

RE: Business Case #10 - 60% Waste Diversion Action Plan

Dec 24th, 2020

Dear Colleagues,

When I met with staff during the summer and asked them to consider looking into the potential savings and increased diversion available from mixed waste technologies, they said it would require direction from council. Realizing I would not win that direction on a hunch, I felt it necessary to do a deep dive evaluation into at least one mixed waste technology to see if there was a viable opportunity.

My conclusion, based on the attached report, is that there is a strong opportunity for savings in the tens of millions by pursuing mixed waste technologies without delay. In addition, total diversion could be increased to 71% in the near term and 90% in the longer term. I therefore ask that: Staff BE DIRECTED to include mixed waste technologies in both the public engagement and the procurement processes for the 60% waste diversion action plan.

Sincerely,

Michael van Holst
Councillor Ward 1

COVID Recovery with Green Technology

Dear Colleagues,

Our Minister of the Environment has charted a very sensible course for the future of waste management in Ontario:

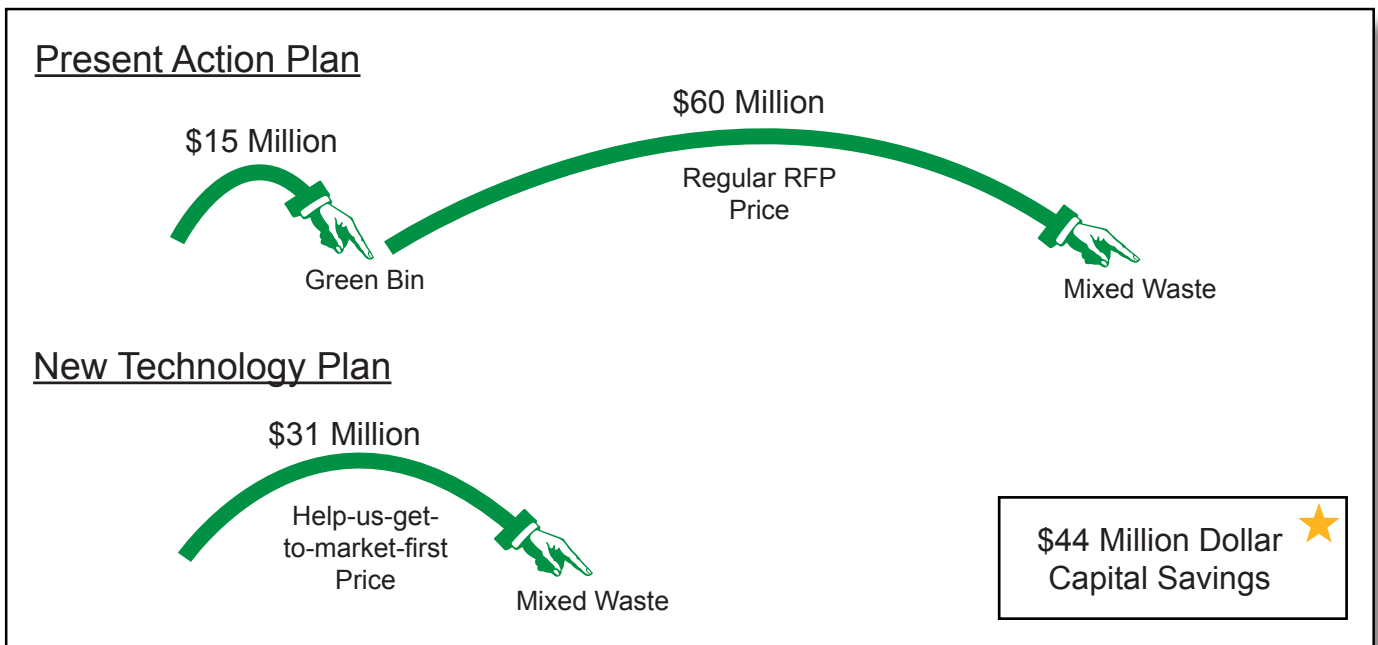
“We should promote innovation and new technologies that are good for the environment and good for our municipalities.”

