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September 18, 2015

VIA HAND DELIVERY

Ms. Angela Calvillo
Clerk of the Board
Board of Supervisors
City and County of San Francisco
1 Dr. Carlton B. Goodlett Place
City Hall, Room 244
San Francisco, Ca. 94102-4689

Re: Appeal of Adoption of Negative Declaration: Supplemental Submittal
Case No. 2014.0653E
Project Title: Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County

Dear Ms. Calvillo:

This letter is respectfully submitted to the Board of Supervisors (the "Board") on behalf of Solano County Orderly Growth Committee ("SCOGC") pursuant to Administrative Code Section 31.16 to appeal the adoption of a Negative Declaration for the Recology Hay Road Landfill Project (the "Project").

The City and County of San Francisco's Planning Department (the "Planning Department") issued a preliminary negative declaration relating to the Project on March 4, 2015. SCOGC timely filed an appeal on April 2, 2015 and filed a supplemental brief in support of its appeal on May 19, 2015.[1] SCOGC also voiced its objection to the negative declaration at the Planning Commission hearing on May 21, 2015. On that day, the Planning Commission issued a Final Negative Declaration for the Project. On June 1, 2015, the San Francisco Department of the Environment ("DOE") issued a recommendation ("the DOE Recommendation") that the San Francisco Board of Supervisors adopt the Final Negative Declaration. The DOE Recommendation stated that the recommendation should be considered the first "approval action" of the FND, thus triggering the 30 day period for appealing the FND.

[1] To the extent not otherwise set forth in this letter, all arguments and supporting materials contained or referenced in those previously filed briefs regarding the deficiencies of the underlying negative declaration are incorporated herein by reference.

Subsequently, the DOE substituted a different proposed landfill disposal agreement with Recology, structured to avoid public and Board of Supervisors review, comment and approval. On July 20, 2015, the Planning Department revised the Final Negative declaration to reflect the new landfill disposal agreement. (The Final Negative Declaration, as revised, is hereinafter referred to as the "FND".)

On July 22, 2015, an informational hearing was held before the Board's Budget and Finance Sub-Committee regarding the new proposed agreement. At that time neither the proposed new Agreement nor the FND had been made available to the public. (In fact, no notice was provided that the Planning Department had revised the Final Negative Declaration.) DOE approved the new disposal agreement with Recology on July 22, 2015 (the "Disposal Agreement"), in reliance upon the FND.

The Disposal Agreement provides for disposal of 3.4 million tons of municipal solid waste ("MSW") over a period of 9 years, whichever occurs first, at Recology's own Hay Road landfill, in Solano County. The Disposal Agreement gives the Board of Supervisors the option to extend the Disposal Agreement until the earlier of 6 additional years (15 years total) or up to 1.4 million additional tons, provided that in no event would the total solid waste disposal exceed 5 million tons.

At the July 22 Budget and Finance Subcommittee hearing, DOE Director, Debbie Raphael, mischaracterized the new Disposal Agreement in an effort to explain that the proposed Disposal Agreement's conformed with the CEQA analysis in the FND. She stated that the contract "capped" the number of truck [trips] that Recology could send to the landfill at 50 per day. (She explained that the reason DOE did this was because a 50 truck daily trip assumption was made in the CEQA analysis, but had not been "set in stone" [under the prior proposed Hay Road Agreement.]).

Actually, the Disposal Agreement does not limit the number of daily round trips by Recology's trucks. Rather, the number of round trips is subject only to an annual average of 50 round trips per day, based on a 6-day work week, or 15,600 round trips per year. This gives Recology substantial flexibility to manage the flow of MSW, and would allow an undefined number of additional trips on any given day, including weekends. Those additional trips have not even been acknowledged, much less analyzed in the FND.

SCOGC appealed the adoption of the FND (as revised) for the Disposal Agreement approved by DOE on July 22. This appeal, filed by letter dated and filed on August 19, 2015, is brought because the existing record establishes that a negative declaration cannot properly be employed to support the Disposal Agreement.

The faulty determination that the Project could not have a significant impact on the environment is predicated upon bald denials and demonstrably false assumptions. Only by ignoring or simply denying, without substantial evidence in the record, the expert reports, including scientific analyses on air quality and the greenhouse gas impacts, and basic errors in the project description and project baseline assumptions, can the City conclude that there is not a fair argument that hauling between 3.4 to 5 million tons of trash more than nine million miles over fifteen years, "could not have a significant effect on the environment."

The Board should reverse the decision of the Planning Commission because the record before the Board contains substantial evidence to support a fair argument that the Disposal Agreement may have a significant effect on the environment. The Board should remand the FND to the Planning Department with directions to prepare an Environmental Impact Report ("EIR") for the Project.

Summary:

The FND is flawed for the reasons outlined below, and which are more fully addressed in the following Sections 1-7 and in the attached environmental consultant report prepared by SWAPE, dated September 18, 2015 (the "SWAPE Report").[2]

- Common Sense Requires an EIR. Contending that 624,000 additional large MSW disposal truck miles per year for 15 years through Bay Area traffic could not, even arguably, have a significant effect on the environment defies logic and lacks credulity. Moreover, it ignores the evidence submitted by SWAPE, environmental consultants, in the report submitted to the Planning Commission, dated May 19, 2015, and the attached updated SWAPE Report. Courts have required CEQA review of projects that had considerably less impact than the massive transportation project under consideration.

- Failure to Review Full Length of Trips. The scope of the environmental analysis was improperly constrained. The environmental review must consider the entirety of the proposed action, and not just the net additional miles travelled (which the FND measured from the east end of the Bay Bridge). This is required because (i) this is a new Disposal Agreement and not an amendment to an existing project or agreement, (ii) it requires transportation of the City's MSW to a

[2] SWAPE submitted a report to the Planning Commission dated May 19, 2015, on behalf of appellants. The September technical report supplements the previously submitted report. Both of which are part of the record on this appeal.

different landfill, under different ownership, subject to different permits, and located in a different County in a different part of the Bay Area, and (iii) because there was no prior environmental review of the transport of MSW from San Francisco to the Altamont Landfill. The reliance on this FND to provide the environmental clearance for the entirety of the City's MSW transportation disposal program for up to 5 million tons of MSW, over 15 years, to Solano County – a total distance of approximately 155 miles per day for at least 50 trucks per day, cannot be justified.

- Erroneous Baseline Description of Existing Truck Routes. The project baseline also erroneously assumes all trucks currently take the same routes to Altamont and therefore that the only change under the Disposal Agreement is with respect to the routes taken from the east end of the Bay Bridge, i.e., to the Hay Road, Solano County landfill rather than to the Altamont landfill. In fact, a number of Recology trucks currently routinely take an alternative route to the Altamont landfill from Tunnel Avenue - going south from Tunnel Avenue on US 101 to the San Mateo Bridge - and avoiding the Bay Bridge entirely, depending on traffic and the time of day. The FND analysis is therefore based on an erroneous description of baseline conditions, and fails to properly analyze the effects of the Disposal Agreement, which will be to increase traffic on routes that the FND erroneously assumed will not change (at least to the east end of the Bay Bridge). To go to Hay Road, under the Disposal Agreement, unlike existing conditions where trucks go to Altamont landfill, there would be no incentive for trucks to travel south to the San Mateo bridge, and therefore it is more likely that all trucks will instead take the Bay Bridge. The erroneous baseline description and the change in routes is another indicator of the failure of the FND to analyze the Project's impacts.

- False Assumptions. The FND analysis is flawed because it is predicated upon several false fundamental assumptions, including that: (i) there will be no increase in truck trips over the life of the Agreement; (ii) there will be no increase in the volume of MSW during the life of the Agreement; and (iii) there will be no change in existing truck routes (at least from Tunnel Avenue transfer station to the east end of the Bay Bridge), over existing conditions. Each of these assumptions is incorrect and not supported by substantial evidence.

- Additional Trips Over 50/day Not Analyzed. The FND falsely assumes that San Francisco's population and trash generation will not change during the expected 15 year life of the proposed Project. The FND project description artificially

constrains and manipulates the analysis by assuming that there will be no increase in the existing pattern of 50 large truck round-trips per day over the initial 9 year, and, with the anticipated exercise of the option, 15 year life of the Project. In fact, the Disposal Agreement allows round trip truck trips to exceed 50 per day, subject only to an annual average of 50 per day. The FND, however, does not even consider much less analyze the transportation, noise, air quality and greenhouse gas effects of additional truck trips per day on local streets, freeways and on the surrounding communities.

- Effects of Population Growth Not Addressed. The FND ignores evidence of substantial growth and development in San Francisco which invariably will increase the amount of trash and the number of trips. Substantial evidence has been presented that in fact the volume and per capita rate of San Francisco's MSW currently being disposed of at the Altamont Landfill is actually increasing. There is no evidence in the record that would allow the City to assume the effect of such additional growth-produced MSW will be mitigated by future recycling and diversion programs. DOE and Recology may proclaim that they are committed to staying within the trip limits of the Disposal Agreement, but CEQA requires them to explain how. Moreover, the public needs an analysis of what happens to the City's MSW if Recology cannot dispose of all of the City's MSW under the Disposal Agreement's total vehicle trip limitations.

- Transfer Station Plans Should Be Considered. The FND improperly piece-meals the environmental analysis by barely describing and then not including in the analysis the effects of proposed changes to Recology's transfer and recovery facilities, including, in particular, the very large two phased modernization and expansion project at Tunnel Avenue (for which the City of Brisbane is in the process of preparing a separate EIR).

- Organic Waste Trips Not Considered. The Project description and cumulative analysis fail to take into consideration the additional vehicle trips and the cumulative impacts associated with doubling the organics disposal and treatment program at the Hay Road landfill, and the substantial increased export of compost material from Hay Road to other locations, including San Francisco.

- Inconsistent with Greenhouse Gas Reduction Policies. The FND fails to demonstrate consistency with Green House Gas ("GHG") reduction targets under Assembly Bill 32 ("AB-32"). The FND also ignores the policy guidance of SB 375, the draft CEQA Guidelines, and the Governor's recent Executive Order, all

requiring the Project's compliance with climate action and GHG reduction policies. In fact, the Disposal Agreement puts the City squarely at odds with the State's GHG reduction policies because, despite the ready availability of alternatives (conveniently not required to be addressed in a negative declaration, but which would be apparent in an EIR), the City is choosing to truck its MSW to a more distant landfill owned by Recology. The Project should be considered to have potentially significant environmental impacts because the vehicle miles to be travelled to the Hay Road Landfill will greatly exceed regional norms for transport of MSW, thereby exceeding a suggested significance threshold under the draft CEQA Guidelines update.

- Errors in Air Quality and Greenhouse Gas Emissions Calculation. Errors in assumed emission factors state the truck emissions (including emissions for CNG/LNG trucks), and the attached SWAPE Report provides substantial evidence that there is a fair argument that these errors, when corrected, indicate the potential for significant air quality and greenhouse gas effects of the New Disposal Agreement.

1. Common Sense And Substantial Evidence Indicate That There Is A Fair Argument That the Project Will Have A Significant Environmental Impact.

The recent decision in *Keep Our Mountains Quiet v. County of Santa Clara*, 236 Cal. App. 4th 714, 187 Cal. Rptr. 3d 96 (2015) is instructive. In that case, the plaintiff successfully petitioned for a writ of mandate on the ground that the Santa Clara County Board of Supervisors violated CEQA by adopting a mitigated negative declaration instead of requiring an Environmental Impact Report ("EIR"). The defendants appealed, and the Court of Appeal affirmed. The Court held that substantial evidence supported fair arguments that the project could have significant unmitigated noise and traffic impacts.

The project at issue in that case was the use of a rural property in the Santa Cruz mountains to host wedding receptions and other similar special events. Notably, the scope of that project pales in comparison to the magnitude of this Project with its massive trash truck hauling convoys about to be unleashed on the already congested Bay Area freeways, with its resultant significant cumulative air quality and greenhouse gas effects.

In *Keep Our Mountains Quiet*, the Court reconfirmed that under the CEQA guidelines, particularly 14 Cal. Code Regs. § 15384, "***substantial evidence***" includes "***reasonable assumptions predicated upon facts***, . . . and reasonable inferences from the facts." In that case, the testimony of the neighbors and traffic and noise studies, although contradictory and disputed,

were determined to provide the required substantial evidence that the project could have significant impacts on traffic and noise. In contrast, with this Project, despite the undeniable fact that up to five million tons of trash will be hauled millions of miles over an estimated fifteen years, the Planning Commission adopted the Final Negative Declaration. The scale of this project is exponentially greater than the projects for which courts and the City have routinely required preparation of an EIR, and on a much smaller showing than provided on this record. An EIR must be prepared, and alternatives analyzed before this significant and extraordinary multi-year project reflecting the disposition of the City's MSW for what may be the next 15 years is commenced. [3]

2. Baseline Improperly Limits Analysis.

The Project baseline and description are flawed in several respects. First, the FND improperly splits the Project into two component parts, i.e., between the San Francisco transfer station and the east end of the Bay Bridge and from there to the landfill in Solano County, and only analyzes the approximately 2,000 net additional vehicle miles per week required to transport MSW to the more remote Hay Road Landfill from the east end of the Bay Bridge.

There are four fundamental reasons why this approach is improper. First, as described above, currently all of Recology's trucks do not, as assumed in the FND, travel the same route over the Bay Bridge. The FND failed to reflect current operations which include the fact that many trucks take a southerly route to Altamont and avoid the Bay Bridge altogether. At a minimum the full length of these re-routed trips should be included in the project's air quality, greenhouse gas and transportation analyses.

Second, the transport and disposal of MSW to Hay Road clearly is not the same project as the existing Altamont transportation and disposal program. This new Project is for disposal to a different landfill, located in a different County in an entirely different part of the Bay Area, under different ownership, on different terms and under different circumstances, and requires MSW disposal trucks to travel a different and much lengthier route over two bridges (instead of one) and through already heavily impacted areas. In short, on its face, the new agreement and new landfill confirm that this is far more than a simple modification to an existing project. New

[3] *Keep Our Mountains Quiet,* 236 Cal. App. 4th 714, 729 ("the overriding purpose of CEQA is to ensure that the agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage.")

agreements, different permits, and alternate transportation plans and routes all are required. Accordingly, this is a new project altogether.[4]

Third, the Disposal Agreement's relationship to the extensive expansion and modernization plans at Recology's San Francisco facilities, as described in Section 4 below, is further evidence that this is a new Project, not a modification to an existing project, that must be analyzed in its entirety.

In addition, and perhaps most importantly, the changing environmental context for evaluating a project's impact with respect to greenhouse gas emissions and consistency with climate action policies present a critical and unprecedented imperative to review the entirety of the proposed action. The FND analysis conveniently ignores half of the vehicle miles travelled ("VMT") without any environmental record for doing so, i.e., there was no prior environmental analysis of the transportation and disposal of MSW to Altamont.

CEQA requires an analysis of the entirety of the action to transport and dispose of all of San Francisco's MSW at the Hay Road Landfill in Solano County, and does not, under the current circumstances, allow the analysis to be artificially limited to the net additional distances/trips. As noted in the SWAPE Report, and as also noted in the FND, if the entire distance of the proposed truck trips is considered, it cannot reasonably be disputed that the Project will certainly have significant environmental impacts and requires an EIR.

As noted, even if it were appropriate to limit the analysis to the net change in miles travelled from an existing baseline route, because the evidence shows that some trucks do not currently take the Bay Bridge to Altamont, the analysis would have to take into account the full length of the trip for those vehicles travelling the Bay Bridge for the first time. Because the vehicle emissions for GHG are already so close to the significance threshold, there is a fair argument, that including these additional trips will likely result in emissions exceeding significance thresholds.

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[4] *See, e.g., Save Our Neighborhood v. Lishman,* 140 Cal.App.4th 1288 (2006) (application for a 102 room hotel (with convention facilities, gas station and convenience store) could not rely on an addendum to an initial study and mitigated negative declaration previously prepared for a prior project, a 106 room motel (with restaurant, lounge, gas station, convenience store and car wash) that was never constructed, because it was a new project and not a modification to a prior project, with different plans and proponents).

3. The Negative Declaration Ignores Growth and Improperly Assumes No Changes in Trips and Associated Impacts.

Another fundamental flaw with the Project description is that it assumes that the truck trips will remain consistent with past practices and be limited to only 50 round trips per day. This assumption is inconsistent with the Disposal Agreement. As noted, the only limitation in the Disposal Agreement is that truck trips not exceed an annual average of 50 round trips/day. Subject to this annual average the Disposal Agreement does not impose any limit whatsoever on the number of daily trips. Accordingly, Recology could at any time increase the number of trips per day, and, in fact, there are significant reasons to expect that this will occur. More people, more trash, more truck trips. None of this is analyzed in the FND.

The FND entirely and improperly ignores the effects of population growth over the life of the Disposal Agreement. San Francisco is one of the five fastest growing counties in the State, including both substantial commercial and residential growth. Current estimates by the State Department of Finance, ABAG and in the City's General Plan consistently indicate an approximately ten percent (10%) growth in San Francisco population from 2010 to 2020, and another ten percent (10%) from 2020 to 2030. (See analysis in SWAPE Report at pages 14-17.)

Noteworthy also is evidence that San Francisco disposal rates have levelled-off in recent years, and that the amount of waste disposed by San Francisco has steadily increased. (See SWAPE Report at pages 17-20.) The San Francisco DOE Zero Waste Manager, Robert Haley, stated in a 2014 interview that "last year the city sent more tons of trash to landfills than it did in 2012: 456,764 tons, or about three pounds per day per resident." ("San Francisco Stalls in Its Attempt to Go Trash-Free," by Carl Bialik, www.fivethirtyeight.com, dated September 14, 2014).

Combine the increased waste generation with the evidence that waste reduction and diversion programs have flattened-out in recent years, and therefore cannot be relied upon (absent substantial evidence in the record to the contrary), to counter growth-induced increases in waste streams, with the population growth and the estimated number of truck trips is easily understated. This specific problem of increasing per capita waste and increasing population, despite existing active waste reduction programs, is wholly unaddressed, and is substantial evidence of a fair argument of a significant environmental impact. The FND provides no evidence in the record regarding how MSW from this growth will be handled, or to justify the assumption that it will not generate additional large semi-truck MSW disposal trips, and more adverse air quality and greenhouse gas effects. The City needs to know how its MSW will be handled if, as the evidence indicates, the MSW disposal demand exceeds the Disposal Agreement limits.

At the May 21 hearing, SCOGC pointed out that the only projections in the record that considered the waste that would be generated by the anticipated increased population were the consultant projections in the May 19 SWAPE report, which concluded that thresholds would be exceeded if growth was taken into account. In response, the Planning Department merely offered a verbal representation that it expected that future waste would be limited as it hoped that waste would be reduced in the future. However, the percentage increase in MSW disposal to the Atlamont Landfill from 2013 to 2014 was 2.23%, and the increase from 2014 to 2015 was even higher at 3.5%, resulting in a 5.8% increase in MSW disposal over the last two years. As such, the Planning Department's verbal representations regarding waste reduction are without merit or support. In actuality, absent significant investment in Mixed Waste processing and/or further backend solutions around organics processing, San Francisco will continue to see an increase in MSW disposal.

Similarly, at the July 22 Budget and Finance Sub-Committee hearing, the DOE representative, stated that "we are making a statement [by this Disposal Agreement] about our commitment to zero waste that no matter what, we are not going to send more trucks on the road than that [50] number." Neither feel good statement, however, is supported by any evidence in the record of any existing, reliable and quantifiable program, or any other evidence whatsoever, of how Recology and DOE intend to achieve such reductions in MSW. Rather, the actual evidence on the record, based on recent MSW delivery rates to Altamont by Recology from San Francisco, contradicts these feel-good/trust us pronouncements.

In effect, in response to a consultant report detailing a problem, the DOE and Recology offered nothing but an unsupported verbal assertion denying that the problem exists. CEQA review is required if a fair argument exists that shows that there may be an environmental impact if the project goes forward. The City cannot deny that such a fair argument exists merely by making unsupported statements that it disagrees with expert evidence showing significant impacts.

The SWAPE Report provides substantial evidence that, contrary to the erroneous and unsubstantiated assumptions in the FND, and the stated limitations on the average annual number of truck trips in the Disposal Agreement, there will be significant pressure for the number of large semi-truck trips to increase during the up to 15 year term of the Project due to population growth and corresponding increases in MSW volume in San Francisco. The SWAPE Report confirms that those anticipated additional trips will result in significant carbon emission impacts that exceed the BAAQMD's significance thresholds starting by about year 2020 (SWAPE Report at page 22), and will pose significant health risks to sensitive receptors located near the proposed

truck route due to increased diesel particulates (DPM).[5] As such, a proper CEQA evaluation should be required and adequate mitigation measures and alternatives evaluated for the Project. These findings alone support fair arguments that the Project could have significant impacts on the environment.

The Negative Declaration's erroneous assumption that the number of round trips per day will not exceed 50 is of particular concern because as discussed in the SWAPE Report, even a minor increase in truck trips would result in CO_2 emissions well beyond the significance threshold. Additional truck trips would also cause the Project to exceed the existing baseline of trips (even assuming this is an appropriate measure, as discussed above), and therefore should be analyzed over the full length of those trips from San Francisco to Hay Road. The Disposal Agreement's proposed annual average daily trip limitation should also be of concern to the City because there is no evidence in the record on how projected growth will be addressed and therefore that these contractual limitations can be achieved. The environmental analysis must therefore address how MSW projected volumes that exceed the contractual limits will be handled.

4. Extraordinary Piece-mealing of CEQA Review.

In addition to erroneously assuming, without any supporting evidence in the record, that there will be no increase in the volume or rate of MSW during the life of the Disposal Agreement. The FND also erroneously states in several places that "[n]o new construction or changes in current Recology operations within San Francisco are proposed." (FND cover page) and that "no changes would be made to physical structures or operations at the two points of Origin for the waste hauling operations. Those Points of Origin are the Recology San Francisco transfer station [at Tunnel Avenue] and Recology's central facility [at Pier 96]. (Id. at page 4; see also similar statements at pages 9, 10, 11 and 17). These statements are incorrect and contrary to the public record.

