporting may be too high
- Possible logistical difficulties in isolating residuals from commercial sources at MRFs
- Possible incentive to not sort some loads or manipulate processing(?)

Other Issues to be Settled

- How to deal with MRFs sending/receiving materials from other MRFs
- How to address if materials become too contaminated in mixed waste that could have been recovered in source separation
- Others?

PART 4

DISCUSSION OF OTHER OPTIONS

Other Options that Can Be Considered

- Option B - Require use of best management practices (Topics 1 and 2)
- Option C - Specify recovery rate for MWPF (Topic 1 only)
- Option D - Compare recovery results on a more system-wide basis (Topic 1 only)

Option B - Require use of best management practices – Topic 1

- Assistance from industry, local government, and other stakeholders especially needed for this option
- Would be applied to clean MRFs and MWPFs so that they are meeting a “comparable” standard of best practices for their system

BMPs Standard – How would it work?

- CalRecycle would develop list of BMPs for facility operations – can include equipment, labor, processes
- Standards would be developed for each BMP (with assistance)
- Facilities would select which practices they are using from the list and show how they are meeting the standard for each (submit application or report to CalRecycle)
- Periodic inspections would determine compliance

What we like about Option B - BMPs

- Very flexible
- Qualitative standard may be easier for facilities to meet
- Don’t need to develop a quantitative standard for source separation systems to be a “measuring stick” for MWPFs
- May not need reporting of quantitative data
- Could help facilities quickly identify areas for improvement and guide them on how to improve

What we don't like about Option B - BMPs

- Could become very complex to identify and set standards for all BMPs possible
- May not need reporting of quantitative data (Only our data heads don't like this!)
- Qualitative rather than quantitative standard could allow more fudging
- May be harder to clearly determine when standard is met
- May need to be frequently evaluated and changed as technology and practices change

BMPs for Topic 2 (High- performing MRF residuals standard) – additional points

- Would apply to all types of MRFs who voluntarily wish to meet this standard
- We wouldn't know as clearly what's in the residuals that might go to other uses

Option C - Specify recovery rate for MWPF - How would it work? (Topic 1 only)

- Could be an overall rate – all materials recovered by MWPF count
- Could only allow specific materials to count
- Need to determine current recovery rates from source separation programs for comparison (similar to task required by Option A)

Option C - How is it measured? If measuring an <u>overall</u> recovery rate:

- MWPF would provide data on tons received and tons recovered or disposed
- Tonnage data would need to be audited or verified and reported to CalRecycle
- This rate would be compared to the standard that was set based on data from source separation programs to determine compliance

Option C – If measuring a recovery rate for <u>certain materials:</u>

- List of materials that count would need to be developed
- Recovery rate standard would be based on amounts of these materials recovered by source separation programs
- Facility would need to report tons received and tons of target materials recovered (sold)
- This rate would be compared to the standard that was set based on data from source separation programs to determine compliance

What we like about Option C - a recovery rate standard

- Simple, quantitative metric
- Could be easy for facilities to develop data (may already have what's needed)
- Could allow much flexibility on how standard is met, if all materials count
- Some variables of the system can drop out of the picture
- May not need waste characterization studies

What we don't like about Option C - a recovery rate standard

- Need to determine current recovery rates from source separation programs for comparison (similar to task required by Option A)
- Issue of what counts towards recovery rate, e.g. materials going to ADC
- Target materials could still be in the residuals in significant amounts even if the standard is met
- Poor quality feedstock can hurt overall recovery even with good processing
- Could be an incentive to just send dirtier loads directly to landfills

Option D - Compare recovery results on a more system-wide basis (Topic 1 only)

- This could be largely addressed as described in Options A & B – gathering data on source separation programs in CalRecycle waste characterization study
- Depends on where boundaries are set
- Diversion also occurs outside the MRF systems – independent recyclers, in-house recycling, etc. which could be very difficult to measure

Recap – Considering Options

- Staff focused on Option A as most promising, and as way to stimulate more focused stakeholder feedback
- Option A – measure contents of residuals
- Standard could be different for Topic 1 (comparable to source separation) and Topic 2 (residuals for other uses)
- All options have pros and cons
- All options can still be considered (or combinations)
- All options have a lot of technical details to be further developed
- Stakeholder input and expertise is desired and needed

Sample from 2006 CalRecycle MRF Residuals Study

Stakeholder Input and Further Discussion

Next Steps

- More Workshops?
- Timeline
- Submit comments to MRFStandards@CalRecycle.ca.gov

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