- Minister of the Environment, Conservation and Parks, Hon. Jeff Yurek

London could exploit a rare opportunity to fulfill the minister’s mandate with a private public partnership that would save tens of millions of dollars over our present course of action and substantially improve our waste management outcomes with European technology. Please consider the following comparisons.

CAPITAL COST COMPARISON

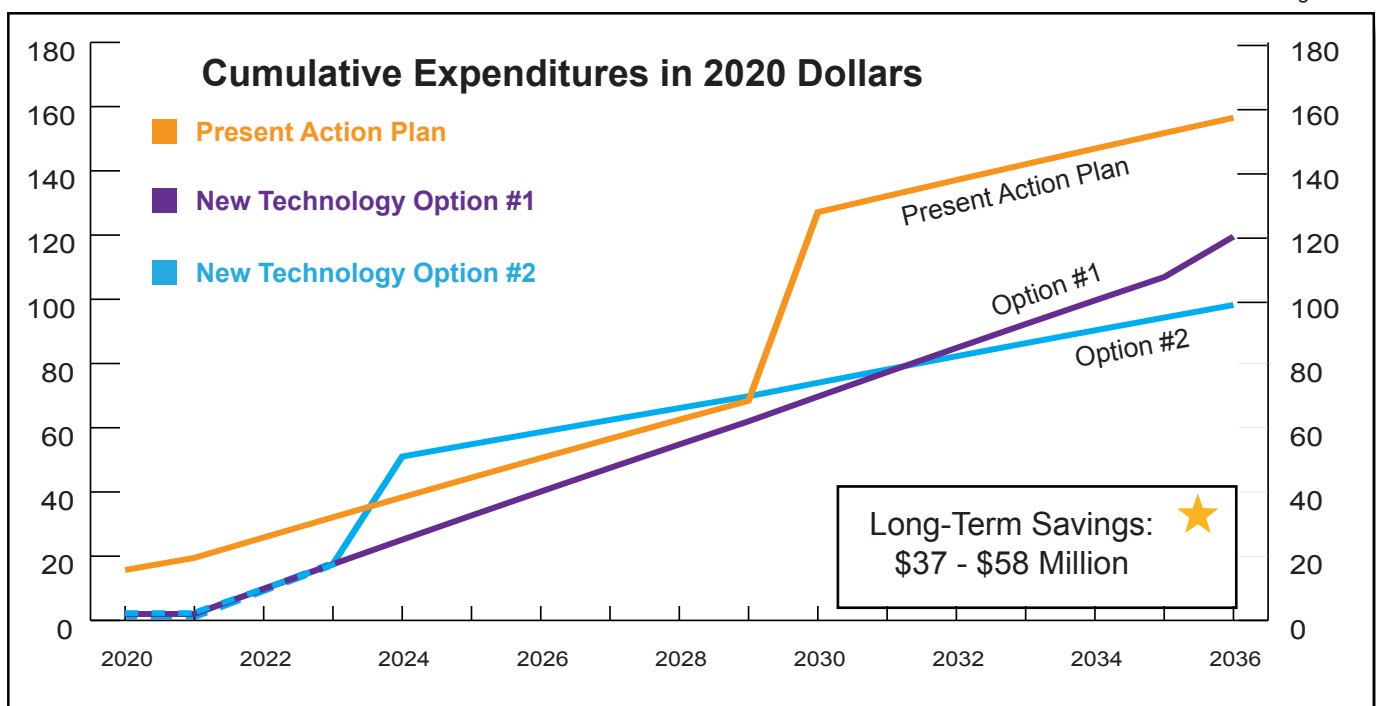
Figure 1



To determine the long-term savings, operating costs must also be considered. The graph below compares the cumulative capital and operating expenditures of the Present Action Plan and the New Technology Plan options in 2020 dollars.