In fact, Recology has two pending projects (briefly acknowledged at page 23 of the FND), to modify its transfer, recovery and associated operations. First, the City published a Mitigated Negative Declaration for the so-called "West Wing." expansion of Recology's solid-waste transfer and Recycling Center Facility (a resource recovery, solid-waste transfer, and a construction and demolition debris recycling facility), to accommodate additional waste processing activities, and equipment to support enhanced recovery of recyclable and compostable materials.

[5] The inadequacies of the health risk assessment are described in the May 19 SWAPE Report at pages 15-18.

Second, the City of Brisbane issued a Notice of Preparation on April 14, 2015, for Recology's extensive two phased Modernization and Expansion Project, a substantial modification to Recology's existing Tunnel Avenue Facility. (The Tunnel Avenue facility is partially located in both Brisbane and San Francisco.) The NOP describes the Modernization and Expansion Project as including, among many other things, the construction and operation of new, modern resource recovery facilities within an expanded facility footprint, and the consolidation of all of Recology's Recycle central facility operations at Pier 96 and its 7th Street facility operations to the Tunnel Avenue facility. The Tunnel Avenue building area would expand from approximately 260,000 square feet to approximately 675,000 square feet.

The Disposal Agreement (Section 4.1) requires that Recology operate the waste processing transfer facility in San Francisco. These transfer station changes therefore are not independent or unrelated to the Disposal Agreement. They are part of the pipeline for delivery of MSW for disposal and therefore part of the whole of Recology and the City's inter-related and cross-obligated agreements to collect, process and dispose of MSW. These plans therefore should be considered, as part of the whole of the proposed actions, in the CEQA analysis for the Disposal Agreement. To the extent that the proposed expansions-modernizations or other modifications to Recology's facilities or operations would contribute to Recology's ability to manage additional MSW under the Disposal Agreement, they should be included in the CEQA analysis for this Project and not piece-mealed to avoid consideration of the environmental effects of the entirety of Recology's actions.

Further, if and to the extent Recology and the City might claim as suggested at the Sub-Committee hearing and at the Planning Commission, but without providing any supporting evidence whatsoever, that Recology's programs and "plans" in pursuant of the City's zero-waste management goals, will allow it to comply with the overall limitations under the Disposal Agreement (and without which the record demonstrates that such compliance would appear to be infeasible) in light of otherwise substantial population and MSW rate and volume pressures to the contrary, those activities would (i) need to be properly described and quantified, to determine whether they can be predictably relied upon to off-set the undisputed effects of population growth, and (ii) the environmental effects of those changes in facilities and operations, including the cumulative environmental effects of the massive expansion and modernization plans, (including, without limitation, changes in vehicle operations), when combined with the effects of the Disposal Agreement Project (e.g., local transportation, air quality, noise and other effects) analyzed. Notwithstanding the foregoing, the FND for the Disposal Agreement blindly either erroneously states that there are no such changes or entirely fails to consider those changes as part of the CEQA analysis for the Disposal Agreement.

The FND too narrowly (and erroneously) described this Project for purposes of this CEQA analysis. The failure to include the two pending modernization and expansion programs artificially narrows and minimizes the Project's potential impact. The expansion and modernization of the transfer station facilities, and the proposed changes in operations are an integral, necessary and contractually recognized component of the Project enterprise for CEQA purposes, and should not be considered as separate unrelated projects.

The imperative to consider these component projects together is necessitated by the assumptions in the FND's CEQA analysis, and DOE's statements at the Board's Budget and Finance Sub-Committee hearing and at the Planning Commission, that there will be no more truck trips (at least on the basis of an annual average if not a daily basis); and no increase in volume by MSW (at least on an annual average), and the contractual limitations in the Disposal Agreement on the average annual number of trips. Further, because applications for these two transfer facility expansion and modernization projects have been filed, their location, scope and characteristics are certain, the information is current and available to allow a comprehensive review of Recology's collection, recovery, sorting, recycling and disposal programs. Such review would therefore not require speculation with regard to an unspecified or uncertain future location, size or nature of development actions, and their environmental consequences, which, under other circumstances, might make such consideration infeasible.

Here, it appears, at least based on DOE's statements, that the success of the Disposal Agreement may depend upon Recology's commitment to the transfer facilities expansion and modernization plans. In other words the collection, processing and materials recovery program appear to be an integral part of the structure of the Disposal Agreement. Thus, to evaluate the Disposal Agreement, the public should have the opportunity to comment on the expansion and modernization plans, and their associated environmental effects, not as separate actions, but rather in order to be able to assess the Disposal Agreement and its environmental effects, which relies thereon. They are, in this case, crucial elements without which the Disposal Agreement cannot successfully go forward.

Even if (which we do not think is correct), considered as severable projects, the FND's should have considered the cumulative effects of the Disposal Agreement with the expansion and modernization projects, particularly with respect to community noise, dust, odor, air quality, greenhouse gas, transportation and other impacts.

In short, the DOE and Recology cannot have it both ways. They must either recognize the significant population and MSW volume pressures, which the evidence indicates will result in significant air quality and greenhouse gas effects requiring an EIR; or if they are relying on enhanced waste sorting and recovery programs to reduce MSW volumes, and to make the

Disposal Agreement work, then those development and recovery programs need to be described and analyzed so that it can be determined whether they can be relied upon to off-set contrary MSW volume and population pressures, and the environmental effects of those pending expansion and modernization facility plans assessed as part of this Project's analysis.

For all the reasons described above, City should have looked at the whole of the proposed action, and the environmental effects of the total length of the disposal and return trips.[6]

5. Sources of Additional Vehicle Trips Ignored.

There are other significant sources of vehicle emission ignored by the FND. For example, the Project description and cumulative impacts analysis ignore the fact that in addition to the identified 2,000 miles of additional large "possum belly" tip-truck vehicle trips required for disposal of MSW, Recology reportedly also intends to double the capacity of the Hay Road facility to handle compostable materials. This will result in additional truck trips importing green waste to Hay Road, as well as additional trucks exporting compost material to end-users, including to San Francisco. The cumulative impact of the additional vehicle trips associated with this green waste-hauling, which would be separate from and in addition to the MSW truck trips, has not been addressed, and the entire round-trip length of these trips also should be assessed. See, Negative Declaration, pp. 8-9. This sort of "green washing" of the environmental impact of this project represents a potential conflict between short- and long-term environmental degradation, which is addressed in CEQA Guidelines § 15065 subd. (a)(2).6[7] It also implicates the "future projects" analysis found in Guidelines § 15065 subd. (a)(3).

Finally, the consideration given to the proposed anaerobic digestion ("AD") facility in the cumulative impacts analysis is inadequate. The cumulative impact analysis generally relies on the 2012 initial study/mitigated negative declaration for the Hay Road Landfill expansion, but that analysis did not discuss the AD project (and there is no evidence that the 2012 Hay Road environmental document relied on the State's 2012 Program EIR). The cumulative air quality

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[6] As noted above, the FND also improperly piece-meals the environmental analysis, to try to justify the use of a negative declaration for the Disposal Agreement, by limiting its analysis, erroneously, for the reasons described above, to the so-called net new trips from the east end of the Bay Bridge.

[7] "A lead agency *shall find* that a project may have a significant effect on the environment and thereby requires an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that....[t]he project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals." (emphasis added).

analysis did not consider the impacts associated with the AD facility, except with respect to odor, and the State's program EIR did not address any site specific impacts associated with a new AD facility at Hay Road, including associated additional vehicle trips. See, FND at pp. 21-22.

6. The Negative Declaration fails to address the Projects' inconsistency with Climate Action Policies.

The Disposal Agreement and FND are contrary to the State's and San Francisco's commitment to the reduction of greenhouse gases and to policies that advance local, regional and state-wide climate action goals. Through this Agreement and white-washed environmental review, the City is taking a firm position in opposition to climate action goals which, noted now, it has embraced. This action sets a dangerous precedent and has potentially far-reaching negative impacts for the entire Bay Area.

For the reasons stated in the SWAPE Report at pages 6-9, the Disposal Agreement cannot be determined to be in compliance with AB-32 GHG reduction targets. Further, the CEQA analysis, particularly for a transportation based Project like this, should focus on how the project responds to local, regional, and statewide climate action goals consistent with SB 375. Instead, because clearly it does not, the FND entirely ignores this threshold question.

The preliminary draft of changes to the CEQA Guidelines designed to implement SB 375,[8] reflect the state's intention and goal to evaluate projects to determine if they advance climate action goals. For land use development projects, for example, VMT is viewed as the best measure to evaluate the transportation impacts of projects, and regional average VMT is identified as a potential threshold of significance. Thus, to the extent a project would cause or induce vehicle miles travelled to exceed "regional averages" for that type of use, the project would be considered to have a significant impact.[9]

[8] The comment period of the initial discussion draft was closed on November 21, 2014, and OPR is currently in the process of developing revised draft Guidelines. In the meantime, while other measures of transportation impacts such as intersection and freeway levels of service should not be ignored, there is no basis for ignoring the guidance provided in the draft and considering VMT in evaluating the impacts of this Project.

[9] The draft guidelines focus on land use projects that would increase VMT over regional standards, and transportation projects, such as infrastructure improvements, that could induce increases in VMT. While the proposed project does not fall neatly into either of these categories, the purpose and intent to further climate action goals by considering VMT based significance thresholds in relation to the proposed use should continue to apply.

The Disposal Agreement will substantially increase VMT at a time when the state-wide goal is to reduce VMT, and will cause San Francisco's trash disposal scheme to exceed regional averages for disposal of MSW even more significantly than it currently does. Public records show that the overwhelming majority of cities and counties in the Bay Area dispose of their MSW at significantly more geographically close-in landfills, typically in the same county. San Francisco's proposed long-haul plan very substantially departs from and exceeds these typical practices, and is thereby, by itself, evidence of significant carbon emissions and transportation impact.

The Department's narrow approach avoids discussion of the full impact of the VMT associated with the Disposal Agreement, avoids discussion of consistency with and furtherance of state, regional, and local climate action and greenhouse gas goals and policies, including, for example, failure to implement applicable AB-32 GHG reduction targets[10], and erroneously suggests that the Disposal Agreement is consistent with the AB-32 Scoping Plan,[11] and avoids any discussion of applicable mitigation measures and feasible and plainly available alternatives that would, at a minimum, maintain the status quo and avoid worsening the regional climate change conditions.

Governor Brown's recent Executive Order, No. 03-30-15 (the "Order") establishes an aggressive state-wide GHG reduction target of 40% below 1990 levels by 2030. The Order underscores the need for focused action to reduce carbon emissions over the next decade and a half, i.e., precisely during the anticipated term of the proposed Disposal Agreement, with extension option exercised, and the need for climate change and emissions reductions to guide regulatory decisions during this critical period. The Disposal Agreement would, as further supported by the evidence in the SWAPE Report at pages 24-25, aggressively move San Francisco in the wrong direction, and the FND gives scant consideration to the effect of such contrary action while ignoring the science of climate change. The fact that state-wide or regional implementing actions or legislation have not yet been adopted does not excuse the City from taking climate change into account, from properly evaluating the effect of the proposed decision or from evaluating feasible alternatives.

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[10] See SWAPE report at pages 6-9.

[11] Because of uncertainty in Recology's commitment to update its truck fleet to cleaner vehicles, the Project cannot provide the necessary information needed to actually conclude compliance with AB-32 Scoping Plan. In addition, even assuming vehicle updates, the FND fails to analyze how LNG vehicles may nevertheless still be significant greenhouse gas contributors. Id.

7. Errors in Emission Factors and other Technical Errors.

The SWAPE Report identifies various errors in the FND's Air Quality and GHG Technical Report that result in significantly understated emissions.

These include:

(i) Use of erroneous emission factors for LNG vehicles;

(ii) Failure to use Class 8 truck emission factors;

(iii) Use of incorrect CH_4 and N_2O emission factors;

(iv) Use of incorrect and unsubstantiated fuel economy rates for Recology's LGN trucks; and

(v) Overt failure to address GHG emissions from increased use of LGN trucks.

In addition, the evidence presented in the SWAPE Report indicates that LNG fueled trucks require heavy tanks for on-board fuel storage of LNG under pressure, adding as much as 2,000 lbs. to a vehicle's weight. The result is that these trucks cannot carry as heavy payloads as comparable diesel trucks, and therefore Recology cannot, as stated to the Planning Commission, assume, absent further evidence, that it will be able to employ alternatively fueled trucks with larger payloads than its existing fleet. (SWAPE Report at pages 10-11.) The SWAPE Report further provides evidence that LNG vehicles will still be substantial contributors to greenhouse gas emissions. (SWAPE Report at pages 8-10 and 11-12.)

Moreover, the report prepared by Gladstein, Neandross, and Associates, dated May 20, 2015 (the "GNA Report") cites errors in the AQ technical report and identifies a complete failure to use the CARB Low Carson Fuel Standards ("LCSF") methodology for calculating the well to wheels GHG emissions. When LCSF criteria are properly utilized to evaluate incremental greenhouse gas emissions, the incremental increases in GHG emissions would exceed BAAQMD's significant standards or 1,100 MT CO2/year.

8. A Superior Close-In Alternative Exists.

The existing and geographically closer option of continuing MSW disposal at Altamont, which remains readily available, should be considered to reduce the environmental impacts of San

Francisco's MSW transport and disposal program.[12] Altamont is not only substantially closer to San Francisco than Hay Road, but it is also significantly closer to the access freeway (5.4 miles from I-580, as compared to 12.4 miles to Hay Road from 1-80). The greater distance provides the potential for greater impacts to local county roads, as well as increased potential for safety, noise, odor, and air quality impacts for nearby residents along the route. These are the very same factors that required an EIR in the Keep Our Mountains Quiet case.

In addition, increased use of zero emission vehicles and renewable liquid fuels are key components of the scenarios for achieving GHG 2030 target emission reductions. Yet, there is no commitment by Recology under the Project to use cleaner vehicles. San Francisco has the opportunity, however, at Altamont to immediately support a cleaner MSW transportation program.

Waste Management of Alameda (WMAC) developed and installed the "World's largest state-of-the-art Landfill Gas (LFG) to Liquefied Natural Gas" (LNG) operation at the Altamont Landfill. This ultra low-carbon bio-fuel powers nearly 300 Waste Management trucks a day, most of which operate in Alameda County, helping to improve the region's air quality.

By the time San Francisco's current disposal contract expires, San Francisco will have sent more than 15 million tons of solid waste to the Altamont Landfill — including about 6 million tons of organic materials. These organic wastes, along with the organic wastes accepted from other Bay Area communities over the past three decades, represent an extraordinarily valuable resource.

Today, the Altamont landfill is the only facility in the region with facilities to convert this waste-derived resource into renewable electricity as well as large quantities of ultra low-carbon transportation fuel. Using only the wastes already in place, the Altamont Landfill is capable of producing an average of about 8 megawatts of electricity and an estimated 13,000 gallons per day of bio-fuel in the form of LNG and Compressed Natural Gas (CNG) for each of the next 25 years. The California Air Resources Board determined that this natural gas produced from biomethane (in this case captured landfill gas) has the lowest carbon intensity of any fuel available today — about 85% lower than either gasoline or diesel.

[12] See GNA Report, dated May 20, 2015. The existing landfill delivery scenario results in lower GHG emissions than the proposed landfill delivery scenario.

The landfill gas to biomethane system provides the most environmentally positive means of managing any organics contained in the City's waste, in fact, rather than simply disposing of the City's garbage, WMAC takes that garbage and converts it into an environmentally beneficial, completely non-fossil fuel to transport solid waste. In effect, WMAC will be 'closing the loop' in the collection and disposal process by recovering and reusing a valuable byproduct of the landfill operation." The bio-fuel production also is consistent with San Francisco's Zero Waste goal as fuel production can be met through existing waste deposits in the Altamont Landfill and is not dependent on new organic waste streams."[13] New organics processing and recovery technologies planned for the Altamont facility will allow for even greater low-carbon energy production.

This bio-fuel is the lowest carbon intensity fuel available in California eliminating reliance on petroleum fuel and reducing Greenhouse Gas Emissions. Transporting San Francisco's MSW a considerably shorter distance to a landfill that converts garbage to an almost zero carbon intensity fuel is clearly consistent with San Francisco's goal of "minimizing and mitigating environmental impacts" and San Francisco has the opportunity to be a part of this worldwide recognized cutting-edge process. In fact, the Altamont's LNG facility was recognized by the US EPA's Landfill Methane Outreach Program (LMOP) as the 2009 Project of the Year and by the US Department of Energy Clean Cities Coalition — East Bay Chapter, which awarded the project its "East Bay Clean Cities 2009 Clean Air Champion" award.

In contrast, most of Recology's existing fleet is B-20 bio-diesel (diesel fuel derived from 20% vegetable or animal fats and 80% from petroleum). Only eleven trucks (or 20% of its fleet) run on lower emission LNG. While Recology has indicated that it plans to further up-grade its fleet, these plans remain uncertain and cannot be assumed for purposes of environmental review (and, in fact, were not assumed by the City in the FND). However, an alternative exists that would allow San Francisco to take advantage of the present opportunity to lessen the impact of its long-haul disposal and positively contribute to regional air quality. An environmental impact report is required to evaluate and consider that and any other feasible alternatives.

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[13] Moreover, the capture rates for landfill gas at the Altamont exceed 93% -- among the highest in the industry. This high rate of recovery ensures that existing gas is converted to the highest value of reuse — both bio-methane fuel and energy, and thus further reducing greenhouse gas emissions. Working with the United States Environmental Protection Agency, the California Air Resources Board, California Energy Commission and California Integrated Waste Management Board, WMAC has adopted the most sophisticated greenhouse gas emissions testing program in the industry, utilizing tunable diode laser technology, hundreds of field measurements are taken in the course of a few days to establish methane emissions. This is the most comprehensive test available.

9. No Environmental Review Shortcut for Hay Road Disposal Agreement.

The Board of Supervisors should overturn the approval of the FND and direct the Planning Department to correct the deficiencies in the Project Description, provide the additional required analyses, and insure that the Project complies with plainly applicable climate action goals and policies. These corrections and reviews will require preparation of an EIR to, at a minimum, address the transportation and associated air quality and greenhouse gas impacts of the Project, *i.e.*, the City's overall MSW disposal program over the next 15 years, as a whole, and to analyze appropriate mitigation measures including the reasonable range of feasible alternatives to lessen or avoid these impacts.

Respectfully,

Courtney R. Ross-Tait, of
DONGELL LAWRENCE FINNEY LLP

CRT:gp

Attachments

cc: Sara Jones, Environmental Review Officer (via email only)
Paul Maltzer, Senior Environmental Planner (via email only)

1813-011/107377

Attachments:

SWAPE Report, dated May 19, 2015, Comments on the Proposed Negative Declaration of the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County;

Article, San Francisco Chronicle, "3 Bay Area Counties Among Fastest Growing in State" (May 1, 2015);

Article, San Francisco Chronicle, "San Francisco Stalls In Its Attempt to Go Trash Free" (September 4, 2014); and

SWAPE Report, dated September 18, 2015, Comments on Final Negative Declaration for the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County.

GNA Report, dated May 20, 2015, Comments on the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County

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Aides

File 150412

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May 19, 2015

Subject: **Comments on the Proposed Negative Declaration for the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County; Case No. 2014.0653E**

We have reviewed the Preliminary Negative Declaration (PND) dated March 4, 2015 on the agreement for disposal of San Francisco municipal solid waste (MSW) at the Recology Hay Road landfill in Solano County ("Project"), and the Appeal filed on April 3, 2015 by Solano County Orderly Growth Committee. The proposed Project consists of an agreement to authorize the transportation and disposal of five million tons of MSW from San Francisco to the existing Recology Hay Road Landfill located in unincorporated Solano County, at 6426 Hay Road, near State Route 113, southeast of Vacaville. The MSW would be transported by long haul semi-trucks, primarily from the Recology San Francisco transfer station located at 501 Tunnel Avenue, with several additional trucks hauling residual wastes for disposal from Recology's Recycle Central facility, located at Pier 96 in San Francisco.

Our review of the PND concludes that an Environmental Impact Report (EIR) should be prepared because the PND:

- Fails to adequately assess the air quality and greenhouse gas impacts from the Project in its entirety;
- Does not comply with AB 32 reduction targets ;
- Does not consider San Francisco's population growth in future years; and
- Inadequately assesses the potential health risk from the Project as a whole.

Inadequate Project-Level Assessment of Greenhouse Gas and Air Quality Impacts

The PND evaluates the greenhouse gas (GHG) and criteria air pollutant (CAP) impacts from the proposed Project by calculating the net difference in emissions between an existing agreement with Recology for disposal of MSW at Waste Manager's Altamont Landfill and the new agreement and Project, a proposal for transport and disposal at Recology's Hay Road Landfill. The PND treats the Project as a change in the existing agreement; however, this assumption is incorrect, because the Project would require an entirely separate contract with a different landfill. A DEIR should be prepared to evaluate Project emissions in their totality.

The Project would be implemented by an agreement between the City and County of San Francisco and Recology to change the disposal site for San Francisco's MSW from the current Altamont Landfill in Livermore, California to the Recology Hay Road Landfill near Vacaville (p. 1). As a result, the contract for Altamont would end, and an entirely new contract for Hay Road would be executed. The existing agreement and the proposed agreement are for two entirely different landfills, in different counties, operating under different permits and different ownership. It is neither an extension nor a modification to an existing operation or program. As a result, the new agreement should not be treated as a change within the existing agreement; rather, the new agreement and associated impacts should be treated as an entirely new Project.

The PND's "Air Quality and GHG Technical Report" (Technical Report) summarizes the proposed Project's total operational emissions (see excerpt below from p. 15). The values highlighted in blue are the Project's emissions emitted within the San Francisco Bay Area Air Basin, the values highlighted in yellow are the emissions emitted within the Sacramento Valley Air Basin, and the values highlighted in purple are the total emissions from the Project from both air basins.