LONG-TERM TOTAL COST COMPARISON

Figure 2

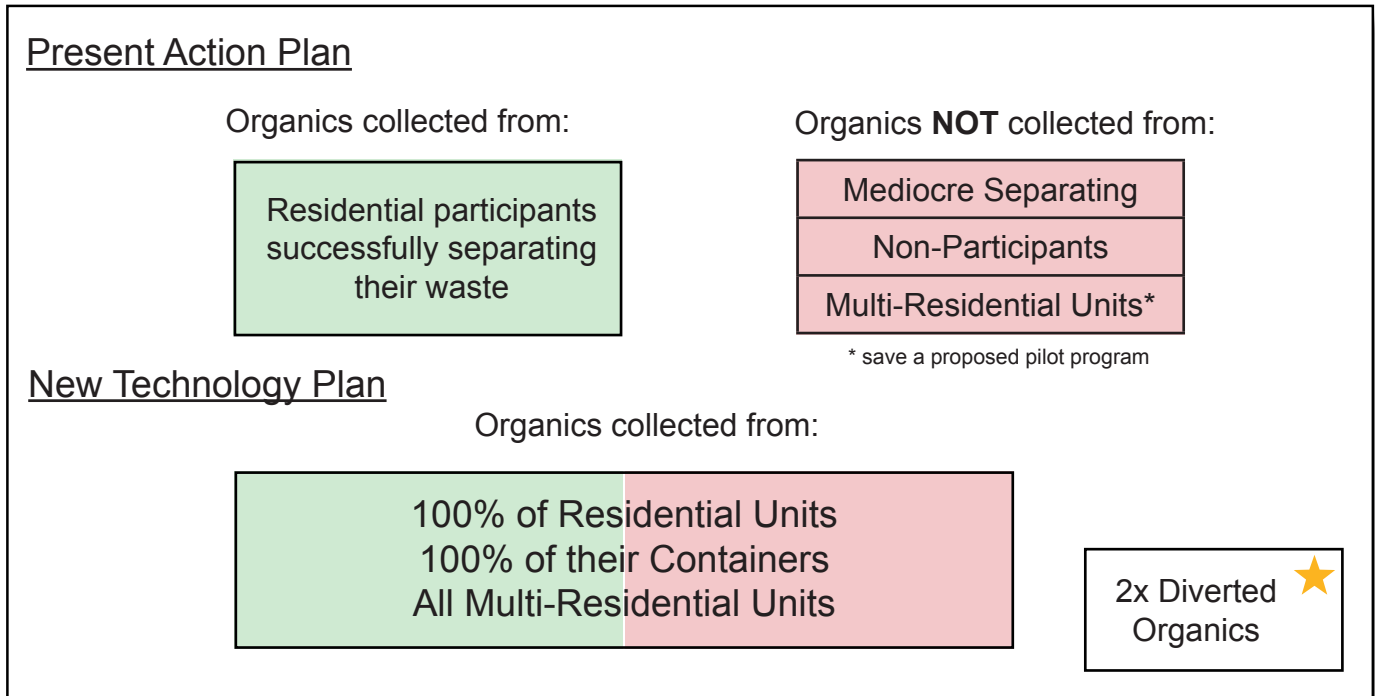


Better Results with New Technology

With mixed waste, residents put all household garbage in one container which is automatically and more efficiently sorted later at the processing plant. This is already the end-game imagined for London, but the gains compared to a green bin program are so significant that it should be pursued immediately.

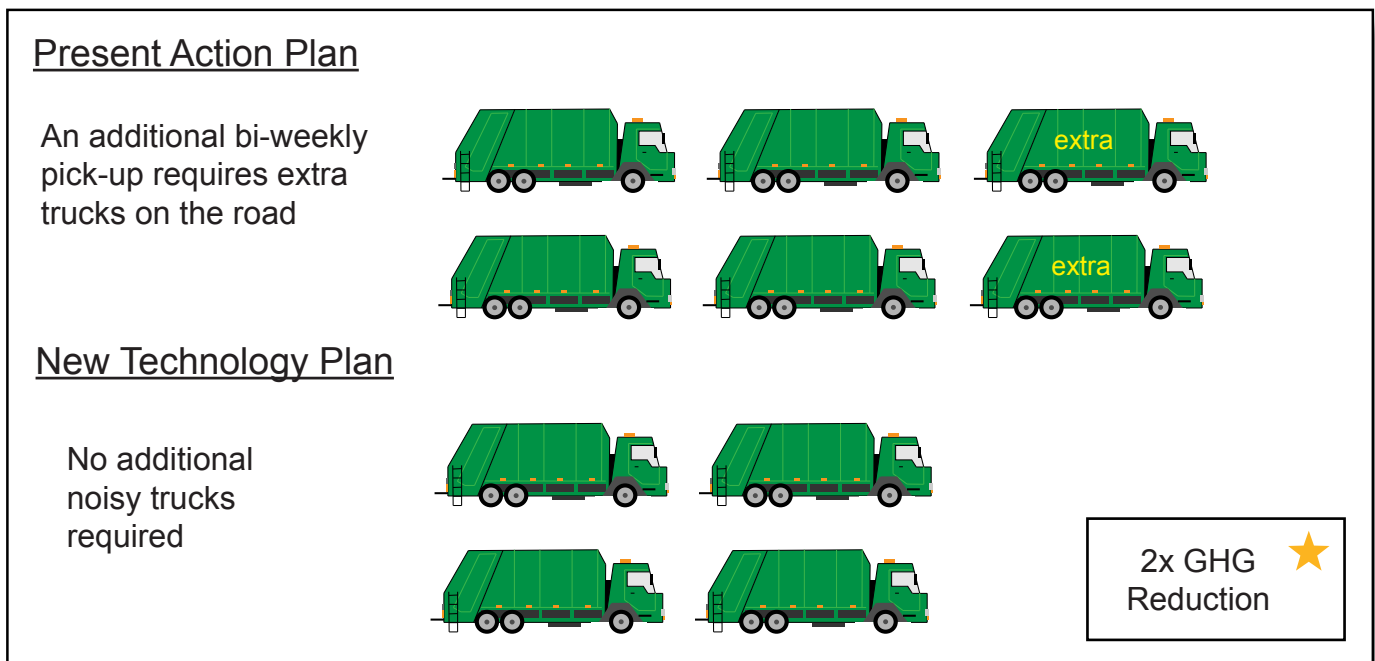
ORGANICS COLLECTION

Figure 3



GHG REDUCTION

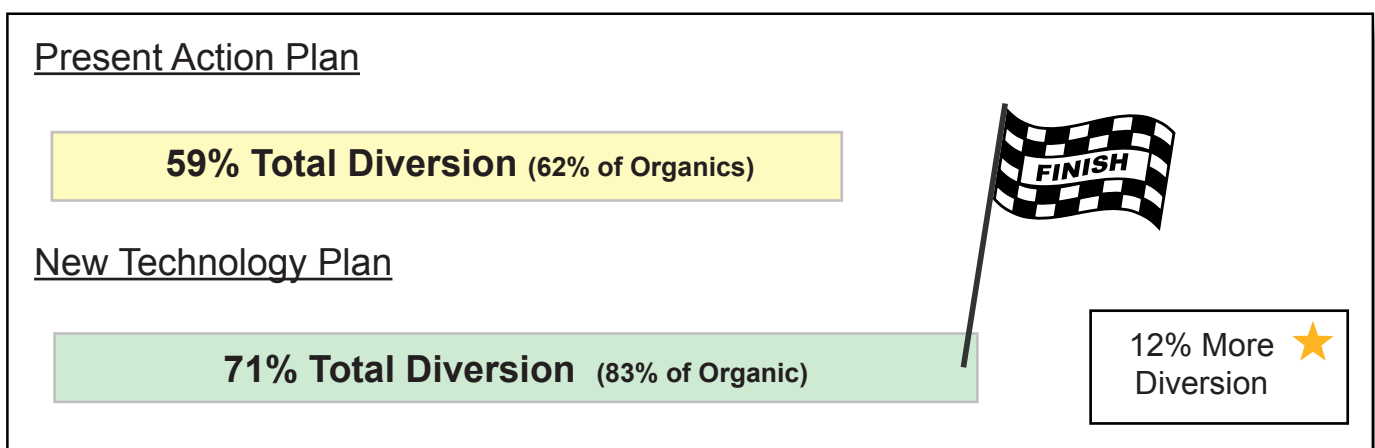
Figure 4



Where the present action plan fails to meet either city or provincial targets, the new technology plan exceeds both. When solid recovered fuel (SRF) is approved in Ontario, extra modules can be added to the plant which will increase total diversion to 90%.

DIVERSION

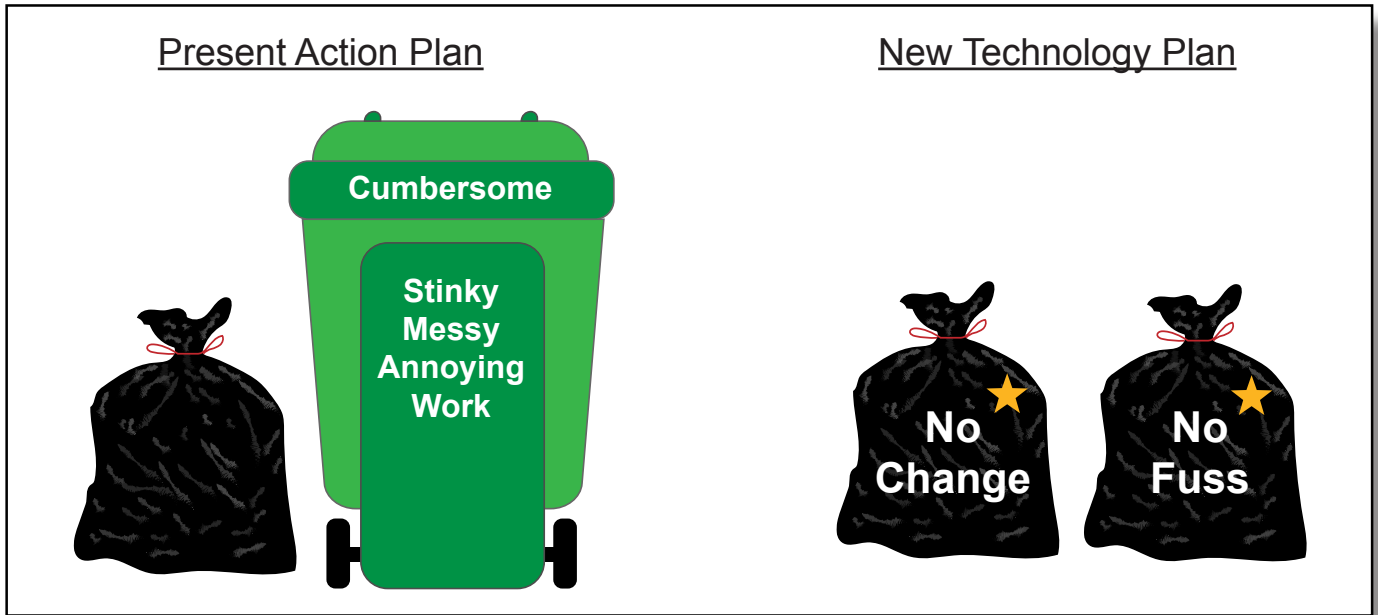
Figure 5



Automating the removal of organics from the waste stream means that 150,000 households are not required to sort garbage for the next decade. At 10 minutes per week per household, the value of labour from our residents would be equivalent to \$18.2M annually which would double the cost of diversion were they to be compensated. In contrast, a mixed waste strategy could reduce the cost of diversion by 30% to 40% and residents will not be demanding enforcement for their non-participating neighbours.