Proposed	San Francisco Bay Area Basin
Proposed	Sacramento Valley Air Basin
Total Proposed	Total Emissions

Proposed

pounds/day:					
ROG	CO	NOX	CO2e	PM10	PM2.5
6.81	23.89	92.59	22,725.08	6.22	2.41
tons/year (except for CO2e, which is in MT/year):					
ROG	CO	NOX	CO2e (MT)	PM10	PM2.5
1.07	3.74	14.48	3,222.89	0.97	0.38

Proposed

pounds/day:					
ROG	CO	NOX	CO2e	PM10	PM2.5
1.09	3.85	14.92	3,659.84	1.00	0.39
tons/year:					
ROG		NOX	CO2e (MT)	PM10	PM2.5
0.17	0.60	2.33	519.04	0.16	0.06

Total Proposed

pounds/day:					
ROG	CO	NOX	CO2e	PM10	PM2.5
7.9	27.7	107.5	26,384.9	7.2	2.8
tons/year:					
ROG	CO	NOX	CO2e	PM10	PM2.5
1.2	4.3	16.8	3,741.9	1.1	0.4

If the Project's emissions within the San Francisco Air Basin are compared to the significance thresholds specified in the PND (see excerpt below), the Project's NOx emissions would result in a significant impact (p. 49).

TABLE AQ-1
AIR QUALITY THRESHOLDS OF SIGNIFICANCE

Pollutant	Operational Thresholds for use within the SFBAAB	
	Average Daily Emissions (lbs. /day)	Maximum Annual Emissions (tons/year)
ROG	54	10[a]
NO_x	54	10[a]
PM_{10}	82[b]	15
$PM_{2.5}$	54	10
Fugitive Dust	Not Applicable	
CO	CO concentrations of 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average) as estimated by roadway vehicle volumes exceeding 44,000 vehicles per hour at any intersection.	

[a] Also applicable within the SVAB.

[b] YSAQMD significance threshold for PM10 is 80 lbs. /day.

SOURCE: BAAQMD, 2009; YSAQMD, 2007.

Furthermore, if the Project's greenhouse gas (GHG) emissions of 3,222.89 MT CO2e/year within the San Francisco Air Basin are compared to BAAQMD's GHG threshold of 1,100 MT CO2e/year, the emissions would result in a significant impact. An updated CEQA evaluation should be conducted to evaluate these impacts and to implement mitigation measures to address NOx and GHG emissions. Mitigation measures should be considered as discussed at the end of the following section.

Incremental Emissions Not Adequately Considered

The Project's criteria air pollutant and greenhouse gas emissions are underestimated even further, due to incorrect assumptions made in the PND and associated "Air Quality and GHG Technical Report" (Technical Report). Specifically, the air quality analysis does not factor in additional haul truck trips that would reasonably be expected to occur in future years as San Francisco's population and subsequent waste volume continue to grow.

We conducted a preliminary analysis of the incremental increase in Project emissions due to this population growth, and compared it to existing emissions (as is conducted in the PND). Even though this methodology greatly underestimates the Project's total operational emissions, the results of our analysis still demonstrated that the GHG emissions, when population growth is accounted for, will exceed BAAQMD's significance threshold of 1,100 MT CO2e/year from 2019 – 2030.

The PND and the associated Technical Report disclose the various assumptions made to calculate Project greenhouse gas (GHG) and criteria air pollutant emissions. According to the PND, the number of daily truck trips and the total waste volume would stay the same under the Project, which is estimated to occur over a 15 year contract period (p. 4, 9). This statement is not justified, nor is it substantiated by any supporting documentation. Furthermore, the idea that the total waste volume, and consequent

daily truck trips, will remain unchanged for 15 years is unrealistic. The City of San Francisco has experienced a steady population increase every year for the past decade, and based on this trend, is most likely going to continue growing in future years. As a result, the waste volume produced by San Francisco is also going to increase, even with increased diversion efforts. Our review concludes that if the increase in population is included in the air quality calculations, the Project's GHG emissions in future years will exceed BAAQMD's threshold of 1,100 MT CO2e/year.[1] An updated CEQA evaluation should be prepared to account for the population growth that San Francisco will experience in future years, and should adjust the proposed Project's estimated daily truck trips and resultant emissions accordingly.

We used historical population data, population projections, waste volumes for San Francisco and the Altamont Landfill, and a number of other parameters specified in the PND and associated Technical Report to determine San Francisco's waste volume in future years. According to the PND and associated Technical Report, the proposed project would start in 2016 and operate for up to 15 years (Technical Report p. 2, PND p. 4); as a result, we calculated the waste volume, and subsequent emissions, for 2016 – 2030.

The PND discusses how they determined the number of daily truck trips Recology makes within a given year to the Altamont Landfill. The PND states:

> "Recology owns and operates its own transfer truck fleet...these trucks have a maximum payload of about 24.5 tons. In 2012, Recology hauled 374,844 tons of San Francisco MSW to the Altamont Landfill. Based on the total tonnage hauled to Altamont Landfill and the capacity of each transfer truck, it took approximately 15,300 loads to reach this tonnage-- or 294 loads per week for 52 weeks. Based on a 6 day week (Recology typically hauls MSW loads from Sunday evening through Friday) this resulted in approximately 50 trucks (or round trips) per day hauling San Francisco MSW to the Altamont Landfill" (p. 6).

This 2012 waste volume of 374,844 tons was taken from the California Department of Resources Recycling and Recovery's (CalRecycle) Disposal Reporting System (DRS),[2] which provides annual estimates of the disposal amounts for jurisdictions in California. The report shows the total amount disposed by the jurisdiction (San Francisco) at each disposal facility (Altamont Landfill) for a requested year.[3] According to the 2012 DRS report, San Francisco produced an estimated 454,570 tons of waste, of which 374,844 tons, or 82%, was disposed of at the Altamont Landfill.[4] Similarly, in 2013 San Francisco produced an estimated 476,424 tons of waste, of which 372,205 tons, or 78%, was disposed of

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1http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx p. 2-2

2http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2012%26ReportName%3dReportEDRSJurisDisposalByFacility

3 http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx

4http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2012%26ReportName%3dReportEDRSJurisDisposalByFacility

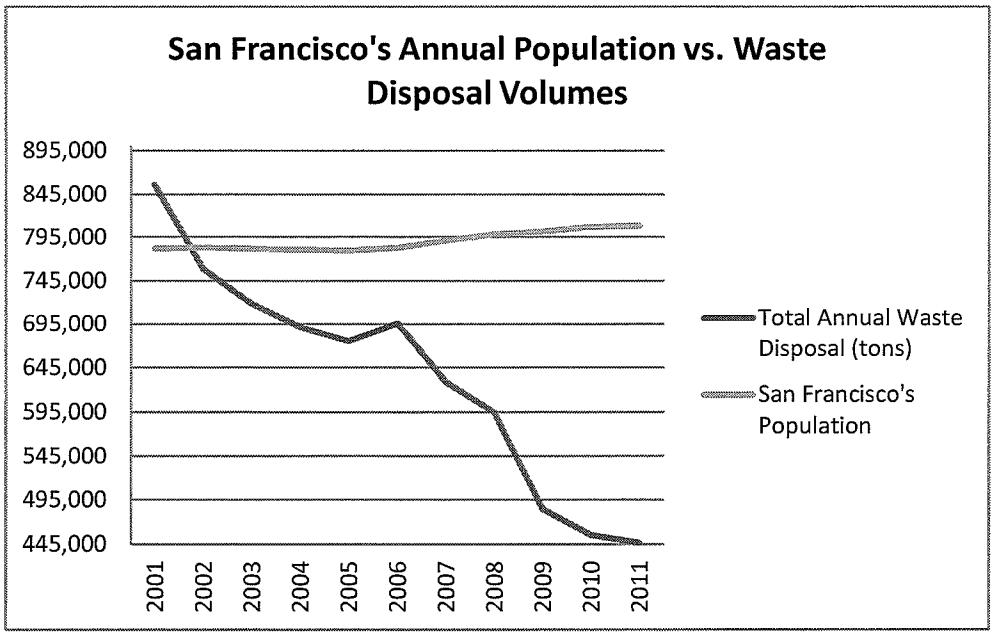
at the Altamont Landfill.[5] Years prior to 2012 also exhibit the same trend in the amount of San Francisco's waste disposed of at the Altamont Landfill (see table below).

Reporting Year	Annual Disposal Amount (tons) San Francisco	Annual Disposal Amount (tons) Altamont Landfill	Percentage of Waste Allocated to Altamont Landfill
2008	594,660	498,382	84%
2009	484,812	406,417	84%
2010	455,332	383,104	84%
2011	446,634	374,202	84%
2012	454,570	374,844	82%
2013	476,424	372,205	78%
		AVERAGE (2012 – 2013)	**80%**

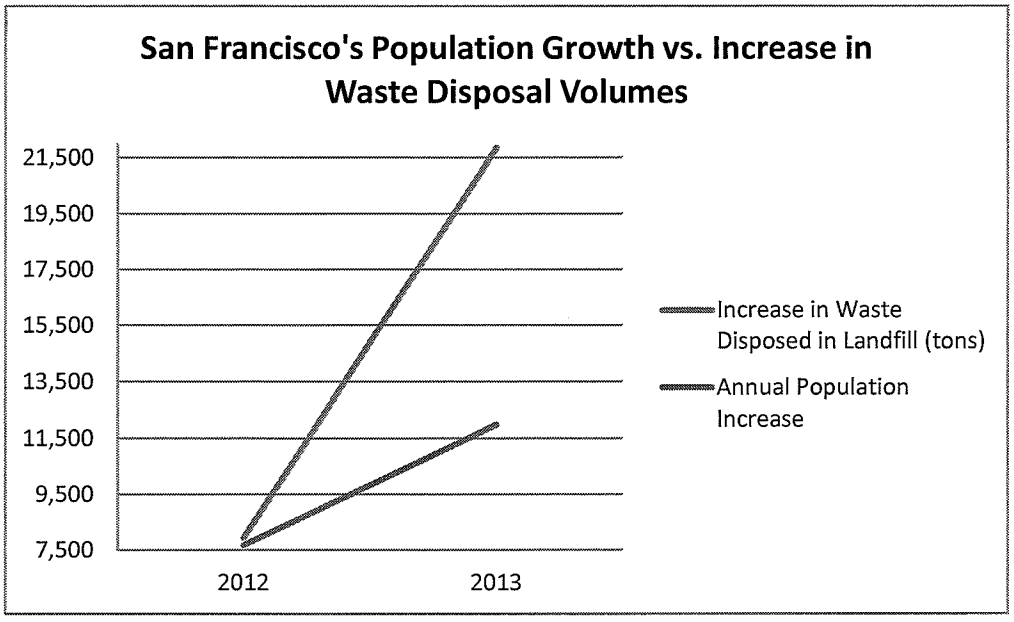
Utilizing the results from these reports, it can be assumed that roughly 82 – 84% of San Francisco's waste was disposed of by Recology to the Altamont Landfill in past years. Taking the percentages from 2012 to 2013, we calculated an average value of 80%, which we then used to determine the approximate waste volume that would be disposed of at the proposed Recology Hay Road Landfill in future years. It should be noted that we limited this average value to the most recent years (2012 – 2013) to account for the increased recycling and composting activities that have occurred over the past decade.

We then compared San Francisco's historical population[6] to the annual waste volume disposed by San Francisco.[7] As exhibited in the chart below, from 2001 to 2011, San Francisco's population steadily increased, but the waste disposed by San Francisco decreased. In 2001, the per capita disposal rate was approximately 6 pounds per person per day (lbs/person/day), and this value steadily decreased over the course of ten years, with the average per capita rate being approximately 4.6 lbs/person/day.

5http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2013%26ReportName%3dReportEDRSJurisDisposalByFacility
6 http://www.dof.ca.gov/research/demographic/reports/estimates/e-7/view.php
7 http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx



Conversely, in 2012 and 2013, San Francisco's population and waste volume increased (see chart below).



This trend indicates that even with the implementation of recycling and composting, the waste volume has increased in recent years and will most likely increase in future years as the population increases. The lowest per capita disposal rate occurred in 2011, with a rate of approximately 3 lbs/person/day. Since then, this rate has slowly, but steadily increased each year. Furthermore, in recent years, average recycling commodity prices have decreased drastically.[89] From 2013 to 2014, recycling prices dropped

8 http://www.recyclingtoday.com/rt0515-ferrous-scrap-processors-challenges.aspx

by 23.7%, and in early 2015, prices decreased by 14%.[10] As a result, recycling programs for private waste management companies are less profitable. If recycling commodity prices continue to decline, recycling plants will continue to shut down, and rates of waste diversion will begin to decrease. For these reasons, we used the average of these two most recent years, exclusively.

CalRecycle's DRS only has disposal reports for 2013 or earlier; as a result, we had to use additional resources to estimate the waste volume for future years. The Demographic Research Unit of the California Department of Finance is designated as the single official source of demographic data for state planning. This department provides publicly available reports on population estimates from cities, counties, and the state according to year. It also provides population projections for future years. We utilized data from the following reports to determine the City of San Francisco's past, present, and future population: (1) "E-1 Cities, Counties, and the State Population Estimates with Annual Percent Change – January 1, 2014 and 2015;"[11] (2) "E-4 Population Estimates for Cities, Counties, and the State, 2011-2015, with 2010 Census Benchmark;"[12] and (3) "P-3 Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010 – 2060."[13] The values from these reports are summarized in the table below.

Reporting Year	Population
2014	834,903
2015	845,602
2016	857,106
2017	865,639
2018	874,210
2019	882,831
2020	891,493
2021	899,992
2022	908,342
2023	916,398
2024	924,332
2025	932,109
2026	939,662
2027	947,118
2028	954,231
2029	960,992
2030	967,405

9 http://www.houstonchronicle.com/business/article/Waste-Management-continues-to-struggle-with-6085567.php
10 http://www.wastedive.com/news/waste-management-q1-results-sink-under-divestitures-recycling-prices/392679/
11 http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php
12 http://www.dof.ca.gov/research/demographic/reports/estimates/e-4/2011-20/view.php
13 http://www.dof.ca.gov/research/demographic/reports/projections/P-3/

For the years where both the waste volume and population data were available, we determined a per person disposal rate, and then used this disposal rate to determine San Francisco's annual disposal amount for years where waste data was lacking. It should be noted that the methodology used to calculate a per person disposal rate is consistent with methods used by CalRecycle.[14] For example, in 2010, CalRecycle determined a disposal rate of 3 lbs/person/day by taking the total waste volume disposed by San Francisco, and dividing it by the population.[15]

The results of our calculations for 2014 - 2015 are summarized in the table below. The values in italics indicate data taken from a source (CalRecycle and the California Department of Finance); the underlined values were derived from this data. As you can see, the disposal rates are similar to the 2010 value.

Reporting Year	Population	Annual Disposal Amount (tons) San Francisco	Annual Disposal Amount (tons) Altamont Landfill	Percentage of Waste Allocated to Altamont Landfill	Disposal Rate (lbs/person/day)
2012	*816,446*	*454,570*	*374,844*	82%	3.1
2013	*828,440*	*476,424*	*372,205*	78%	3.2
2014	*834,903*	468,685	374,948	-	-
2015	*845,602*	474,691	379,753	-	-
-	-	-	**AVERAGE VALUE**	**80%**	**3.1**

According to the PND, a typical Recology transfer truck has a maximum payload (maximum tonnage that can be loaded into a trailer) of 24.5 tons (p. 6). We used this value, along with the values listed above, to determine the number of additional daily haul trips that would occur from 2016 - 2030, as a result of San Francisco's increasing population. The results of our calculations are summarized in the table below.

Reporting Year	Population	Estimated Annual Disposal Amount (tons)	Estimated Annual Disposal Amount (tons) Proposed Landfill	Hauling Trips Per Day (Round Trip)	Tons of Waste Per Haul
2014	834,903	468,685	376,321	50	24.5
2015	845,602	474,691	381,143	50	24.5
2016	857,106	481,149	386,329	50	24.5
2017	865,639	485,939	390,175	51	24.5
2018	874,210	490,750	394,038	51	24.5
2019	882,831	495,590	397,924	52	24.5
2020	891,493	500,452	401,828	52	24.5
2021	899,992	505,223	405,659	53	24.5
2022	908,342	509,911	409,422	53	24.5

14 http://www.calrecycle.ca.gov/LGCentral/Reports/Jurisdiction/DiversionDisposal.aspx

15http://www.calrecycle.ca.gov/LGCentral/Reports/DiversionProgram/JurisdictionDiversionDetail.aspx?JurisdictionID=438&Year=2010

2023	916,398	514,433	413,054	54	24.5
2024	924,332	518,887	416,630	54	24.5
2025	932,109	523,253	420,135	55	24.5
2026	939,662	527,493	423,539	55	24.5
2027	947,118	531,678	426,900	56	24.5
2028	954,231	535,671	430,106	56	24.5
2029	960,992	539,466	433,154	57	24.5
2030	967,405	543,066	436,044	57	24.5

At the current rates of disposal, the PND estimates that the agreement would have a term of up 15 years to allow for the disposal of 5 million tons of MSW (p. 4). However, they do not take into account San Francisco's population growth, nor do they consider the decrease (or rather lack of change) in recycling rates in recent years. As a result, the proposed agreement may not last the full 15 years, as originally anticipated. Based on the projected annual waste volumes listed above for the proposed landfill, from 2016 – 2030 (15 years) the estimated total waste volume would be approximately 6.1 million tons. From 2016 – 2027, the estimated total waste volume would be roughly 4.9 million tons, and from 2016 – 2028, the total waste volume would be roughly 5.3 million. As a result, the total duration of the proposed Project may be cut short by three to four years; however, for the purpose of this analysis, we assumed a period of 15 years.

Each additional truck trip per day results in roughly 313 additional truck trips annually, assuming a six day work week (see table below).[16] As a result, the emissions from these additional truck trips have the ability to make a significant impact on the regional air quality within Sacramento Valley and the Bay Area.

Reporting Year	Hauling Trips Per Day (Round Trip)	Additional Haul Trips Per Day	Additional Annual Haul Trips
2014	50	0	0
2015	50	0	0
2016	50	0	0
2017	51	1	313
2018	51	1	313
2019	52	2	626
2020	52	2	626
2021	53	3	939
2022	53	3	939
2023	54	4	1,252
2024	54	4	1,252
2025	55	5	1,565

16 The full length of these additional truck trips need to be considered in the environmental analysis, including the additional local transportation impacts of these additional trips.

2026	55	5	1,565
2027	56	6	1,877
2028	56	6	1,877
2029	57	7	2,190
2030	57	7	2,190

The Technical Report provides the emission rates, adjustment factors, formulas, and other parameters used to calculate the proposed and existing Project's emissions (p. 15 - 25). We used these values and applied them to the estimated daily haul trips for each year the proposed Project will be in operation. We then calculated the net difference between the existing Project emissions and the proposed Project emissions. The results of our calculations are summarized in the table below, and the calculation details can be found in **Attachment A**.

Operational Year	**Daily Hauling Trips**	**Project Scenario Emissions per Air Basin**	**Incremental Increase in Proposed Project Annual Emissions (San Francisco and Sacramento Air Basins Combined)**					
-	**Round Trip per Day**	-	***tons/year (except for CO2e, which is in MT/year)***					
			ROG	**CO**	**NOx**	**CO2e**	**PM10**	**PM2.5**
2016 (Current Conditions)	50	Proposed - SF	1.11	3.89	15.09	3,357	1.06	0.41
		Proposed - Sacramento	0.18	0.63	2.43	539	0.17	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.40***	***1.54***	***5.13***	***954***	***0.33***	***0.14***
2017 - 2018	51	Proposed - SF	1.13	3.97	15.39	3,424	1.08	0.42
		Proposed - Sacramento	0.18	0.64	2.48	550	0.17	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.42***	***1.63***	***5.48***	***1,032***	***0.36***	***0.15***
2019 - 2020	52	Proposed - SF	1.15	4.05	15.69	3,491	1.11	0.43
		Proposed - Sacramento	0.18	0.65	2.53	561	0.18	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.45***	***1.72***	***5.83***	***1,110***	***0.38***	***0.16***
2021 - 2022	53	Proposed - SF	1.18	4.13	15.99	3,559	1.13	0.43
		Proposed - Sacramento	0.19	0.66	2.58	572	0.18	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.47***	***1.81***	***6.18***	***1,188***	***0.41***	***0.17***
2023 - 2024	54	Proposed - SF	1.20	4.20	16.29	3,626	1.15	0.44
		Proposed - Sacramento	0.19	0.68	2.63	583	0.19	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.50***	***1.90***	***6.53***	***1,266***	***0.43***	***0.18***
2025 - 2026	55	Proposed - SF	1.22	4.28	16.60	3,693	1.17	0.45
		Proposed - Sacramento	0.20	0.69	2.67	593	0.19	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34

		Total Net Difference	***0.52***	***1.99***	***6.88***	***1,344***	***0.46***	***0.19***
2027 - 2028	56	Proposed - SF	1.24	4.36	16.90	3,760	1.19	0.46
		Proposed - Sacramento	0.20	0.70	2.72	604	0.19	0.07
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.55***	***2.08***	***7.23***	***1,422***	***0.48***	***0.19***
2029 - 2030	57	Proposed - SF	1.27	4.44	17.20	3,827	1.21	0.47
		Proposed - Sacramento	0.20	0.71	2.77	615	0.20	0.08
		Existing - SF (2014)	0.89	2.98	12.39	2,942	0.90	0.34
		Total Net Difference	***0.58***	***2.17***	***7.58***	***1,500***	***0.51***	***0.20***

The results of our analysis indicate that from 2019 until 2030, the GHG emissions from the proposed Project, compared to the existing Project's emissions, will exceed BAAQMD's 1,100 MT CO2e/year threshold[17], and as a result, will have a significant impact.

Additional mitigation measures, specific to the reduction of mobile source GHG emissions, are proposed in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures,*[18] and should be considered in a subsequent analysis. Measures specified in CAPCOA's guidance document are more stringent and prescriptive than those measures identified in the PND, and provide many simple design features, that when combined together, optimize GHG emissions reductions. An updated CEQA evaluation should be prepared to include additional mitigation measures, as well as include an updated air quality assessment to ensure that the necessary mitigation measures are implemented to reduce GHG mobile source emissions to below BAAQMD thresholds.