IMPACT ON RESIDENTS

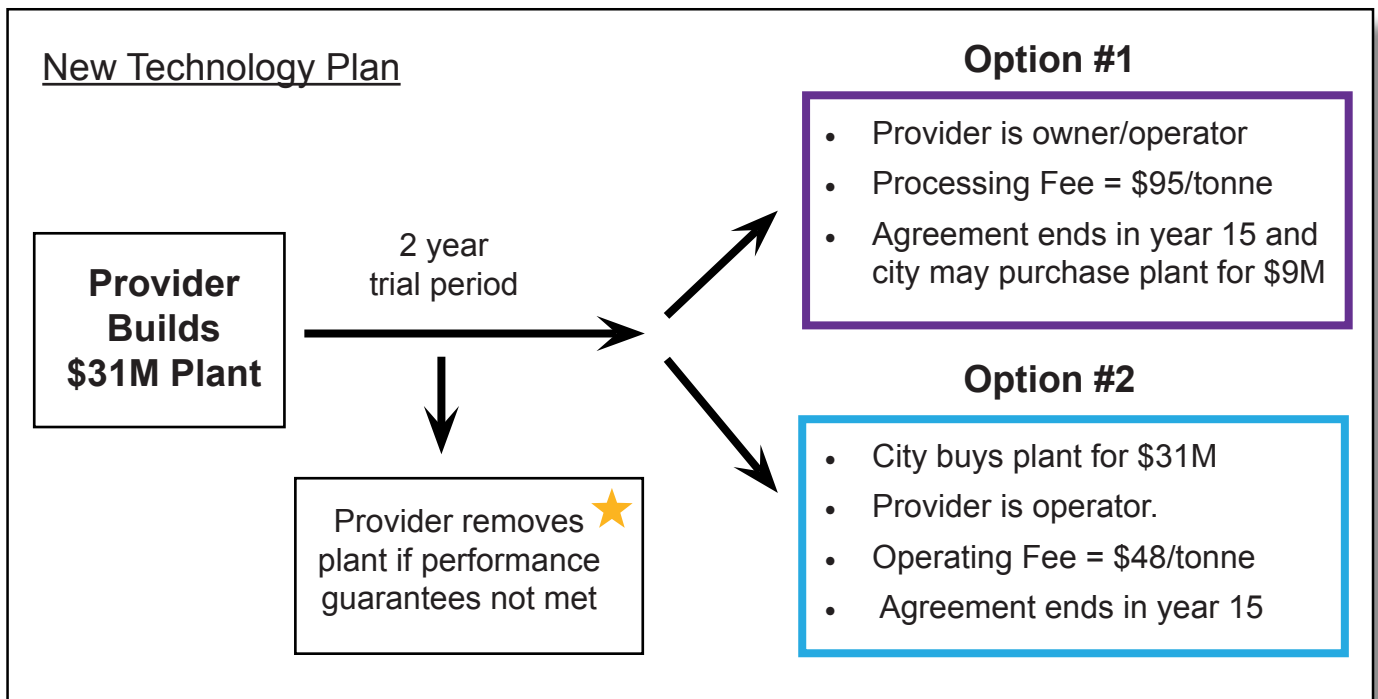
Figure 6



New technology providers will offer many risk mitigations for a partnership to duplicate their European plants at the W12 landfill site. Examples of an escape clause and a no-capital-cost option are described below along with the numbers used for the calculations in figure 2.