Project Conflicts with GHG Reduction Targets

The PND compares the proposed Project's GHG emissions to the targets set forth by AB 32 Scoping Plan, BAAQMD's 2010 Climate Action Plan (CAP), and the Solano County CAP (p. 65). The PND determines Project compliance with transportation measures specified in the AB 32 Scoping Plan by assuring that Recology is in the process of phasing in cleaner vehicles into their fleet in future years. This proposed fleet update is not supported by documentation or any details, such as phase in year, number of trucks added, number of trucks removed, total fleet size in future years etc., and it also contradicts Project details described in the both the PND and the associated Technical Report. The proposed Project does not disclose the necessary information needed to actually conclude compliance with targets discussed in the AB 32 Scoping Plan. An updated CEQA evaluation should be conducted to address this issue, and mitigate, where necessary.

17http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx p. 2-2

18 http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

The PND compares the proposed Project's GHG emissions to the targets set forth by AB 32 Scoping Plan Update for transportation-related GHG emissions. [19] The PND states:

> "The AB 32 Scoping Plan and Scoping Plan Update include four transportation-related strategies for reduction of GHGs and criteria pollutants: (1) improve vehicle efficiency and develop zero emission technologies, (2) reduce the carbon content of fuels and provide market support to get these lower-carbon fuels into the marketplace, (3) plan and build communities to reduce vehicular GHG emissions and provide more transportation options, and (4) improve the efficiency and throughput of existing transportation systems" (p. 69).

The PND concludes that the Project would comply with the above measures because "currently, eleven trucks in Recology's fleet run on liquefied natural gas (LNG), and Recology is in the process of phasing in additional transfer vehicles that run on LNG or compressed natural gas (CNG)...the proposed project is therefore consistent with the Scoping Plan Update's emphasis on reducing GHG emissions from heavy-duty trucks" (p. 70).

Specifics on these proposed fleet additions are not disclosed, and supporting documentation to back up these claims is not provided. As a result, we are not able to verify the actuality of this claim, nor are we able to determine the extent of which these proposed additions will occur. Important details are omitted from the PND, such as the number of trucks added to Recology's fleet, the proposed year these new trucks will be implemented, the financial feasibility of these additional trucks, the size of Recology's fleet after the addition of these trucks, the resultant increase in daily truck trips if the fleet is enlarged etc. Without these details, it cannot be determined whether or not the proposed Project conflicts with AB 32's Scoping Plan Update.

These details are also crucial in determining the Project's air quality and GHG impacts. For example, if these additional trucks result in a larger truck fleet, the daily hauling trips will most likely increase, and subsequently, the Project's emissions. Furthermore, without knowing the year these trucks will be added, there is no way to determine the Project's compliance with the Scoping Plan. Because the Project is being compared to the current agreement, reductions in GHG emissions would have to occur during the Project's first year of operation. As a result, these additional trucks would need to be phased into Recology's fleet and in operation by 2016.

These proposed fleet additions present conflicting ideas within the PND and associated Technical Report. The Technical Report specifies that the "existing truck fleet and number of daily trips" would stay the same under the proposed Project, and uses this fact as a basis for calculating the Project's potential emissions and for determining the Project's air quality and GHG impacts (p. 2). Furthermore, the PND states that "the Recology Hay Road Landfill, the San Francisco Transfer Station, Recology's Recycle Central Facility, and the truck hauling fleet currently used to transport San Francisco waste would enter into one or more agreements for the transportation and disposal of 5 million tons of San

19 http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf

Francisco MSW at the Recology Hay Road Landfill" (p. 1). If these facilities and the current fleet are entering into the proposed agreement, exclusively, the addition of cleaner transfer trucks cannot be used as a way to show compliance with the AB 32 Scoping Plan Update.

The PND attempts to further justify the Project's compliance with AB 32's Scoping Plan Update. The PND states that "because the proposed project's GHG emissions would be below the quantitative significance threshold of 1,100 metric tons of CO2e per year...the proposed project would contribute to meeting the SFBAAB's fair share of emission reductions for the year 2020." This statement, as presented by the analysis conducted in the previous section, may not hold true. According to our analysis, GHG emissions from 2019 – 2030 would result in a significant impact. Furthermore, it is not clear if these truck additions would result in a larger fleet. If so, the daily hauling trips would increase, and as a result, both the emissions calculated in the Technical Report and the emissions calculated in the previous section, underestimate the proposed Project's potential emissions.

The PND also does not quantify or implement reduction targets for the proposed Project, which are specified in AB 32. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under the "business as usual" scenario.[20] Since the PND treats the proposed new contract as a change in existing conditions, and not as two entirely different entities, the PND should demonstrate that this proposed Project "update" would result in a minimum 15 percent reduction in GHG emissions.

Furthermore, Governor Brown recently issued an executive order to establish an even more ambitious GHG reduction target. Executive Order B-30-15[21] requires emissions reductions above those mandated by AB 32 to reduce GHG emissions 40 percent below their 1990 levels by 2030. The newly-stated GHG reductions target should also be considered as a threshold of significance against which to measure Project impacts. The analysis would need to translate the new statewide targets into a project specific threshold against which Project GHG emissions are compared. An environmental impact report should be prepared to quantify any reductions expected to be achieved by mitigation measures, shown by substantial evidence that such measures will be effective and should demonstrate how the reductions will reduce the emissions below the significance threshold adopted.

Health Risk from Diesel Particulate Matter Inadequately Evaluated

The PND conducted a health risk assessment, and determined that the cancer risk from the proposed Project would be less than significant. Several incorrect assumptions were made in calculating the potential health risk. First, the PND and associated Technical Report use the model CALINE4 to predict a maximum 1-hour diesel particulate matter concentration from the Project's daily truck trips. CALINE4, however, should only be used for carbon monoxide (CO) analyses in California. Second, as previously mentioned, the incremental increase in daily truck trips that would occur as a result of San Francisco's

20 http://www.arb.ca.gov/cc/ab32/ab32.htm
21 http://gov.ca.gov/news.php?id=18938

growing population was not taken into account; as a result, the health risk calculated in the PND is underestimated. Our review of the estimated Project emissions of diesel particulate matter (DPM) determined that significant air quality impacts may be generated through the use of diesel-fueled hauling trucks to and from the site.

The PND's Technical Report conducts a health risk assessment using the CALINE4 model. However, according to the California Department of Transportation "CALINE4 is only accepted by U.S. EPA for CO analysis in California; for other pollutants... use CAL3QHCR or AERMOD."[22] For particulate matter hot spot analyses, the EPA has specified the models and procedures to be used for conformity purposes, and recommends the use of the CAL3QHCR line-source model for simple highway and intersection projects, and the AERMOD dispersion model for complex highway projects.[23] Therefore, in an effort to accurately estimate the potential health risk posed to sensitive receptors from the proposed Project, we used AERSCREEN, the screening version of the AERMOD model, to conduct our analysis.

Furthermore, the screening-level health risk assessment conducted in the PND and associated Technical Report does not account for the incremental increase in daily truck trips, and subsequent DPM emissions, that would occur as a result of San Francisco's growing population in future years. As a result, the cancer risk is underestimated. In our analysis, we corrected for this underestimation and calculated the cancer risk for the duration of the Project using emission rates that account for this steady increase in emissions every year.

As of 2011, the United States Environmental Protection Agency (USEPA) recommends AERSCREEN as the leading air dispersion model, due to improvements in simulating local meteorological conditions based on simple input parameters.[24] The model replaced SCREEN3, which is included in OEHHA[25] and CAPCOA[26] guidance as the appropriate air dispersion model for Level 2 health risk screening assessments (HRSAs). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

The AERSCREEN model relies on a continuous average emission rate to simulate maximum downwind concentrations from point, area, and volume emission sources. To account for the variability in hauling truck usage over the course of an operational year, we calculated an average DPM emission rate by the following equation.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{tons}{year} \times \frac{2000\ lbs}{ton} \times \frac{453.6\ grams}{lb} \times \frac{312.9\ days}{year} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds}$$

22 http://www.dot.ca.gov/hq/env/air/software/caline4/calinesw.htm
23 http://www.dot.ca.gov/hq/env/air/pages/qualpm.htm
24 http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf
25 http://oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf
26 http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

We then used the average emission rate and applied it to the total anticipated Project duration. The results of our calculation are summarized in the table below.

Year	Exhaust PM10 Emissions (tons/year)	Exhaust PM10 Emissions (g/sec)
2016	1.23	0.041
2017	1.26	0.042
2018	1.26	0.042
2019	1.28	0.043
2020	1.28	0.043
2021	1.31	0.044
2022	1.31	0.044
2023	1.33	0.045
2024	1.33	0.045
2025	1.36	0.046
2026	1.36	0.046
2027	1.38	0.046
2028	1.38	0.046
2029	1.41	0.047
2030	1.41	0.047
AVERAGE		**0.044**

We modeled the route taken by these trucks as a volume source, and used an initial lateral dimension of 100 meters to represent one link of the freeway at any given time during the 155 mile trip length. A volume height of three meters was selected to represent the height of exhaust stacks on heavy duty trucks, and an initial vertical dimension of 1.5 meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generated maximum reasonable estimates of single-hour downwind DPM concentrations from the Project. USEPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant may be estimated by multiplying the single-hour concentration by 10%.[27] The maximum single-hour downwind concentration in the AERSCREEN output was approximately 2.10 $\mu g/m^3$ DPM 216 meters downwind. The annualized average concentration for the sensitive receptors was estimated to be 0.21 $\mu g/m^3$.

We calculated excess cancer risks for adults, children, and infant receptors using applicable HRA methodologies prescribed by OEHHA. OEHHA recommends the use of Age Sensitivity Factors (ASFs) to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.[28] According to the revised guidance, quantified cancer risk should be multiplied by a factor of ten during

27 http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf
28 http://oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter11_2012.pdf

the first two years of life (infant), and by a factor of three for the subsequent fourteen years of life (child greater than two until sixteen). The results of our calculations are shown below.

Parameter	Description	Units	Adult Exposure	Child	Infant
Cair	Concentration	µg/m3	0.21	0.21	0.21
DBR	Daily breathing rate	L/kg-day	302	581	581
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	15	14	2
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	1.3E-05	2.2E-05	3.3E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**1.43E-05**	**7.72E-05**	**3.68E-05**

The excess cancer risk to adults, children, and infants are 14.3, 77.2, and 36.8 in one million, respectively. Consistent with OEHHA guidance, exposure was assumed to begin in the infantile stage of life to provide the most conservative estimate of air quality hazards. It should be noted that the infant exposure duration was limited to two years, as the ASF of 10 can only be applied to the first two years of life. Similarly, I limited the exposure duration for a child to 14 years, as the ASF of 3 can only be applied to a child greater than two years old up to 16 years.

Even with these shortened exposure durations for children and infants, the cancer risk posed to sensitive receptors located approximately 200 meters from the proposed truck route, for all three age categories, exceeds BAAQMD's significance threshold of 10 in one million. A refined health risk assessment should therefore be prepared to examine air quality impacts generated by the Project using site-specific meteorology and specific truck usage schedules. Our calculations demonstrate that the Project poses a significant health risk due to DPM emissions. Therefore, an updated CEQA evaluation should be completed and adequate mitigation measures and alternatives should be evaluated for the Project.

Conclusion

The PND does not adequately assess the proposed Project's air quality and greenhouse gas impacts, nor does it effectively demonstrate compliance will applicable greenhouse gas reduction targets. The PND incorrectly compares the emissions from the existing contract with Altamont Landfill to the proposed new contract with Recology Hay Road Landfill; as a result, the proposed Project's emissions are underestimated. Moreover, the PND does not account for the incremental increase in daily haul trips and subsequent emissions that will most likely occur in future years, as San Francisco's population and waste volume grow. The PND inadequately evaluates the potential health risk posed to sensitive receptors located near the proposed truck route. Due to each and all of these shortcomings, an EIR

should be prepared to address and correct for these issues, and should implement mitigation measures, where necessary.

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SFGATE http://www.sfgate.com/news/article/Three-Bay-Area-counties-among-the-fastest-growing-6236798.php

3 Bay Area counties among fastest growing in state

By Melody Gutierrez Updated 4:52 pm, Friday, May 1, 2015

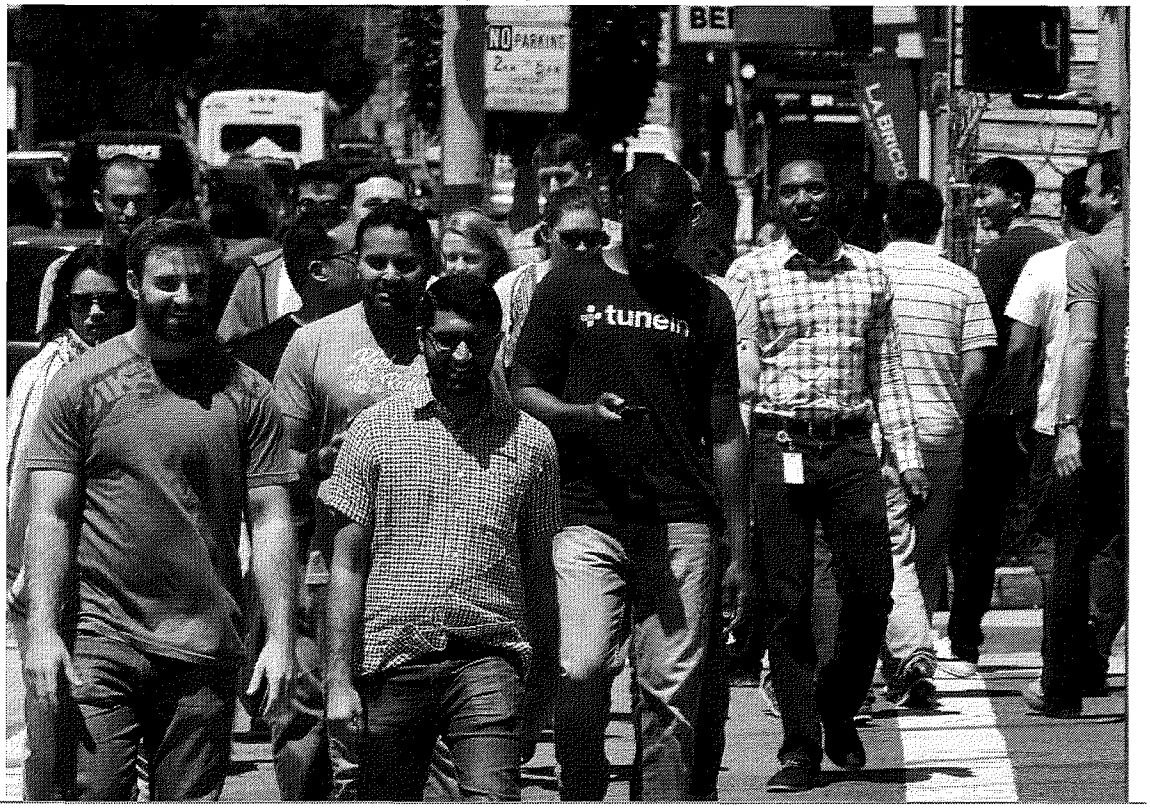

IMAGE 1 OF 6

A crowd crosses Harrison Street at Second Street in San Francisco.

SACRAMENTO — The Bay Area's nine counties added 85,000 residents last year as California saw modest 1 percent growth statewide, according to new estimates released Friday.

State Department of Finance data show California gained 358,000 residents in 2014 to bring th state's total population to 38.7 million. Three of the five fastest-growing counties in the state were in the Bay Area — San Francisco, Alameda and Contra Costa, while Dublin was one of the fastest-growing cities in California.

"This has been a period when the Bay Area economy has been expanding and pulling people in t work in those jobs and participate in that," said Cynthia Kroll, chief economist at the Associatio of Bay Area Governments. "There has been huge pressure on the housing market, particularly ir San Francisco, but also in the East Bay."

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Los Angeles and San Diego led the state in net housing growth, adding a combined 13,500 uni last year, while San Jose (4,400 units) and San Francisco (3,500 units) followed. In San Francisco, where the housing crunch has led to soaring rental prices, the city's net housing last year jumped 50 percent compared with the 2,400 units gained in 2013.

The 5,900 units over the past two years come a San Francisco added 21,000 people during that time.

Statewide, net housing additions increased 17 percent in 2014, with 69,000 units added, compared with 59,000 in 2013.

Weed (Siskiyou County) saw the largest population decline among cities last year with 8.8 percent, a direct result of housing lost in the Boles Fire. More than 150 homes were lost in the September fire, accounting for a third of the small lumber town's residences.

"Many of the displaced families left the city of Weed, but not the county," said John Malson, chief of demographic research for the Department of Finance. "Weed suffered a large populatio decline from that. If they rebuild, we expect that to pick up."

In all, 421 cities added residents, while 61 cities saw declines or stayed the same.

The largest cities in the state are Los Angeles, which has 3.9 million people after growing by 43,000 last year, and San Diego, which has a population of 1.4 million people after adding 20,000 people. San Jose, the state's third-largest city, added 14,000 people last year to bring its total to more than a million people.

San Francisco is the state's fourth-largest city, with 845,602 people after increasing by 10,700.

San Joaquin County saw the largest percentage increase of the 58 counties after growing 1.5 percent, followed by Imperial County near the California-Mexico border, San Francisco, Alameda and Contra Costa, which each grew 1.3 percent.

Taft (Kern County) was the fastest-growing city in the state, after a community corrections facility was reopened and spurred a 6.3 percent population increase. New housing spurred population increases in Sand City in Monterey County (5.8 percent), Dublin in Alameda Count

(4.5 percent) and Imperial in Imperial County (4.1 percent).

"The state has had steady growth for several years, although it's showing a little more robust growth since the recession," Malson said.

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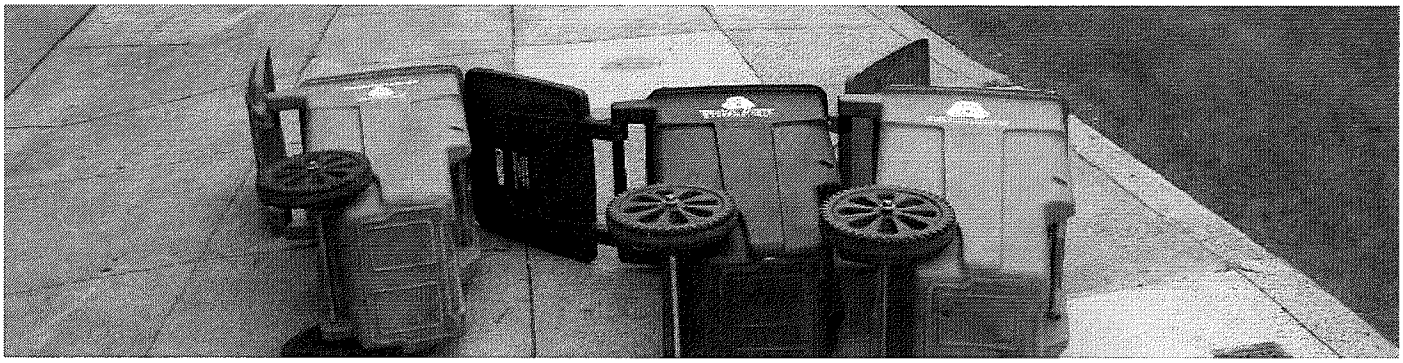


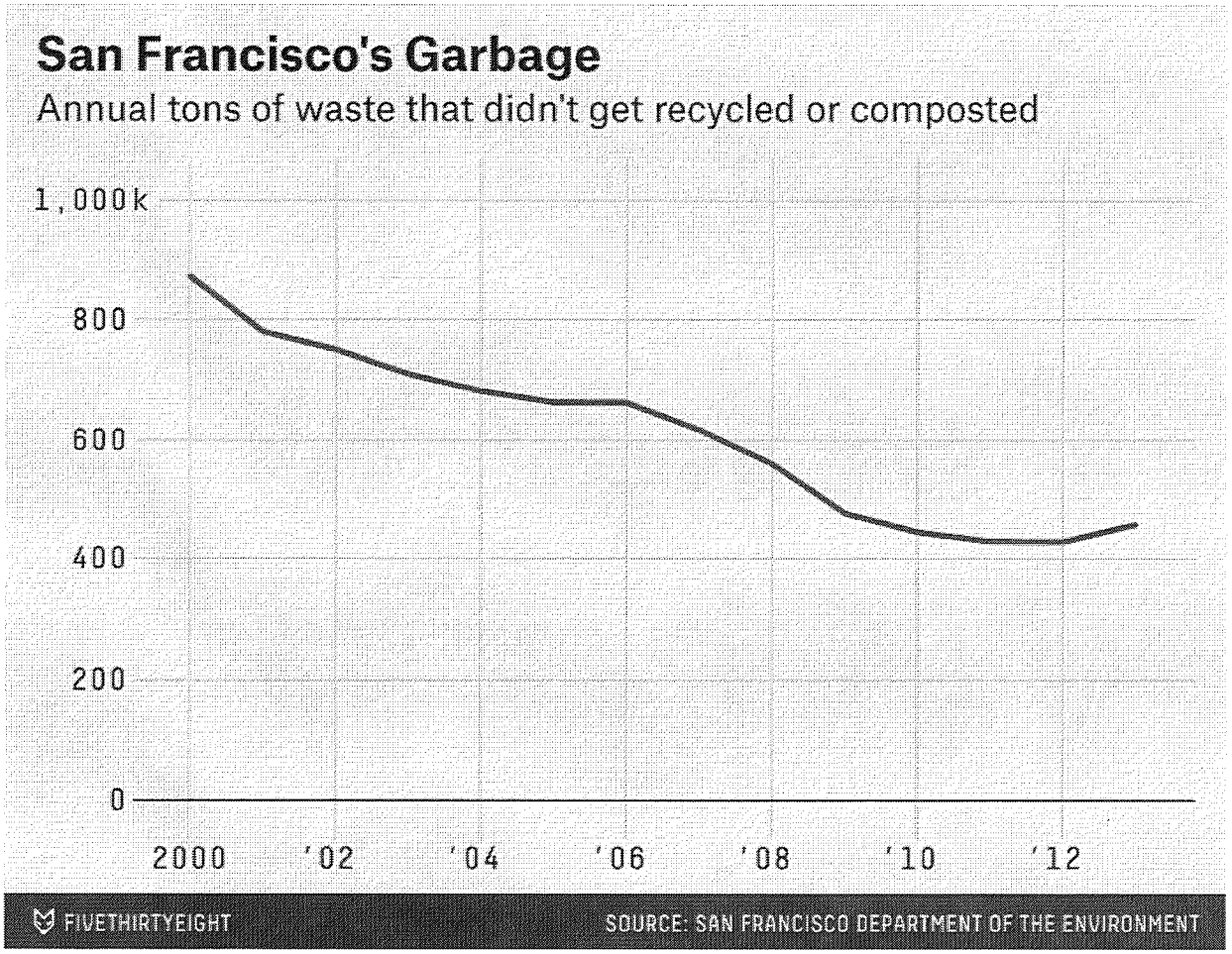
RECYCLING | 10:22 AM | SEP 4, 2014

San Francisco Stalls In Its Attempt To Go Trash-Free

By CARL BIALIK

San Francisco has gotten kudos from the global press for its efforts to eliminate waste. Mayor Ed Lee has boasted that his city diverts a greater percentage of its waste from the landfill than any other in the country. San Francisco's environment department, down the street from Twitter and sharing a building with Uber, features art made from reclaimed refuse and a five-bin system for its employees to minimize trash.

But sitting at his desk on a recent weekday, the city's zero waste manager, Robert Haley, pulled out a piece of paper that contained some troubling stats. After 12 years of consecutive declines, last year the city sent more tons of trash to landfills than it did in 2012: 456,764 tons, or about three pounds per day per resident.



That leaves San Francisco further from what was always an aspirational and probably unattainable goal of zero waste going to landfills or incinerators by 2020.

"I think it's extremely ambitious," Haley said of the goal. "It would be hard for me with a straight face to say, 'In six years, nothing is going to go to the landfill.' But we want to get as close as we can to that."

San Francisco's stall shows that a city's biggest obstacle to achieving big goals may be the people it serves. No matter how progressive the people are, how long they've had to assimilate the mission, how convenient it is to use the freely provided recycling and composting bins, how strong the law is that mandates composting, some city residents just keep tossing items into the trash that they shouldn't.

Even at the environment department's office, employees don't always get the sorting right. As Haley walked around the floor giving me a tour, he stopped to move an item that had been placed in the wrong bin.

"It's complicated," Haley said. "We used to say, back in the old days, recycling is simple. Now we're telling people they have to compost food scraps." Thousands of items are recyclable — too many to show them all in pictures on or near bins. "Recycling is more complicated. Composting is more complicated. It's a very complex world."

Haley thinks the city can cut its landfill totals in half through education and incentives. The owners of single-family homes pay more than 12 times as much each month for a 32-gallon trash bin as they do for recycling and composting bins. And they can save more than $9 per month by switching from a 32-gallon trash bin to a 20-gallon bin. "We don't need a lot of programs and policies here," he said. "We need a lot better participation."

To see the situation for myself, I walked about seven miles on an east-west route covering Potrero Hill, the Mission, the Castro, Cole Valley and Twin Peaks. Most of the oversize bins were for recycling, not trash. I counted over 230 bins of all sizes, the majority of them for composting and recycling. But 77 were trash bins. San Francisco must get that number to zero in six years to achieve its self-assigned mission.

The distraction of diversion rates

Many upbeat articles on the zero-waste project — and Lee himself — don't stress the tonnage numbers. Instead, they talk about the percentage of waste that is diverted from landfills. In San Francisco, it reached 80 percent in 2010, a figure that continues to be cited to this day.

The only trouble is, San Francisco was using an unconventional method of tallying its diversion rate, one that counted heavy construction waste such as rock and crushed concrete.

Many other cities don't count this category of construction waste in their diversion rates. Using that method, Samantha MacBride, assistant professor at the Baruch College School of Public Affairs in New York, calculated in an article that San Francisco's diversion rate is closer to 60 percent than 80 percent.

Recycling managers from other North American cities "have written to me to thank me for writing the piece because they get compared to San Francisco in an unreasonable way," MacBride said in a telephone interview. Others sent less friendly messages, questioning whether she opposed recycling. She said she has nothing against San Francisco. "One comes across as being an enemy of recycling, a naysayer" for questioning the figures, she said. "San Francisco has this kind of holy status."

Haley acknowledged that San Francisco included heavy construction debris in its diversion rate. He hasn't redone the calculation in four years, preferring to focus on reducing tonnage, which is, after all, the subject of the zero-waste target.

The 80 percent figure, Haley said, is "the kind of number that PR people and politicians like to say. I said, 'I would downplay that,' because eventually people will start coming at you" — as they have in recent articles in Bloomberg View and the San Francisco Bay Guardian questioning the stat.

It's probably inevitable that some cities would put a positive spin on their diversion numbers, given the expectations of the public and state oversight agencies. Mike Ewall, founder and director of Energy Justice Network, a Philadelphia-based environmental group, says some cities take credit for preventing waste they say would have happened without their interventions. Or they take credit for the interventions themselves. Maryland, for example, gives cities a boost of up to 5 percentage points for its educational programs; Oregon gives up to 6 percentage points for educational programs, promotion of home composting and other activities.[1]

"Comparing within California is tricky," Haley said. "Comparing with other states is really, really hard."

A whistleblower questions the stats

But some say San Francisco has gone beyond mere spin. Brian McVeigh, a former employee of Recology, the city's waste management contractor, accused the company in a whistleblower lawsuit of fudging some numbers in order to receive incentive bonuses. He said he once saw Recology employees jackhammer concrete at a company waste facility, then truck the concrete in to be recycled. "That was pretty brazen, right in everybody's face," he said in a telephone interview. He also claims to have seen people walk in with 10 cans and leave with a receipt for $500 in recycled goods, a fraud which he said "absolutely" affected the diversion numbers.

Such practices show that the zero-waste campaign "is a make-me-feel-good thing," McVeigh said. "We all want to feel good. ... There's good work being done. There's potential to do better."

In June, the jury in McVeigh's suit compelled Recology to repay the city $1.37 million that it undeservedly received as a bonus for meeting a diversion goal.

In a statement, Recology noted the jury cleared the company on four of five counts of false claims to the city, and of all 154 counts of false claims to the state. "We will be appealing the one verdict, as the facts simply do not support it," company spokesman Sam Singer said.

"Anytime someone accuses Recology or us of something, we take it really seriously," Haley said. He heard from jurors that many felt Recology wasn't sharing everything it could with the city. "I'm using that as way to get to Recology to be more forthcoming."

He's also assigning staff to go through court documents looking for anything worth following up. "We haven't found anything substantive so far," a spokeswoman said. Haley doubts the company would risk its monopoly over the city's permits, worth roughly $300 million in annual Recology revenue.[2]

Even if the 80 percent figure is accurate, San Francisco would still have 20 percent of the way to go — a figure that amounts to a large and growing pile. "On a recovery percentage basis, we do pretty well," Haley said. "On a pure generation and consumption basis, we don't." Of 34 European countries tracked by Eurostat, the European Commission's statistical arm, only Cyprus and Malta produced more landfilled or incinerated waste weight per resident than San Francisco did last year.[3]

Haley offered one reason why the city sent more tonnage to the landfill last year than it did the year before. He pointed out that the booming tech economy has made it tough to keep the numbers down. He says the pile at the landfill would have been even higher if not for the progress the city has made.

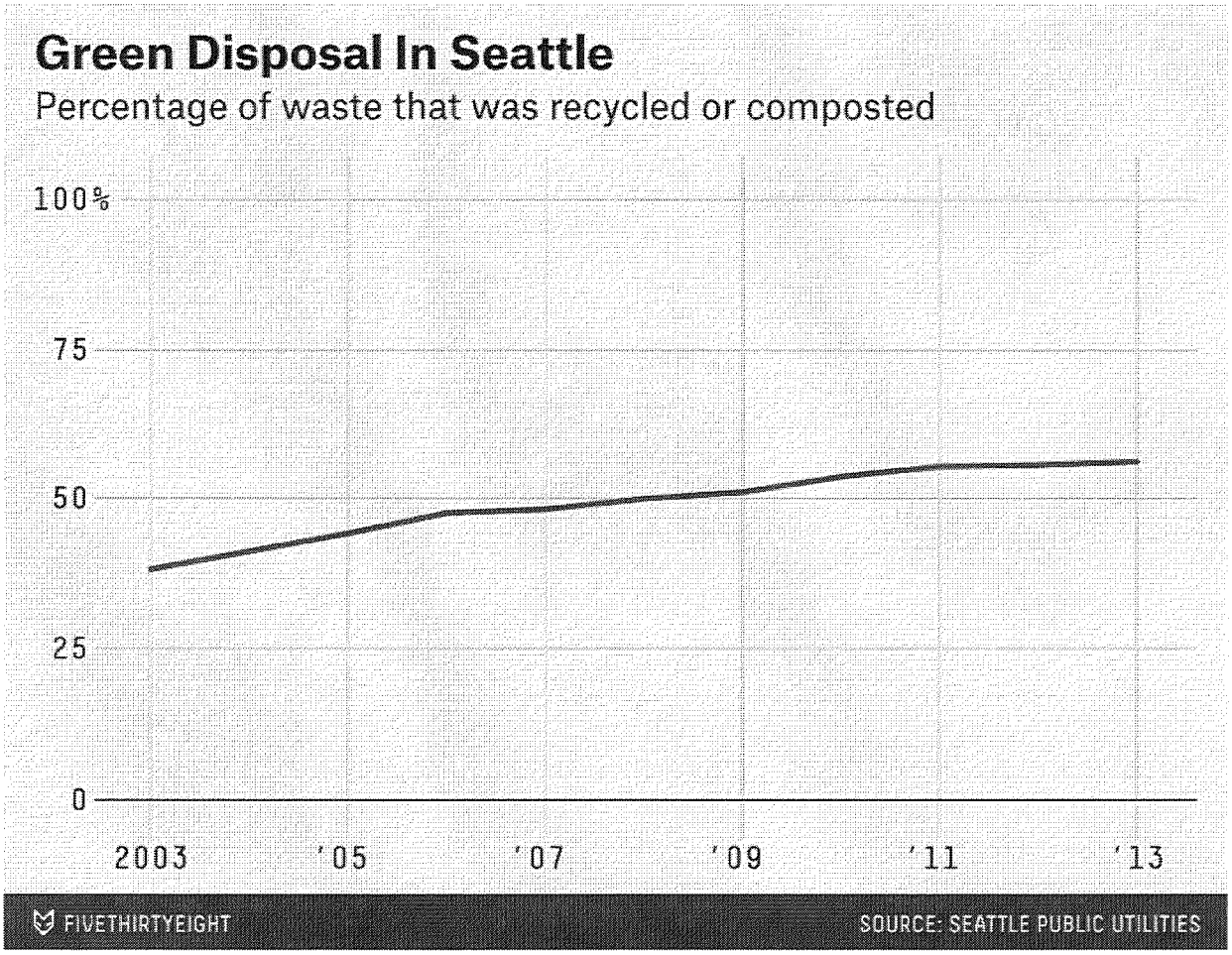
Still, he's disappointed. "It's the first time in many, many years that the number went the wrong way," he said.

Seattle's story

Other cities have used the "zero-waste" phrase to describe more attainable numerical targets. Seattle, for instance, is aiming for 60 percent of its waste to be diverted from landfills by next year, and 70 percent in eight years. Those percentages don't include heavy construction material, so if Seattle meets its goal it will be in line with San Francisco's success.

"We don't become students of other people's numbers," Timothy Croll, solid waste director for Seattle Public Utilities, said in a telephone interview, "but from what I read in [MacBride's] article, it doesn't seem to be apples-to-apples with how we do our numbers."[4]

Like San Francisco, Seattle is struggling to hold onto earlier gains. The city's diversion rate barely budged between 2011 and last year, rising just 0.8 percentage points to 56.2 percent.



Croll said Seattle needs bold rule changes to increase recycling and reach the target. "What changes the shape of these graphs is when you do something," he said. "We don't expect to magically change the path of the curve unless we do something, but we think we have some tricks up our sleeves."

In the middle of last decade, Seattle changed the curve by banning disposal of recyclables. Trashing compostables will be a fineable offense in January, if the city council approves it. "We have great hopes for our composting requirement," Croll said.[5]

Any further gains are unlikely to bring Seattle to absolute zero. "It's fair to say we view zero waste as an aspiration, just as a doctor might view zero illness as a goal," Croll said. "We may be stuck with a certain amount of waste, but it's not a good thing."

Portland, Ore., has its own zero-waste goal, but like Seattle it is aiming for a more attainable intermediate target. The city wants to get its diversion rate up to 75 percent by the end of next year — counting a 6 percentage point credit it gets from the state for education programs and for home composting. The city has been stuck at a recovery rate — its term for diversion rate — of between 67 percent and 71 percent since 2008. To reach the target, Portland must increase rates for recycling and composting by businesses, which have lagged residential rates, said Bruce Walker, manager of the city's solid waste and recycling program.

For many places, "zero waste" is a rallying cry and a branding exercise but not a real goal, Ewall said. Anything else would be naïve. "The idea of zero waste is not to get to absolute zero," he said. "It's to drive home the point: If you're not for zero waste, how much waste are you for? Don't just sit back and get satisfied once you hit a certain goal post."

The compost imperative

Recology's compost facility in Vacaville, California, halfway between San Francisco and Sacramento, shows composting's potential to drive waste down toward zero, and what it would take to achieve that potential. The Jepson Prairie Organics

composting facility is down the road from Travis Air Force Base, and adjacent to a Recology landfill. Waste trucks hauling solids bound for either destination crowd the farm-lined road, fittingly called Hay Road.

Jepson turns food scraps and yard trimmings into a fine powder of fertile, soil-boosting compost through a multistage, two-month process. The food arrives between 10 p.m. and 2 a.m., to avoid daytime heat and to suppress odor. I visited Jepson in the morning, so I saw how yard trimmings get processed. First they're fed into a grinder to reduce them to a manageable size. The pieces pass through a trommel — a screened, spinning cylinder that sorts them by size. The bigger pieces enter a conveyor belt, which feeds them past workers who pick out any trash that got mixed in. What they let pass gets ground once more, and then piled and exposed to the sun and to atmospheric microorganisms. Methane and other gases they emit get sucked out and can be used as fuel. The piles get turned and watered, to give the microorganisms sustenance as they break the nutrients into smaller pieces that can more effectively enrich soil.

This process normally plays out over several months. Like a cooking show where foods in different stages of a recipe have been pre-prepared, a tour of the Vacaville facility shows compost in each stage of development, in reverse order. As I entered the facility, the first thing I saw were piles of finished compost, alongside soil amendments — additives such as redwood sawdust — that Recology buys to mix in for custom blends designed to match the nutritional needs of customers' soil. Recology sells the finished products to local farmers for about $12 per cubic yard, and often the supply can't keep up with the demand, Recology spokesman Robert Reed said.

Part of Recology's supply problem is that roughly half of San Francisco's trash could be composted.[6] Put another way, most of what can be composted isn't going into green bins and getting to facilities like Jepson, reducing San Francisco's share of the potential environmental benefits from composting. Daily composting tonnage from San Francisco has increased by 62 percent since 2008, the year before composting became mandatory, but it has much further to go.

Another composting challenge stems from what goes in the green bins, but shouldn't. Two years ago, San Francisco banned from stores all plastic bags that can be used just once. But the city isn't stopping people with bags at the borders, and workers and visitors leave plenty behind, some of them in green bins. The statewide ban passed by California

lawmakers in August wouldn't take full effect until 2016, if Gov. Jerry Brown signs it. Jepson's trommel was lined with shredded plastic bags, and the piles of compost in their early stages contained bits of them. Eventually, most get filtered out, Reed said. Still, removal adds to the cost, and if any plastic gets left behind, it could contaminate the compost.

"Nothing is perfect on this planet," Reed said during the tour. "It's an imperfect business."

CORRECTION (Sept. 4, 2:27 p.m.): An earlier version if this post indicated that a statewide ban on plastic bags in California would take effect in 2016, but the legislation still awaits the governor's signature.

CORRECTION (Sept. 4, 6:32 p.m): Most of what can be composted in San Francisco isn't going into green bins and getting to facilities like Jepson. This post originally said most of what can be composted *is* going into green bins.

CORRECTION (Sept. 4, 11:54 p.m): An earlier version of this article misspelled the last name of Samantha MacBride, assistant professor at the Baruch College School of Public Affairs in New York.

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FOOTNOTES

FILED UNDER COMPOSTING, PORTLAND, RECYCLING, SAN FRANCISCO, SEATTLE, ZERO WASTE

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September 18, 2015

Subject: **Comments on the Proposed Negative Declaration for the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County**

We have reviewed the revised Final Negative Declaration (FND) dated July 20, 2015 for the agreement for disposal of San Francisco municipal solid waste (MSW) at the Recology Hay Road landfill in Solano County (hereinafter "Project" or "Disposal Agreement"). The proposed Project consists of an agreement to authorize the transportation and disposal of San Francisco's MSW to the existing Recology Hay Road Landfill located in unincorporated Solano County, at 6426 Hay Road, near State Route 113, southeast of Vacaville. MSW disposal under the Disposal Agreement would occur over a nine year period or until 3.4 million tons of MSW have been deposited in the Hay Road Landfill, whichever comes first. The City would have an option to renew the agreement for a period of six years, or until an additional 1.6 million tons of MSW have been deposited in the landfill, whichever comes first. The agreement would also limit the annual average number of round-trip truck trips transporting MSW to the landfill to fifty round-trip truck trips per day, based on a six-day work week. The MSW would be transported by long haul semi-trucks, primarily from the Recology San Francisco transfer station located at 501 Tunnel Avenue, with several additional trucks hauling residual wastes for disposal from Recology's Recycle Central facility, located at Pier 96 in San Francisco.

Our review concludes that the FND fails to adequately address the following issues, resulting in an underestimation of the significant impacts that the proposed Project may have on regional air quality and global climate change.

I. The FND fails to assess the Project's potential impacts in its entirety, only accounting for the net difference between current trips from the east end of the Bay Bridge to the Altamont Landfill and future trips to Recology's Hay Road Landfill.
II. The FND fails to adequately demonstrate consistency with greenhouse gas (GHG) reduction targets set forth in Assembly Bill 32 (AB32) and measures disclosed in the associated Scoping Plans. The FND states that the Project would comply with Assembly Bill 32 (AB32) through proposed fleet updates anticipated to occur in the future. There is, however, no actual commitment to these fleet updates. The FND also fails to support its assumption that fleet updates would result in lower effective GHG emissions.

III. The FND relies upon incorrect assumptions and values to estimate emissions from liquefied natural gas (LNG) trucks within Recology's current fleet. As a result, the criteria air pollutant and GHG emissions from these LNG-powered trucks are underestimated.
IV. The FND fails to account for the increased waste volumes that will occur in future years as San Francisco's population continues to grow. In fact, the FND erroneously assumes that over the lifetime of the proposed Project, the number of trips would remain consistent. However, our analysis demonstrates that while disposal rates have leveled off in recent years, San Francisco's population has steadily increased, which indicates that the amount of waste produced and hauled each year will also continue to grow.
V. In an effort to more accurately estimate the Project emissions, we conducted a preliminary supplemental analysis. The results of this analysis demonstrate that when correct LNG emission factors are used, even with possible future updates in Recology's truck fleet being taken into account, and increases in disposal volumes as a result of population growth are considered, the Project's GHG emissions in future years will exceed BAAQMD's threshold of 1,100 MT CO2e/year.[1]
VI. The FND fails to assess the local and cumulative impacts from proposed expansion and modernization plans, and increased management and/or diversion activities that would occur at the Tunnel Avenue facility in conjunction or closely associated with the proposed Project, and also including the cumulative impact of increased intensity of operations at the Tunnel Avenue transfer facility associated with the consolidation of operations (closure of Pier 96 facility and consolidation at Tunnel Avenue) and from increased MSW due to population growth.
VII. The FND fails to demonstrate compliance with the 2030 GHG reduction targets set forth by Executive Order B-30-15.

The FND relies on unrealistic assumptions, rather than facts, to determine the Project's impact on regional air quality and global climate change. When the Project's impacts are evaluated using hard facts and indisputable data, there is substantial evidence supporting a fair argument that the Project will have a potentially significant impact on air quality and climate change. As a result, an Environmental Impact Report (EIR) should be prepared to adequately assess Project significance.

I. Failure to Evaluate Greenhouse Gas and Air Quality Impacts of Entire Project

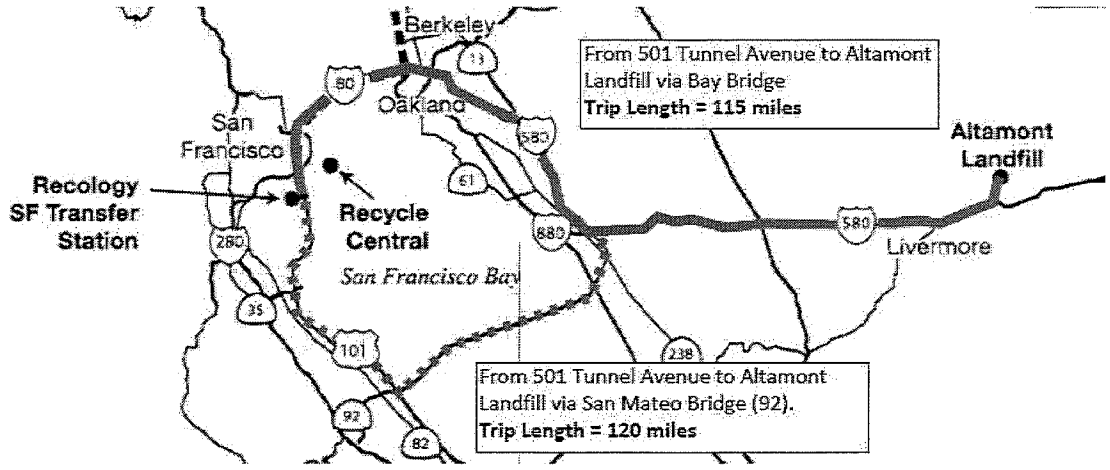
The FND evaluates the greenhouse gas (GHG) and criteria air pollutant impacts from the proposed Project by calculating the net difference in emissions resulting from municipal solid waste (MSW) trucks operating under the existing agreement with Recology for disposal of MSW at Waste Management's Altamont Landfill and the proposed new agreement and Project for transport and disposal at Recology's Hay Road Landfill. The FND treats the Project as a change in the existing agreement; however, this assumption is incorrect, because the Project would require an entirely separate contract with a different landfill.