TWO OPTIONS

Figure 7



London has suffered great financial losses due to the COVID-19 lock-down. The win-win New Technology Plan helps assure London’s long-term recovery and the jobs created to build the plant will boost our economy in the short term. Minister Yurek’s office is willing to meet and discuss the mitigation of all risks associated with the MOECP and our landfill expansion. Staff say they require direction from council to include mixed waste as an alternative. I therefore move:

The staff BE DIRECTED to include mixed waste technologies in the public engagement and procurement processes for the 60% waste diversion action plan.

Sincerely,

Michael van Holst

APPENDICIES

Appendix A - Resident Externalities

Including the impacts of resident labour in the Present Action Plan business case.

Appendix B - Further Considerations (not included)

The purpose of this report is to establish the viability of mixed waste technologies in general and not to advantage any particular candidates. Although Appendix B deals with potential concerns about the sector as a whole, it was omitted in order to avoid conflict with the procurement policy since some of the items referred to particular technologies.

1. Will London's landfill expansion application be jeopardized?
2. Won't we suffer heavy provincial fines if the technology does not work out?
3. Won't It take too long for the province to approve a new technology?
4. Isn't \$31 Million too low an estimate for building a mixed waste plant?
5. Is the technology sufficiently proven?
6. Can a mixed waste plant handle 100,000MT per year?
7. What if Canada's waste streams are different from Europe's?
8. What if the plant can't be built in 18 months as estimated?
9. What about our plan to use green bins first and then mixed waste?
10. Is there a greater fire hazard with these technologies?
11. Is it better to produce compost, methane or power?
12. Omitted
13. Why should London be the first to take on a new technology?
14. Aren't the graphs more similar if financing is considered?
15. What about the financial assumptions made?
16. Doesn't the Present Action Plan include a mixed waste pilot?

Appendix C - Supporting Documents (not included)

The supporting documents in this section generally make reference to individual technology providers and have been omitted so as not to advantage any particular candidates. In order to avoid conflict with the procurement policy, references to the documents were also omitted.

1. Omitted
2. Omitted
3. Omitted
4. Omitted
5. Omitted
6. Omitted
7. Omitted
8. Omitted
9. Omitted
10. Omitted
 - a. Omitted.
 - b. Omitted
 - c. Omitted
11. Omitted
12. Omitted

Appendix A - Resident Externalities

One non-transparent aspect of the Present Action Plan is that it requires the labour of residents to create the SSO, source separated organics. Unlike most new technologies, green bins require more work from their users instead of less and this is not accounted for anywhere in the business case. However, the math to correct that is not difficult with a few assumptions:

1. 150,000 households (hh) participate
2. They spend 10 minutes per week sorting garbage and moving the bin
3. Their time is worth minimum wage \$14/hr