1http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 2-2

The Project would be implemented by an agreement between the City and County of San Francisco and Recology to change the disposal site for San Francisco's MSW from the current Altamont Landfill in Livermore, California to the Recology Hay Road Landfill near Vacaville (p. 1). The new Hay Road agreement would be implemented upon termination of the Altamont contract. The Hay Road replacement MSW disposal landfill is located in a different part of the greater Bay Area, in a different county, a different air basin and district. The landfills operate under different permits and different ownership. It is neither an extension nor a modification to an existing operation or program. As a result, for CEQA purposes, the new agreement should not be treated as a change to the existing agreement; but rather, the new agreement and associated impacts should be treated as an entirely new Project.

In addition, the FND erroneously assumes all MSW trucks currently and in the future will follow the same route from the Tunnel Avenue facility over the Bay Bridge, where the routes would diverge under the new agreement. In fact, according to the May 21 Planning Commission Negative Declaration Appeal Hearing and information provided to us by Waste Management, a significant number of MSW trucks leave the Tunnel Avenue facility and head South on U.S. 101, and take the San Mateo Bridge (92) toward the Altamont Landfill when traffic on US 101 or north of the Bay Bridge is heavy. There is an incentive to take this option, as the San Mateo Bridge route only adds approximately five miles to the trip length, and is faster than the Bay Bridge route during peak traffic hours (see table and graph below).

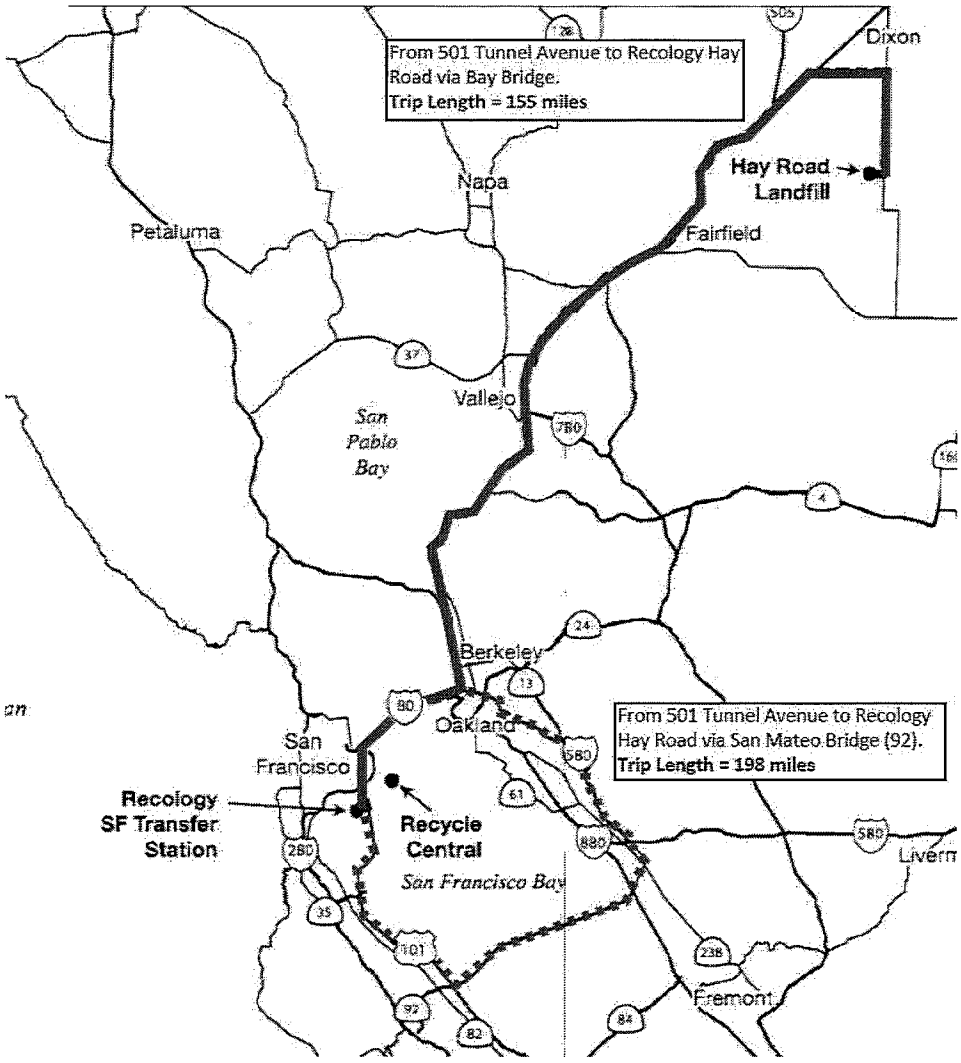
Current Routes	Trip Length (miles)
From Tunnel Avenue Facility to Altamont Landfill via Bay Bridge	115
From Tunnel Avenue Facility to Altamont Landfill San Mateo Bridge (92)	120
Increase in Trip Length	**5**



Under the proposed Project, however, there is no incentive to take this alternate route during peak traffic hours. The Bay Bridge route has a trip length of approximately 155 miles, where as the San Mateo

Bridge route has a trip length of approximately 198 miles, resulting in an increase of about 43 miles round-trip (see table and graph below).

Route	Trip Length (miles)
From Tunnel Avenue Facility to Recology Hay Road via Bay Bridge	155
From Tunnel Avenue Facility to Recology Hay Road via San Mateo Bridge (92)	198
Increase in Trip Length	**43**



As a result, the new landfill location would increase emissions along the Bay Bridge corridor when compared to current routes used to transport waste to the Altamont Landfill. This shift in transportation routes between existing and future conditions further supports the importance of

treating the Project as an entirely new agreement, rather than treating it as a change in existing conditions. The routes currently taken will not reflect the future routes that will be taken to Recology Hay Road. As a result, the Project may have a significant effect on traffic along the Bay Bridge corridor, thus resulting in an increase in emissions along this route.

The FND fails to address these existing trips in its baseline or account for the change in routes to Hay Road. For all of these reasons, the analysis significantly underestimates the GHG emissions and vehicle miles travelled (VMT) under the proposed new agreement. Under the circumstances, including City and State policies with respect to reduction of VMT and reduction of GHG emissions, the more appropriate analysis would address the entirety of the VMT under the new agreement as a new project, rather than a modification of an existing project or agreement. Regardless, as described in more detail below, there is substantial evidence supporting a fair argument that the Project, even when only analyzing the "net new" VMT, as defined and assumed in the FND, would be expected to have a significant impact on GHG and criteria air pollutant emissions. As a result, an EIR is required to properly evaluate Project emissions.

The FND's "Air Quality and GHG Technical Report" (Technical Report) summarizes the proposed Project's total operational emissions (see excerpt below from p. 15). The values highlighted in blue are the Project's emissions emitted within the San Francisco Bay Area Air Basin, the values highlighted in yellow are the emissions emitted within the Sacramento Valley Air Basin, and the values highlighted in purple are the total emissions from the Project from both air basins.

Proposed San Francisco Bay Area Air Basin					
pounds/day:					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
7.1	24.88	96.45	23,671.95	6.48	2.51
tons/year (except for CO2e, which is in MT/year):					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
1.11	3.89	15.09	3,357.18	1.01	0.39
Proposed Sacramento Valley Air Basin					
pounds/day:					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
1.14	4.01	15.54	3,812.34	1.05	0.41
tons/year (except for CO2e, which is in MT/year):					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
0.18	0.63	2.43	540.67	0.16	0.06
Total Proposed (San Francisco and Sacramento Combined)					
pounds/day:					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
8.2	28.9	112.0	27,484.3	7.5	2.9
tons/year (except for CO2e, which is in MT/year):					
ROG	**CO**	**NOX**	**CO_2e**	**PM10**	**PM2.5**
1.3	4.5	17.5	3,897.9	1.2	0.5

If the Project's emissions within the San Francisco Air Basin are compared to the significance thresholds specified in the FND (see excerpt below), the Project's NO_x emissions would result in a significant impact (p. 49).

TABLE AQ-1
AIR QUALITY THRESHOLDS OF SIGNIFICANCE

Pollutant	Operational Thresholds for use within the SFBAAB	
	Average Daily Emissions (lbs. /day)	Maximum Annual Emissions (tons/year)
ROG	54	10[a]
NO_x	54	10[a]
PM_{10}	82[b]	15
$PM_{2.5}$	54	10
Fugitive Dust	Not Applicable	
CO	CO concentrations of 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average) as estimated by roadway vehicle volumes exceeding 44,000 vehicles per hour at any intersection.	

[a] Also applicable within the SVAB.
[b] YSAQMD significance threshold for PM10 is 80 lbs. /day.
SOURCE: BAAQMD, 2009; YSAQMD, 2007.

Furthermore, if the Project's greenhouse gas (GHG) emissions of 3,898 metric tons of carbon dioxide equivalents per year (MT CO_2e/year) within the San Francisco Air Basin are compared to BAAQMD's GHG threshold of 1,100 MT CO_2e/year, the emissions would result in a significant impact. This is clear and substantial evidence of a fair argument of significant environmental effects requiring preparation of an EIR under CEQA. An updated air quality evaluation must be prepared as part of an environmental impact report to evaluate these impacts, to address alternatives, and to implement mitigation measures to address NO_x and GHG emissions.

II. Failure to Demonstrate Consistency with AB32 GHG Reduction Targets

The FND fails to adequately assess the Project's impacts on global climate change. The FND claims that the Project will be compliant with the reduction measures set forth by AB32 and the associated Scoping Plans, yet fails to actually demonstrate this consistency. The FND gives the following reason as to how the Project will be consistent with AB32:

> "Most of Recology's transfer fleet currently runs on B-20 biodiesel (that is, diesel fuel that is derived from 20 percent vegetable or animal fats and 80 percent petroleum). Currently, eleven trucks in the fleet run on liquefied natural gas (LNG), and Recology is in the process of phasing in additional transfer vehicles that run on LNG or compressed natural gas (CNG). All of these fuels produce lower GHG emissions than conventional diesel. The proposed project is therefore consistent with the Scoping Plan Update's emphasis on reducing GHG emissions from heavy-duty trucks" (p. 70).

This explanation of how the Project will demonstrate consistency with AB32 is both inadequate and incorrect for a couple of reasons. First, the FND states that Recology is in the process of updating its current truck fleet, but there is no contractual commitment to the proposed future fleet updates. Subsequent comments made by Recology and the Department of the Environment to the representatives of the Planning Commission and to a Sub-Committee of the Board of Supervisors were similarly unsupported by any actual contract commitment.

Second, the FND states that phasing in additional transfer vehicles that run on LNG or CNG will reduce GHG emissions. This assumption, however, is not supported. LNG/CNG-powered Class 8 haul trucks may produce less CO_2 emissions compared to diesel-powered trucks, but may actually increase CH_4 and N_2O emissions. As a result, the claim that the proposed fleet updates to LNG/CNG-powered trucks will reduce GHG emissions cannot be used as a way to demonstrate consistency with AB32, until it is verified by supporting documentation and further analysis.

Failure to Demonstrate Contractual Commitment to Proposed Fleet Updates

The FND and Disposal Agreement fail to demonstrate a contractual commitment to the proposed fleet updates. Even if we were to assume that a portion of Recology's trucks will be replaced with LNG/CNG-powered trucks in the future, the FND assumes, yet fails to assess the impacts that this switch would have on global climate change. Alternatively fueled trucks do not necessarily emit less GHG emissions when compared to B20 diesel and new technology diesel trucks. Due to these reasons, the Project is actually inconsistent with "the Scoping Plan Update's emphasis on reducing GHG emissions from heavy-duty trucks," and as a result, is inconsistent with the GHG reduction targets set forth by AB32, and may result in a significant impact on global climate change.

The FND only analyzes the impacts that "the truck hauling fleet currently used to transport San Francisco waste" will have, because Recology has made no actual commitment to upgrade its fleet in any particular manner or schedule (p. 1). Absent such commitment, the FND cannot demonstrate consistency with AB32 and the associated Scoping Plans by claiming that the fleet will be updated in future years.

The only information discussing the specific fleet updates was provided at the May 21 Planning Commission Negative Declaration Appeal Hearing. Recology staff disclosed the following regarding the anticipated updates to Recology's fleet:

> "And more importantly on the future of our fleet, what's in front of you right now shows 11 LNG trucks with the balance being biodiesel. We have on order, coming to our facility by November of this year, another 12 LNG trucks and another 6 the year after that, which will get us to full capacity to handle all the MSW for San Francisco Honda LNG trucks. And also to that fact, the trailers on those trucks will be able to handle 26 tons per load, rather than what you're looking at right now of 24.5, which will also help on the truck tonnage. I have staff here from multiple parts of our company in terms of operations if there are other questions to be asked" (May 21, 2015 Hearing Transcript at p. 11).

Therefore, by November 2015, Recology's fleet is anticipated to include 23 LNG trucks, and by sometime in 2016, Recology's fleet is anticipated to include 29 LNG trucks. Of these 29 LNG trucks, 18 will purportedly have a hauling capacity of 26 tons per load. But, as explained below, this statement regarding larger trucks is suspect due to weight constraints on heavier LNG/CNG vehicles.

Even though we are provided with some information on the proposed fleet updates, neither the Disposal Agreement nor the FND reflect any commitment to these updates, nor do they identify these updates as a part of the proposed Project. Since Recology has entered into the Disposal Agreement based upon its current fleet, with little evidence suggesting otherwise, the FND cannot use these proposed fleet changes as a way to demonstrate consistency with AB32. Further, even if these fleet updates were certain, until the FND actually analyzes the change in emissions that the proposed fleet updates would result in, the FND cannot use these updates by themselves to demonstrate compliance with the reduction targets and measures set forth by AB32, the Scoping Plan, and the Update to the Scoping Plan.

The absence of terms in the Disposal Agreement to update its fleet or to otherwise comply with the reduction targets and measures set forth by AB32, the Scoping Plan, and the Update to the Scoping Plan is, however, itself evidence of a fair argument that the Project may result in a potentially significant impact to global climate change. As a result, an EIR should be prepared to adequately assess the potentially significant impacts that the Project's GHG emissions may have on the environment.

Potential Increase in CH_4 and N_2O Emissions Associated with CNG/LNG Class 8 Trucks Not Addressed

Even if we were to assume that the updates to the fleet were included in the terms of the proposed agreement(s), the change in GHG emissions, from diesel to liquefied natural gas (LNG) or compressed natural gas (CNG), was not adequately addressed in the FND. The FND claims that all of the fuels within Recology's truck fleet would "produce lower GHG emissions than conventional diesel" (p. 70). While this may be true, the FND fails to actually estimate the GHG emission reductions that these alternatively fueled trucks would result in. Furthermore, evidence suggests that while LNG/CNG- powered Class 8 heavy-duty trucks may reduce carbon dioxide (CO_2) emissions, they increase other GHG emissions like methane (CH_4) and nitrous oxide (N_2O). Lastly, CNG/LNG Class 8 trucks typically have a lower fuel economy than their diesel-powered counterpart, which means that they will use more fuel and fill up more often.

Greenhouse gas emissions are produced by mobile sources as fossil fuels are burned. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are emitted directly through the combustion of fossil fuels in different types of mobile equipment, including heavy-duty trucks, and contribute to the effects of global climate change. According to the Environmental Protection Agency's (EPA) *Direct Emissions from Mobile Combustion Sources* guidance document, "for most transportation modes, N_2O and CH_4 emissions comprise a relatively small proportion of overall transportation related GHG emissions (approximately 2% combined). However, for gasoline fueled highway vehicles...N_2O and CH_4 could be a

more significant (approximately 5%) portion of total GHG emissions. N_2O and CH_4 emissions are likely to be an even higher percentage of total GHG emissions from alternate fuel vehicles."[2]

According to this report, diesel heavy-duty vehicles emit 0.0051 grams of CH_4 per mile, and 0.0048 grams of N_2O per mile (see excerpt below).[3]

Vehicle Type/Control Technology	Emission Factor (g/mile) N_2O	Emission Factor (g/mile) CH_4	Emission Factor (g/km) N_2O	Emission Factor (g/km) CH_4
Diesel Heavy-Duty Trucks				
Advanced	0.0048	0.0051	0.0030	0.0032
Moderate	0.0048	0.0051	0.0030	0.0032
Uncontrolled	0.0048	0.0051	0.0030	0.0032

LNG/CNG-powered heavy-duty vehicles, on the other hand, emit higher rates of CH_4 and N_2O emissions compared to diesel-powered trucks, emitting 1.966 grams of CH_4 per mile, and 0.175 grams of N_2O per mile (see excerpt below).[4]

Vehicle Type/Fuel Type	Emission Factor (g/mile) N_2O	Emission Factor (g/mile) CH_4	Emission Factor (g/km) N_2O	Emission Factor (g/km) CH_4
Light-duty Vehicles				
Methanol	0.067	0.018	0.042	0.011
CNG	0.050	0.737	0.031	0.458
LPG	0.067	0.037	0.042	0.023
Ethanol	0.067	0.055	0.042	0.034
Heavy-duty Vehicles				
Methanol	0.175	0.066	0.109	0.041
CNG	0.175	1.966	0.109	1.222
LNG	0.175	1.966	0.109	1.222
LPG	0.175	0.066	0.109	0.041
Ethanol	0.175	0.197	0.109	0.122
Buses				
Methanol	0.175	0.066	0.109	0.041
CNG	0.175	1.966	0.109	1.222
Ethanol	0.175	0.197	0.109	0.122

Use of alternatively fueled vehicles may result in a reduction in tail pipe GHG emissions; however, an EIR is required to address the reports that other sources of GHG emissions, i.e., methane and nitrous oxide, would increase.

The EPA has found that alternatively fueled vehicles result in a significant increase in N_2O and CH_4 emissions.[5] Furthermore, according to a study conducted by the Carnegie Mellon University

2 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, p. 2
3 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, Table 2
4 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, Table A-7

Department of Engineering and Public Policy, none of the "natural gas pathways, CNG, LNG, and F-T liquids, achieves any emission reductions for Class 8 trucks compared to conventional diesel."[6] In fact, the study found that "of the Class 8 trucks, CNG emits lowest among natural gas pathways, but it cannot reduce emissions (0–3% higher for three types of Class 8 trucks) on average compared with conventional diesel. LNG...liquids increase GHG emissions by 2–34% for Class 8 trucks when compared to the baseline."[78] Furthermore, while natural gas combustion produces less CO_2 than diesel, concerns have been raised about the effects of methane emissions.[9] Therefore, even though LNG-powered heavy duty trucks emit less CO_2 emissions, the effect on climate change and resultant contribution to GHG emissions from methane and nitrous oxide should be addressed in an EIR in light of the these reports.

Increased Weight, Lower Payloads and Reduced Mileage

Retrofitting a Class 8 heavy-duty truck with a LNG/CNG engine can increase a truck's vehicle weight by as much as 2,000 pounds. Trucks fueled by CNG require heavy tanks for on-board storage of CNG under pressure; as a result, outfitting a heavy-duty truck to run on natural gas can add as much as 2,000 pounds to a vehicle's weight.[10] The additional weight these CNG trucks incur due to their fuel storage systems means they cannot carry as heavy payloads compared to diesel trucks. One study demonstrated that Class 8 tractor trucks using LNG with 160 diesel gallon equivalents (DGE) (2 tanks) will add over 1,000 lbs of extra weight compared to diesel. Similarly, Class 8 tractor trucks using CNG with 140 DGE (5 tanks) will add over 2,000 lbs of extra weight compared to diesel.[11]

Therefore, the proposed increase in payload from the current 24.5 tons to 26 tons that was indicated in the May 21 Hearing conflicts with current evidence, which suggests that the switch from diesel to CNG trucks will actually result in a decrease in the truck's payload, not an increase.

Not only are LNG/CNG-powered heavy-duty trucks heavier, but they are also less efficient than their diesel-powered counterparts. One gallon of LNG has the same energy density as 1.7 gallons of diesel, and one gallon of CNG has the same energy density as 3.8 gallons of diesel.[12] According to the EPA's *Efficient Use of Natural Gas Based Fuels in Heavy-Duty Engines* presentation, CNG-powered Class 8 trucks are typically 15 percent less efficient than diesel trucks.[13]

Assuming that updates to Recology's fleet were to be implemented during the term of the Disposal Agreement, all of these factors would need to be considered before the FND could determine that the addition of LNG/CNG-powered Class 8 heavy-duty trucks would result in a reduction of GHG emissions compared to diesel-powered trucks. Substantial evidence indicates that alternatively fueled trucks

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5 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, p. 2
6 http://pubs.acs.org/doi/pdf/10.1021/es5052759, Abstract, pp. 1
7 http://pubs.acs.org/doi/pdf/10.1021/es5052759
8 http://www.greencarcongress.com/2015/05/20150527-cmu.html
9 http://www.actresearch.net/wp-content/uploads/2013/04/ACT_NGP.pdf
10 http://ngvtoday.org/2014/09/03/bill-to-eliminate-ngv-weight-penalty-introduced-in-u-s-senate/
11 http://www.actresearch.net/wp-content/uploads/2013/04/ACT_NGP.pdf
12 http://www.westport.com/file_library/files/webinar/2013-06-19_CNGandLNG.pdf
13 http://energy.gov/sites/prod/files/2014/03/f8/deer12_kargul.pdf

increase CH_4 and N_2O emissions, increase the truck's total vehicle weight by as much as 2,000 pounds, and are less energy efficient compared to diesel fuel. Each and all of these factors have yet to be addressed, and present substantial evidence and a fair argument of a potential increase in GHG emissions, even assuming that Recology will phase in LNG/CNG-powered trucks in the future. Until an additional, detailed analysis is prepared, the FND cannot assume that updates to the fleet will reduce GHG emissions, thus demonstrating the Project's compliance with AB32. Therefore, because the Project results in a substantial increase in total vehicle miles traveled, there is a fair argument that the Project may increase GHG emissions, even with the addition of alternatively fueled trucks, and as a result, may not actually be consistent with GHG reduction targets set forth by AB32 and the associated Scoping Plans. An updated evaluation should be prepared as part of an EIR to adequately address the changes in Recology's truck fleet in future years, as well as evaluate the potential increase in GHG emissions that could occur.

III. Underestimation of Liquefied Natural Gas Air Pollutant Emissions

The values used to estimate emissions from LNG-powered trucks in the FND are incorrect, and greatly underestimate the GHG emissions that would be released from these vehicles. When the correct emission factors are used to estimate Project emissions, there is a fair argument that the Project will result in a potentially significant impact on regional air quality and global climate change. As a result, an updated air quality analysis should be prepared in an EIR to adequately estimate the Project's emissions.

Recology's current truck fleet is made up of 51 vehicles, 40 of which are B20 biodiesel-powered, and 11 of which are powered by liquefied natural gas (LNG) (p. 55). According to the FND, "Project air emissions were calculated using emission rates provided by ARB's EMFAC2011" model (p. 55). However, because the EMFAC2011 model does not provide biodiesel adjustment factors or LNG emission factors, alternative ARB documents, which disclose this information, were relied upon (p. 55). The FND's January 2015 "Air Quality and GHG Technical Report" (Technical Report) discloses the LNG emission factors used to estimate emissions, as well as the sources relied upon to derive these values. A review of these values and associated reports indicates, as explained below, that the emission factors used to estimate LNG-powered truck emissions in the FND are incorrect, and greatly underestimate the emissions that would be released from these vehicles.

Failure to Use Class 8 LNG Truck Emission Factors

As noted above, 11 of the 50 trucks that currently make up Recology's fleet run on liquefied natural gas (LNG) (p. 10). Because EMFAC2011 does not provide LNG emissions rates, the FND's Technical Report relies on emission factors[14] from CARB's *Methods to Find the Cost-Effectiveness of Funding Air Quality Projects for Evaluating Motor Vehicle Registration Fee Projects and CMAQ Projects*[15] (p. 3).

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14 For modeling purposes, however, the FND's Technical Report assumed that vehicles powered with compressed natural gas (CNG) and LNG would have the same emission rates in terms of grams per mile, since they are only slightly different forms of natural gas (p. 3).

15 http://myairdistrict.com/emfac_2010.pdf

However, according to the FND, "Recology owns and operates its own transfer truck fleet," which are "classified as heavy-heavy duty tractor-trailer type trucks (Class 8 trucks)" (p. 6). The truck fleet is an average of six years old, so emission factors for vehicle model year (MY) 2008 were used (p. 55). Therefore, emission factors for MY 2008 Class 8, alternatively fueled trucks should have been used to estimate emissions from Recology's LNG trucks. However, this is not the case.

The FND's Technical Report uses the following emission factors: 2.1 grams per mile (g/mi) for nitrogen oxides (NO_x), 0.018 g/mi for particulate matter with a diameter of 10 micrometers or less (PM_{10}), and 0.018 g/mi for fine particulate matter with a diameter less than 2.5 micrometers ($PM_{2.5}$) (Technical Report, Table 1, p. 4). These values, identified in the Technical Report represent emissions from buses and trucks (MY 2009 and earlier), not Class 8 trucks (see excerpt below).[16] Instead, the FND should have used the following emission factors to accurately estimate the LNG-powered truck emissions: 3.5 g/mi for NO_x, 0.029 g/mi for PM_{10}, and 0.029 g/mi for $PM_{2.5}$.

New Cleaner Vehicle Purchases or Re-powers (Typically Alternative-Fueled Vehicles)

Vehicle Type	Gross Vehicle Weight Rating (lb	MY	Engine Certificatio Emission Rates (g/bhp-hr) NOx	PM10	Conversion Factors+ (bhp-hr/mi)	Emission Factors (g/mi) NOx	PM10
Urban transit buses	>33,000	<=2009	1.2	0.01	4.0	4.8	0.04
		2010+	0.2	0.01	4.0	0.8	0.04
Buses and trucks	14,001 – 33,000	<=2009	1.2	0.01	1.8	2.1	0.018
		2010+	0.2	0.01	1.8	0.4	0.018
Class 8 trucks	>33,000	<=2009	1.2	0.01	2.9	3.5	0.029
		2010+	0.2	0.01	2.9	0.6	0.029

The emission factors used in the FND to estimate NO_x, PM_{10}, and $PM_{2.5}$ emissions released by Recology's Class 8 LNG-powered trucks resulted in a great underestimation of emissions. Based on this error, there is a fair argument that when correct emission factors are used to estimate emissions from Class 8 LNG-powered trucks, the Project may result in a potentially significant impact. Therefore, an Environmental Impact Report should be prepared to adequately assess the Project's impact on regional air quality.

Use of Incorrect LNG Truck CH_4 and N_2O Emission Factors

EMFAC2011 does not provide diesel emission rates for methane (CH_4) or nitrous oxide (N_2O). As a result, the FND relies on emission factors from CARB's *Local Government Operations Protocol (LGOP) for the Quantification and Reporting of Greenhouse Gas Emissions Inventories* [17](Technical Report, p. 3). According to this report, diesel heavy-duty vehicles have a CH_4 emission factor of 0.0051 g/mi, and a N_2O emission factor of 0.0048 g/mi (see excerpt below).[18]

Diesel Heavy-Duty Vehicles		
All Model Years	0.0048	0.0051

16 http://myairdistrict.com/emfac_2010.pdf, Table 5, pp. 8.
17 http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf
18 http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf, p. 216

These emission factors, however, only apply to diesel-powered heavy-duty trucks. According to the Environmental Protection Agency's (EPA) *Direct Emissions from Mobile Combustion Sources* guidance document, "for most transportation modes, N_2O and CH_4 emissions comprise a relatively small proportion of overall transportation related GHG emissions (approximately 2% combined). However, for gasoline fueled highway vehicles (e.g., passenger cars and light trucks) N_2O and CH_4 could be a more significant (approximately 5%) portion of total GHG emissions. N_2O and CH_4 emissions are likely to be an even higher percentage of total GHG emissions from alternate fuel vehicles."[19] Therefore, by using diesel-powered, heavy duty truck emission factors, and applying these values to LNG-powered trucks, the FND is greatly underestimating the greenhouse gas (GHG) emissions released from these trucks. Rather, an emission factor of 0.175 g/mi for N_2O, and an emission factor of 1.966 g/mi for CH_4 should be used.[20]

There is therefore a fair argument that when correct emission factors are used to estimate N_2O and CH_4 emissions from Class 8 LNG-powered trucks, the Project may result in a potentially significant impact. Therefore, an EIR should be prepared to adequately assess the Project's impact on regional air quality.

Fuel Economy of LNG Trucks Unsubstantiated

According to the FND, Recology's LNG trucks achieve a 3.71 miles per gallon (mpg) rate, which they used to estimate total CO_2 emissions (Technical Report, p. 3-4). This mileage, however, is not supported by documentation or justified in any way. The only reference provided in FND's Technical Report states that the value is "provided by Erin Merrill, Recology's Environmental Planning Manager" (p. 4). As a result, there is no way to verify if this mile per gallon rate is correct.

In an effort to verify this value, we attempted to find other reports that supported this 3.71 mpg rate. The San Francisco Department of Public Works (SFDPW) provides information on the current refuse collection and disposal rates in the City of San Francisco, and provides specific rates and assumptions used to calculate these rates for Recology San Francisco.[21] According to the 2013 *Recology San Francisco Rate Schedules* report, the average miles per gallon typically seen in Recology's LNG-powered trucks is 2.8 mpg (see excerpt below).[22]

	Actual		Projection	Rate Application
Description	RY 2011	RY 2012	RY 2013	RY 2014
Total Tons to Altamont	372,751	370,100	366,912	352,773
LNG Fuel Calculation:				
Total Number of Long Haul LNG Trucks	6	3	-	5
Tons hauled by LNG Trucks	49,549	28,384	0	36,630
LNG Tons Per Load	24.35	24.48	0.00	24.42
Loads	2,035	1,159	0	1,500
Roundtrip Miles per Load	110	110	0.00	110.00
Total Miles	223,833	127,541	0	165,000
Average MPG	2.8	2.8	0.0	2.8

19 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, p. 2
20 http://www.epa.gov/climateleadership/documents/resources/mobilesource_guidance.pdf, Table A-7
21 http://sfdpw.org/index.aspx?page=737
22 http://www.sfdpw.org/modules/showdocument.aspx?documentid=3038, p. 53/61

This mile per gallon rate, used by Recology San Francisco to determine the cost of LNG fuel, is approximately 25 percent lower than the 3.71 mpg rate disclosed in the FND. The FND's assumed 3.71 mpg rate is not supported by additional documentation nor is it justified in any way. A lower mpg rate would be expected to result in significantly higher emissions due to the need to consume more fuel. As a result, there is a fair argument of a substantial effect, thus requiring the preparation of an EIR.

IV. Failure to Evaluate Effects of Population Growth on Future Disposal Volumes

The Project's criteria air pollutant and GHG emissions are underestimated, due to incorrect assumptions made in the FND and associated "Air Quality and GHG Technical Report" (Technical Report). Specifically, the air quality analysis does not factor in any additional haul truck trips that would reasonably be expected to occur in future years as San Francisco's population and subsequent waste volume continue to grow. When the Project's air quality and GHG impacts are evaluated with the inclusion of this population growth, there is further substantial evidence supporting a fair argument that the Project will have a potentially significant impact on air quality and climate change. As a result, an EIR should be prepared to adequately assess Project significance.

In support of appellants appeal to the Planning Commission, we analyzed the anticipated population growth in San Francisco using published data from the Demographic Research Unit of the California Department of Finance. The Demographic Research Unit is designated as the single official source of demographic data for state planning. This department provides publicly available reports on population estimates from cities, counties, and the state according to year. It also provides population projections for future years. We utilized data from the following reports to determine the City of San Francisco's past, present, and future population: (1) "E-1 Cities, Counties, and the State Population Estimates with Annual Percent Change – January 1, 2014 and 2015;"[23] (2) "E-4 Population Estimates for Cities, Counties, and the State, 2011-2015, with 2010 Census Benchmark;"[24] and (3) "P-3 Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010 – 2060."[25] The values from these reports are summarized in the table below.

Reporting Year	Population
2010	**805,235**
2011	808,768
2012	816,446
2013	828,440
2014	834,903
2015	845,602
2016	857,106
2017	865,639
2018	874,210
2019	882,831

23 http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php
24 http://www.dof.ca.gov/research/demographic/reports/estimates/e-4/2011-20/view.php
25 http://www.dof.ca.gov/research/demographic/reports/projections/P-3/

2020	**891,493**
2021	899,992
2022	908,342
2023	916,398
2024	924,332
2025	932,109
2026	939,662
2027	947,118
2028	954,231
2029	960,992
2030	**967,405**

In an effort to further verify the accuracy of the values set forth by the California Department of Finance, for this updated Report we also analyzed information from the Association of Bay Area Governments (ABAG) taken from San Francisco's General Plan. The "2014 Housing Element" of San Francisco's General Plan relies on population projections provided by ABAG to determine the future increase in San Francisco's population, households, and employment.[26] ABAG estimates that San Francisco's population in 2020 will increase by 10.6 percent compared to 2010 population estimates, and will increase by another 10.3 percent by 2030, compared to 2020 population estimates (see excerpt below).[27]

	2000	2010	2020*	2030*	2040*
Total Population	776,733	805,235	890,400	981,800	1,085,700
Population Change	52,774	28,502	85,165	91,400	103,900
% Population Change	7.3%	3.7%	10.6%	10.3%	10.6%
Household Population	756,976	780,971	863,800	952,500	1,051,100
% HH Population Change	8.2%	3.2%	10.6%	10.3%	10.4%
Households	329,700	345,811	379,600	413,370	447,350
Households Change	24,116	16,111	33,789	33,770	33,980
% Households Change	7.9%	4.9%	9.8%	8.9%	8.2%

The population projections provided by ABAG are consistent with the population projections provided by the Department of Finance (see table below).

Department of Finance Projections			ABAG and General Plan Projections		
Reporting Year	**Population**	**Percent Increase**	**Reporting Year**	**Population**	**Percent Increase**
2010	805,235	-	2010	805,235	-
2020	891,493	10.7%	2020	890,400	10.6%
2030	967,405	8.5%	2030	981,800	10.3%

26 http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf
27 http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf, p. 1.4

In fact, the values relied upon to determine population growth in our May 21, 2015 letter submitted with the appeal actually underestimate the predicted increase in San Francisco's population compared to the projections set forth by ABAG, with an estimated 8.5 percent increase in population from 2020 to 2030 compared to ABAG's estimated 10.3 percent increase. Furthermore, the Department of Finance's predicted increase in population from 2010 to 2020 of 10.7 percent is consistent with ABAG's projected 10.6 percent increase. The California Department of Finance, ABAG, and San Francisco's General Plan all estimate an approximate 10 percent increase in San Francisco's population from 2010 to 2020. Furthermore, the Department of Finance underestimates San Francisco's projected 2030 population compared to the values set forth by ABAG and San Francisco's General Plan. This demonstrates that the population projections relied upon in the May 21, 2015 letter submitted with the appeal are not only consistent with the projections set forth by ABAG and San Francisco's General Plan, but are also conservative compared to the 2030 population projections set forth by ABAG. As a result, the analysis in our May 21, 2015 letter submitted with the appeal actually presents a conservative estimate of San Francisco's population growth, and confirms evidence previously presented of population growth assumptions.

According to the FND and associated Technical Report, the agreement would occur over a nine year period or until 3.4 million tons of MSW have been deposited in the Hay Road Landfill, whichever comes first, with the City having an option to extend the Disposal Agreement for a period of six years, or until an additional 1.6 million tons of MSW have been deposited in the landfill, whichever comes first (FND p. 1). Assuming that the proposed agreement would be renewed for a period of six years, the Project would operate for a total of 15 years, from about 2016 until 2030. Even with the projections above, with an estimated 20 percent increase in population from 2010 to 2030, the FND inexplicably assumes that the number of daily truck trips and the total waste volume would stay the same during the entire estimated 15 year possible term of the Disposal Agreement, i.e., 50 truck trips per day (p. 9). The notion that the total waste volume, and consequent daily truck trips, will remain unchanged for up to 15 years is unrealistic. Even with increased diversion efforts for which no evidence has been submitted in the record for this FND, the waste volume produced by San Francisco is going to increase. In fact, as explained below, the record shows that in recent years per capita disposal rates have actually increased, while diversion rates have flattened out.

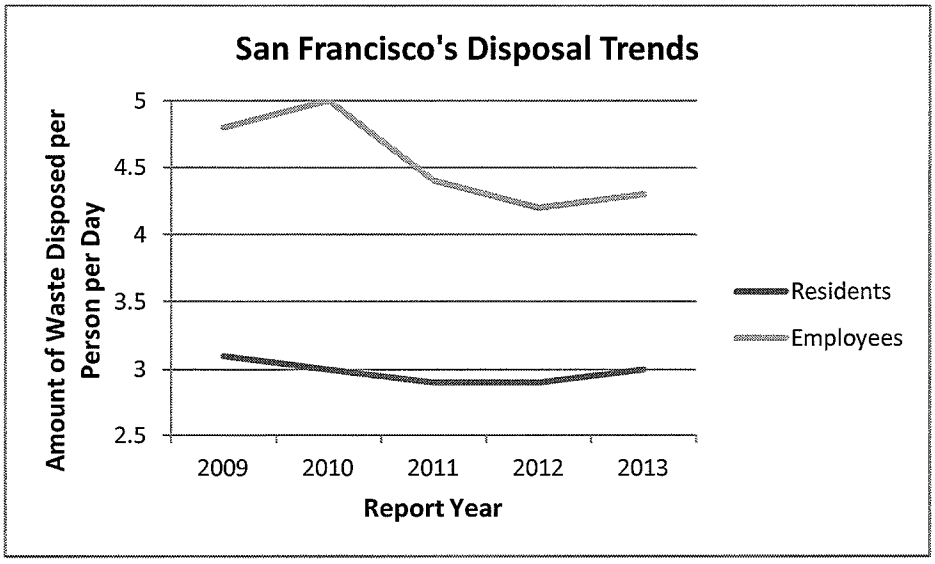
Per Capita Disposal Rates Have Remained Unchanged Over Past Five Years

The FND assumes that the total waste volume and the number of daily and annual truck trips would not increase during the Project's entire duration of disposal of up to 5 million and an estimated 15 years (p. 1a, 9). The FND assumes that based upon unexplained and undocumented increased diversion rates that will occur in future years, disposal volumes will not increase with population. Without any supporting evidence, the FND goes further and states that it anticipates that the total disposal volume will most likely decrease in future years (p. 17). There is no evidence to support this unsubstantiated assumption and the evidence submitted indicates that there will more likely be an increase in MSW rates and volumes.

Although San Francisco has made great strides in reducing the total amount of waste disposed in landfills by increasing recycling and composting efforts, during the past five years[28], San Francisco's per capita disposal rate has remained unchanged. According to the California Department of Resources Recycling and Recovery's (CalRecycle) *Jurisdiction Diversion/Disposal Rate Summary (2007 – Current)* report for the City and County of San Francisco, from 2009 – 2013 San Francisco demonstrated a residential per capita disposal rate of approximately 3.0 pounds per person per day (see table and graph below).[29]

Report Year	Per Capita Disposal Rate Residents*	Per Capita Disposal Rate Employees*
2009	3.1	4.8
2010	3	5
2011	2.9	4.4
2012	2.9	4.2
2013	3	4.3

* Disposal rates in units of pounds per person per day (PPD)



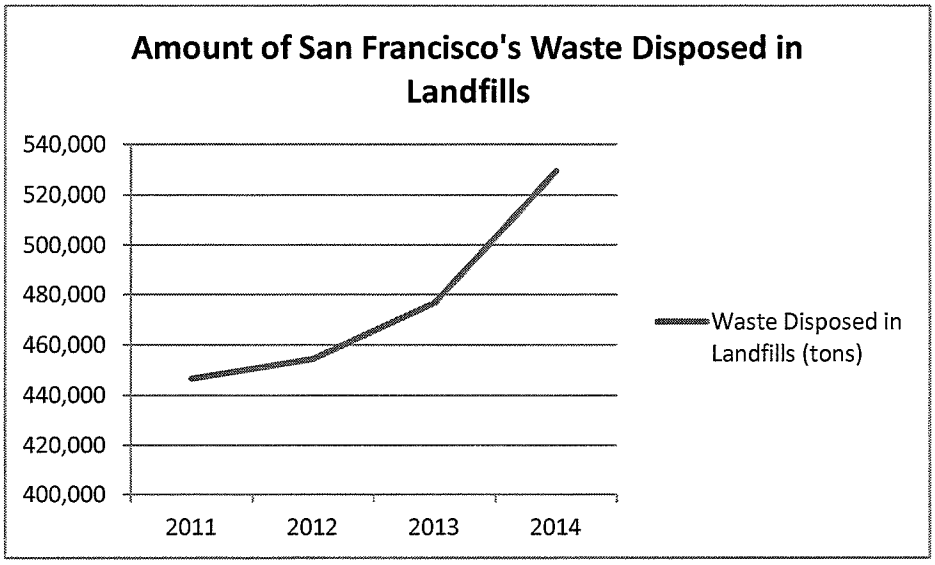
While per capita disposal rates have leveled off in recent years, the amount of waste disposed of by the City of San Francisco has steadily increased. According to CalRecycle's *Multi-Year Countywide Origin*

28 Past five years that disposal data was publicly available.

29http://www.calrecycle.ca.gov/LGCentral/reports/Viewer.aspx?P=JurisdictionID%3d438%26ReportName%3dDPGraphPopEmpNumbers%26ShowParameters%3dfalse%26AllowNullParameters%3dfalse

Summary report for the County of San Francisco, from 2011 – 2014 the total amount of San Francisco's MSW disposed of in landfills has steadily increased (see table and graph below).[30]

Report Year	Amount of San Francisco's MSW Disposed of in Landfills (tons)
2011	446,635
2012	454,570
2013	476,424
2014	529,474



Because the per capita disposal rates have remained unchanged over the past five years, this increase in waste disposal can only be attributed to San Francisco's population growth.

The disposal information provided by CalRecycle demonstrates that while residential disposal rates have leveled off, San Francisco's total waste volumes have steadily increased, which can only be attributed to San Francisco's steady population growth that has occurred in recent years. By failing to account for San Francisco's future population growth within the air quality and greenhouse gas analyses, the FND does not fully assess the actual, real life impacts of the proposed Project.

The FND's air quality analysis fails to account for the additional haul truck trips that would reasonably be expected to occur in future years as San Francisco's population and subsequent waste volume continue to grow. The FND attempts to justify this omission by claiming that the implementation of additional diversion programs will offset, if not reduce, the amount of waste disposed of at the landfill. The FND

30http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=ReportName%3dExtEdrsMultiYrCountyWide%26CountyID%3d38

fails, however, to disclose any information on what, if any, additional waste diversion programs are planned, how feasible and reliable these proposed waste reductions actually might be, and how Recology might implement the proposed reductions. In fact, the FND repeatedly states that there will be no changes to Recology's transfer station and other San Francisco facilities and operations (FND at cover page and pages 4, 9, 10, 11 and 17), before providing a two paragraph summary of Recology's pending plans to substantially modify those facilities and operations (at page 23), but without any recognition or analysis of the increased intensity of those operations, consolidation of operations, and potential cumulative impact of those plans during the approximately 15 year term of the Disposal Agreement. There is also no analysis that would support the assumption, as stated at the Planning Commission and at the Board Sub-Committee hearing, that future diversion programs could offset increased waste volumes associated with population growth.