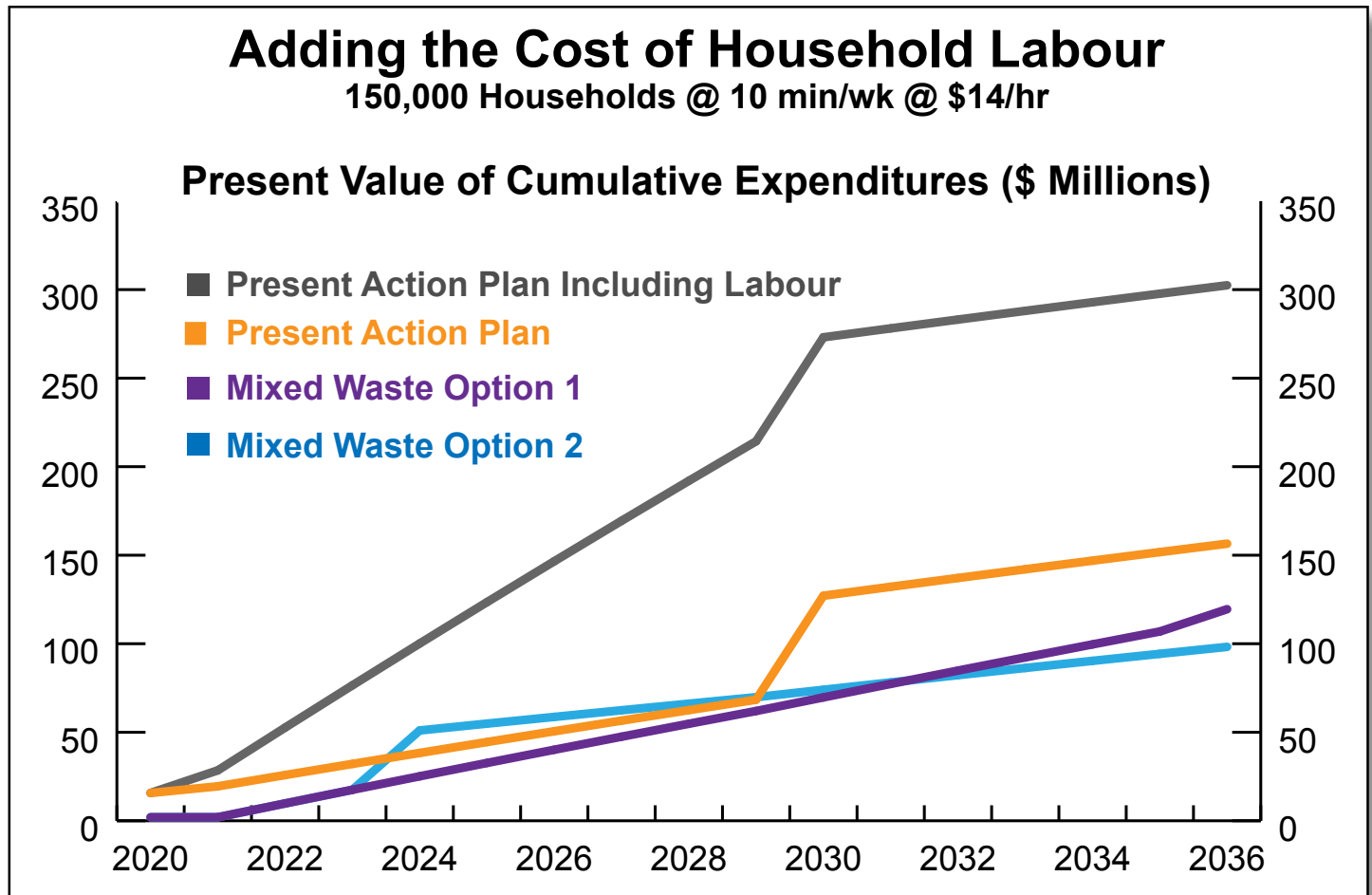
Calculations for one year:

$$52 \text{ wk} \times 10 \text{ min /wk} \times 1 \text{ hr} / 60 \text{ min} = 8.7 \text{ hr}$$

$$8.7 \text{ hr} \times \$14 \text{ /hr} = \$121$$

$$150,000 \text{ hh} \times \$121 \text{ /hh} = \$18,200,000$$

The Present Action Plan includes \$18.2M of hidden labour costs per year, prior to switching over to mixed waste processing in year 10. During that time it captures only half the additional organics of the New Technology Plan. The labour costs are graphed with the previous items below.



Strategy	Total New Diversion	Total Cost	Cost Per MT New Diversion
Present Action Plan with Resident Labour Included	503,289 MT	\$302,456,714	\$601
Present Action Plan	503,289 MT	\$156,506,714	\$311
Mixed Waste Option 1	636,945 MT	\$119,508,203	\$188
Mixed Waste Option 2	636,945 MT	\$98,230,173	\$154

By including the hidden costs of resident labour, as seen in the table above, the cost of diversion is almost doubled for the Present Action Plan. Although the cost is presently hidden, residents who participate could actually be reimbursed \$121. This would be more fair since many will not participate and it would create a paper trail that would show the true cost of the Present Action Plan.