Our analysis, based on current disposal trends, demonstrates that while per capita disposal rates have leveled off in recent years, San Francisco's population has steadily increased, which indicates that the amount of waste produced and hauled each year will also continue to grow. When the Project's air quality and GHG impacts are evaluated with the inclusion of this population growth, there is substantial evidence supporting a fair argument that the Project will have a potentially significant impact on air quality and climate change.

The FND cannot ignore these facts and assume there will be no changes in disposal rates, volumes or truck trips. The environmental analysis must demonstrate how Recology will ensure that it can meet the Disposal Agreement's limitations on annual trips, in light of this evidence, and how the City's MSW will be handled over the estimated 15 year term of this Agreement if it does not. As a result, an EIR should be prepared to adequately assess Project significance.

The evidence demonstrates that while disposal rates have leveled off in recent years, San Francisco's population has steadily increased, which indicates that the amount of waste produced and hauled each year will also continue to grow. As a result, there is substantial evidence to support a fair argument that the Project will have a potentially significant impact on regional air quality and climate change. An EIR should be prepared to adequately assess the impacts that the Project may have, using current data and facts rather than unsubstantiated assumption.

V. Analysis Demonstrates Significant Impact from Incremental Emissions

In an effort to more accurately estimate the Project emissions, we conducted a preliminary supplemental analysis. The results of this analysis demonstrate that when correct LNG emission factors are used, future possible updates in Recology's truck fleet are taken into account, and unmitigated increases in disposal volumes as a result of population growth are considered, the Project's GHG emissions in future years will exceed BAAQMD's threshold of 1,100 MT CO2e/year.[31]

31http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 2-2

We estimated the Project's operational emissions for two scenarios: (1) assuming that the current truck fleet (40 biodiesel trucks and 11 LNG trucks) will remain the same for the entire 15 year duration; and (2) assuming that the proposed changes in the fleet, as indicated by Recology at the May 21 hearing, would occur. The table below provides a summary of each scenario's proposed fleet composition.

Scenario	# of LNG Trucks	# of B20 Trucks	Total # of Trucks	Hauling Capacity (tons)	Daily Waste Hauled (tons/day)
1	11	40	51	24.5	1,248
2	29	19	48	26	1,248

It should be noted that the truck composition for Scenario 2 is based on Recology's comment at the May 21 hearing, as well as the anticipated daily waste volume disclosed in the FND. According to the testimony of Recology's representative, within the next two years, Recology will have a total of 29 LNG trucks. He further stated that these 29 LNG trucks "will get us to full capacity to handle all the MSW for San Francisco Honda LNG trucks." However, even if we were to assume that all 29 LNG trucks would have a hauling capacity of 26 tons per load, an additional 19 trucks with a 26 ton/load hauling capacity would have to be included in Recology's fleet to match the daily waste hauled by the trucks in Recology's current fleet. Therefore, for purposes of this analysis we conservatively assumed that with these proposed additions, Recology's future fleet would be composed of 29 LNG trucks and 19 biodiesel trucks, all with the hauling capacity of 26 tons per load. It should be noted, however, that the payload from a biodiesel truck to a LNG truck would most likely decrease due to the additional weight that LNG engines incur (anywhere from a 1,500 – 2,000 pound increase). Therefore, the emissions estimated in this scenario are highly conservative, and would most likely be greater than what is estimated in this analysis.

ABAG's population projections only provide estimates for 2010, 2020, 2030, and 2040. According to the FND, the proposed Project would start in 2016 and operate for a period of up to 15 years (p. 4). Therefore, it can be assumed that the Project would operate from about 2016 until 2030. Therefore, we limited our analysis to 2020 and 2030, which represent operational years with corresponding ABAG population estimates.

Furthermore, San Francisco's per capita rate, as discussed above, does not necessarily represent the per capita disposal rate that would occur at the landfill. For example, in 2010 San Francisco disposed of 455,331.84 tons of waste. Of that waste, approximately 383,104 tons was disposed of at Altamont.[32] Therefore, in an effort to determine the future disposal volume that would most likely occur at the Hay Road Landfill, exclusively, we estimated a residential per capita disposal rate (lbs/person/day) for the Altamont Landfill, using the same methods demonstrated by CalRecycle. We then took this per capita disposal rate, and applied it to the 2020 and 2030 ABAG population projections to estimate the waste volumes during these years. The results, for each scenario, are summarized in the tables below.

32http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2010%26ReportName%3dReportEDRSJurisDisposalByFacility

Scenario 1: Current Truck Fleet			
	2010	2020	2030
Total Population	805,235	890,400	981,800
Waste Disposal Rate (lbs/person/day)	2.6	2.6	2.6
Waste Disposed of at Altamont/Hay Road (tons)	383,104	423,623	467,108
Hauling Capacity (tons/truck)	24.5	24.5	24.5
Trips per Day	**50**	**55**	**61**

Scenario 2: Updated Truck Fleet			
	2010	2020	2030
Total Population	805,235	890,400	981,800
Waste Disposal Rate (lbs/person/day)	2.6	2.6	2.6
Waste Disposed of at Altamont/Hay Road (tons)	383,104	423,623	467,108
Hauling Capacity (tons/truck)	24.5	26	26
Trips per Day	**50**	**52**	**57**

As you can see for Scenario 1, in 2020, the daily trips increase from 50 trips per day to 55 trips per day, and increase to 61 trips per day in 2030. Furthermore, for Scenario 2, the daily trips increase from 50 trips per day (current conditions) to 52 trips per day, and then increase to 57 trips per day in 2030. Each additional truck trip per day results in roughly 313 additional truck trips annually, assuming a six day work week. (These trips would exceed the limitations on the Disposal Agreement.) As a result, the emissions from these additional truck trips have the ability to make a significant impact on the regional air quality within Sacramento Valley and the Bay Area.

The FND air quality and GHG Technical Report provides the emission rates, adjustment factors, formulas, and other parameters used to calculate the proposed and existing Project's emissions (p. 15 - 25). We used these values, as well as the corrected LNG emission rates, and applied them to the estimated daily haul trips for each year. We then calculated the net difference between the existing Project emissions and the proposed Project emissions for each scenario. The results of our calculations are summarized in the table below, and the calculation details can be found in **Attachment A**.

Scenario 1: Current Truck Fleet Emissions									
Scenario	**Operational Year**	**Daily Hauling Trips**	**Project Condition per Air Basin**	***Tons per Year (CO_2e in Metric Tons per Year):***					
				ROG	**CO**	**NO_x**	**CO_2e**	**PM_{10}**	**$PM_{2.5}$**
1	2020	55	Proposed - Sacramento	0.20	0.69	2.81	675	0.19	0.07
		55	Proposed - SF	1.23	4.31	17.45	4,202	1.18	0.46
		50	Existing - SF (2014)	0.89	2.98	12.98	3,324	0.90	0.34
		-	**Total Net Difference**	**0.53**	**2.01**	**7.27**	**1,554**	**0.47**	**0.19**
1	2030	61	Proposed - Sacramento	0.22	0.76	3.10	745	0.21	0.08
		61	Proposed - SF	1.35	4.75	19.24	4,634	1.30	0.51
		50	Existing - SF (2014)	0.89	2.98	12.98	3,324	0.90	0.34
		-	**Total Net Difference**	**0.68**	**2.53**	**9.35**	**2,054**	**0.61**	**0.24**

The results from Scenario 1, assuming that the current truck fleet remains the same, just taking into account population growth, we find that in 2020 and in 2030, the GHG emissions from waste transportation will exceed BAAQMD's threshold of 1,100 MT CO_2e/yr [33] by 450 MT CO_2e/yr and by 950 MT CO_2e/yr, respectively.

Scenario 2: Updated Truck Fleet Emissions									
Scenario	**Operational Year**	**Daily Hauling Trips**	**Project Condition per Air Basin**	***Tons per Year (CO_2e in Metric Tons per Year):***					
				ROG	**CO**	**NO_x**	**CO_2e**	**PM_{10}**	**$PM_{2.5}$**
2	2020	52	Proposed - Sacramento	0.25	0.31	1.88	658	0.16	0.06
		52	Proposed - SF	1.53	1.93	11.69	4,092	0.99	0.36
		50	Existing - SF (2014)	1.23	1.42	9.39	3,409	0.81	0.29
		-	**Total Net Difference**	**0.54**	**0.82**	**4.19**	**1,341**	**0.34**	**0.13**
2	2030	57	Proposed - Sacramento	0.27	0.34	2.08	726	0.18	0.06
		57	Proposed - SF	1.68	2.12	12.89	4,512	1.09	0.39
		50	Existing - SF (2014)	1.23	1.42	9.39	3,409	0.81	0.29
		-	**Total Net Difference**	**0.72**	**1.05**	**5.58**	**1,828**	**0.46**	**0.17**

The results from Scenario 2, assuming that the current truck fleet will undergo updates in future years, taking into account population growth, we find that in 2020 and in 2030, the GHG emissions from waste transportation will exceed BAAQMD's threshold of 1,100 MT CO_2e/yr by 240 MT CO_2e/yr and by 730 MT CO_2e/yr, respectively.

When the correct emission factors are applied, and population growth is taken into account, we find that under both scenarios, the Project would exceed BAAQMD's GHG significance threshold, resulting in

33http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx p. 2-2

a significant impact. Even under the most conservative scenario (Scenario 2), where we assumed that every truck within the fleet would have a payload of 26 tons, the GHG emissions from waste transport decreased a little, yet still resulted in a potentially significant impact.

This is clear and substantial evidence of a fair argument of significant environmental effects requiring preparation of an EIR under CEQA. An updated air quality evaluation must be prepared as part of an environmental impact report to evaluate these impacts, to address alternatives, and to implement mitigation measures to address the Project's significant GHG emissions.

VI. Failure to Assess Impacts from Increased Activities at Tunnel Avenue Facility

The FND fails to assess the impacts that would occur at the 501 Tunnel Avenue Transfer Facility due to comprehensive expansion and modernization plans and increased waste management and diversion activities. According to the FND:

> "Recology is planning a comprehensive redevelopment of its Tunnel and Beatty site. The proposal involves replacement of most of the buildings currently on-site with new recycling and resource recovery facilities, maintenance facilities, administrative offices, and supporting operations buildings. The proposal would focus on resource recovery rather than transfer and disposal, and would serve as a model of sustainable infrastructure. The City of Brisbane is the CEQA lead agency for this project. No environmental documents have yet been issued for this project. This project would not increase, and could reduce the quantity of MSW transported to the Hay Road Landfill" (p. 23).

The proposal at Tunnel Avenue includes the closure of the Pier 96 facility and the consolidation of those operations at the expanded Tunnel Avenue Facility. Although the proposed expansion of the Tunnel Avenue facility could affect the quantity of MSW transported to the Hay Road Landfill, the cumulative impacts on this modified facility and operations, including increased waste volumes and vehicle operations due to population growth, is not assessed in the FND. The City of San Francisco recently approved a Negative Declaration for the 501 Tunnel Avenue ("West Wing") Project. The West Wing Project proposed to construct a new building that would serve as an addition to the existing facility and would accommodate additional waste processing activities and equipment to support enhanced recovery of recyclable and compostable materials. The proposed building would provide approximately 14,000 square feet of space, including approximately 11,500 square feet on the main level and approximately 2,500 square feet on the lower level.[34]

Operation of the Tunnel Avenue Transfer Station is a required facility under the proposed Landfill Disposal Agreement (p. 17). Therefore, the extent to which the expansion of the Tunnel Avenue Facility might contribute to Recology's ability or plans to manage additional MSW under the Disposal Agreement should have been considered as part of the FND, and the environmental effects of the proposed modernization and expansion place should be considered in this CEQA analysis. Failure to do

34 http://sfmea.sfplanning.org/2013.0850E_501%20Tunnel%20Avenue_FMND.pdf

so constitutes impermissible piecemealing of the environmental analysis to avoid a significant effect. An EIR should be prepared to adequately assess the effects that the Project will have on the Tunnel Avenue Transfer Station, and to adequately assess the effects the proposed expansion of the Tunnel Avenue Facility will have on Recology's operations under the Disposal Agreement.

VII. Failure to Comply With Executive Order B-30-15 Reduction Targets

The reliance on a 15 percent below Business-As-Usual (BAU) emission threshold of significance is also fundamentally flawed because it is inconsistent with, and fails to take into account, the revised, more ambitious GHG reduction goals set by Governor Brown by Executive Order B-30-15. Governor Brown recently issued an executive order to establish an even more ambitious GHG reduction target. Executive Order B-30-15[35] requires emissions reductions above those mandated by AB 32 to reduce GHG emissions 40 percent below their 1990 levels by 2030. 1990 statewide GHG emissions are estimated to be approximately 431 million $MTCO_2e$ ($MMTCO_2e$).[36] Therefore, by 2030 California will be required to reduce statewide emissions by 172 $MMTCO_2e$ (431 x 40%), which results in a statewide limit on GHG emissions of 259 $MMTCO_2e$. 2020 "business-as-usual" levels are estimated to be approximately 509 $MMTCO_2e$.[37] Therefore, in order to successfully reach the 2030 statewide goal of 259 $MMTCO_2e$, California would have to reduce its emissions by 49 percent below the "business-as-usual" levels.

This 49 percent reduction target should be considered as a threshold of significance against which to measure Project impacts. Because the Project site will be in operation past 2020 and into 2030, the 2030 goals are applicable to any evaluation of the Project's impacts. A DEIR should be prepared to demonstrate the Project's compliance with these more aggressive measures specified in Executive Order B-30-15. Specifically, the Project should demonstrate, at a minimum, a reduction of 49 percent below "business-as-usual" levels. It should be noted, however, that this reduction percentage is applicable to statewide emissions. Because the Project emissions do not meet this 49 percent below BAU goal, and because the Project will result in vehicle miles travelled (VMT) that exceed regional averages for disposal of MSW, and, in fact, VMT that substantially exceed current regional standards and the existing VMT levels for disposal at the Altamont Landfill, a fair argument exists that the Project's GHG emissions are significant.

VIII. Conclusion

The FND fails to adequately address multiple issues, resulting in an underestimation of the significant impacts that the proposed Project may have on regional air quality and global climate change. First, the FND fails to assess the Project's potential impacts in its entirety, only accounting for the net difference between current trips from the east end of the Bay Bridge to the Altamont Landfill and future trips to Recology's Hay Road Landfill. Second, the FND fails to adequately demonstrate consistency with greenhouse gas (GHG) reduction targets set forth in Assembly Bill 32 (AB32) and measures disclosed in

35 http://gov.ca.gov/news.php?id=18938
36 http://www.arb.ca.gov/cc/inventory/data/bau.htm
37 http://energyinnovation.org/wp-content/uploads/2015/04/CA_CapReport_Mar2015.pdf

the associated Scoping Plans, as well as fails to demonstrate compliance with the 2030 GHG reduction targets set forth by Executive Order B-30-15. The FND claims that the Project would comply with Assembly Bill 32 (AB32) through proposed fleet updates anticipated to occur in the future, but the FND provides no evidence or additional analyses that any such future updates would effectively reduce GHG emissions, and, as noted, there is no actual commitment to these fleet updates. Third, the FND fails to assess both the clearly related impacts of the Tunnel Avenue Transfer Station proposed expansion and modernization.

Finally, the FND fails to adequately assess the pollutant emissions from the Project, relying on faulty assumptions that underestimate the Project's air quality and GHG impacts. Specifically, the FND relies upon incorrect emission factors to estimate emissions from liquefied natural gas (LNG) trucks within Recology's current fleet, fails to account for the increased waste volumes that will occur in future years as San Francisco's population continues to grow, and fails to assess the change in emissions that would occur as a result of updates to Recology's fleet.

In an effort to more accurately estimate the Project emissions, we conducted a preliminary supplemental analysis. The results of this analysis demonstrate that when correct LNG emission factors are used, future updates in Recology's truck fleet are taken into account, and increases in disposal volumes as a result of population growth are considered, the Project's GHG emissions in future years will exceed BAAQMD's threshold of 1,100 MT CO_2e/year.[38]

In sum, the FND relies on unrealistic assumptions, rather than facts, to determine the Project's impact on regional air quality and global climate change. When the Project's impacts are evaluated using hard facts and indisputable data, there is substantial evidence supporting a fair argument that the Project will have a potentially significant impact on air quality and climate change. As a result, an EIR should be prepared to adequately assess Project significance.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Jessie Jaeger

38http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 2-2

GLADSTEIN, NEANDROSS & ASSOCIATES
CLEAN TRANSPORTATION & ENERGY CONSULTANTS

May 20, 2015

Ms. Sarah B. Jones, Environmental Review Officer
Mr. Paul Maltzer, Senior Environmental Planner
City & County of San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

RE: Comments on the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County (Case No. 2014.0653E)

Dear Ms. Jones and Mr. Maltzer:

Gladstein, Neandross & Associates (GNA) has reviewed the Air Quality and GHG Technical Report ("Report") associated with the Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County Project. The focus of our review was the greenhouse gas (GHG) emissions that the Report estimated would result from the change in City of San Francisco landfill deposits from its current site in Altamont, CA to the proposed Hay Road Facility in Solano County.

Our review of the Report concludes that:

- The GHG emission calculations use incompatible reference data and fail to utilize CARB's own low carbon fuel standard (LCFS) carbon intensity factors;
- The incremental GHG emissions associated with this landfill change will result in additional GHG emissions that rise above the BAAQMD's Threshold of Significance (1,100 MT CO_2e/yr).

GHG Calculations Fail to Utilize LCFS Carbon Intensity Factors

The Report provides an overall introduction to the proposed project, the impacted air quality management districts, health risks, and analysis of criteria and greenhouse gas emissions. The Report then details the various references that were used in calculating the criteria and GHG emissions before providing a complete appendix of emissions calculations.

GNA replicated to vehicle usage and GHG emission calculations to confirm agreement with the report's analysis. During this phase, we found a number of issues with the vehicle usage calculations and the variety of references used to construct the emission calculations.

The issues were as follows:

- In the report calculations, the number of round trips per day decrease, but the text of the report states that the "number of daily trips would remain unchanged under the proposed project."

- The existing and proposed liquefied natural gas (LNG) tractors are stated to have a fuel economy of 3.71 miles per gallon. The report then uses this fuel economy to calculate CO2 emissions assuming that the figure represents 3.71 miles *per gallon of LNG*. GNA believes that the 3.71 figure is very likely the fuel economy per diesel gallon equivalent (DGE). Because LNG contains less energy per volumetric gallon, 1.71 gallons of LNG are required to replace a gallon of diesel fuel. This means that the adjusted fuel economy for these trucks is approximately 2.17 miles per LNG gallon. Adjusting for this change in the calculations increases the base scenario by nearly 100 MT of CO_2e per year alone.

- The report used EMFAC CO2 emission factors for the diesel vehicles, but because EMFAC does not have corresponding CO2 emission factors for LNG, the report defers to CARB's Local Government Operations Protocol (LGOP) for its LNG emission factors. LGOP emission factors are based on fuel consumption (grams/gallon), not mileage (grams/mile) like the EMFAC factors. Because of this difference, the report calculated diesel CO2 estimates based on miles driven using one model and LNG CO2 estimates based on calculated fuel consumption (using a likely incorrect LNG fuel consumption number).

    - LGOP does contain fuel consumption based diesel CO2 emission factors. Given that the report already contains estimated mileage and fuel economy figures from Recology for both diesel and LNG trucks, the report could have used the LGOP factors consistently for both fuels. GNA ran the calculations using the LGOP over the existing and proposed scenarios and the results were significantly different than the combined EMFAC/LGOP method.

- The last, but potentially the most significant, shortcoming of the report's GHG analysis is that it fails to use CARB's own well documented LCFS methodology for calculating the *well-to-wheels* (WTW) GHG emissions. The LCFS is a critical component of California's landmark AB32 program and is the method that CARB is using itself to calculate GHG emission reductions across California's on-road transportation system.

    - The EMFAC emission factors used in the report consider only the tailpipe CO2 emissions from the diesel vehicles and fail to consider all of the *upstream* GHG emissions associated with getting that fuel into the vehicles.
    - Given that GHG emissions are a global issue, CARB has chosen to address all upstream and vehicle tailpipe emissions of CO2, methane (CH_4), and nitrous oxide (N_2O) in its LCFS carbon intensity factors. These factors are published for nearly every on-road transportation fuel, including diesel and LNG.

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- GNA calculated the GHG emissions associated with the existing and proposed landfill delivery scenarios using the LCFS carbon intensity values based on the mileages and fuel economy factors provided by Recology for its vehicles. Accounting for the WTW GHG emissions from the transfer trucks in question leads to a much more accurate picture of the global impact of the existing and proposed operations.

Table 1 below shows the calculations for the three different methods discussed above. The first method replicates the Report's original findings. The second method uses the LGOP for all diesel and LNG GHG calculations. The third method uses the LCFS for all GHG calculations.

Table 1 - GHG Emissions by Calculation Method

						Greenhouse Gas Emissions (MT CO2e/year)		
						Original EMFAC/LGOP Method	Modified LGOP Method	LCFS Method
Existing Scenario (Altamont)	# Trucks	RT/Day	Mi/Year	Fuel Economy (mi/DGE)	*DGE/Year*	CO2e (MT/year)	CO2e (MT/year)	CO2e (MT/year)
Diesel (B20) Tractors	40	39.2	1,410,553	4.36	323,173	2,477	3,305	4,259
LNG Tractors	11	10.8	388,622	3.71	181,217	465	798	1,034
Totals		*50*				2,942	4,103	5,293
Proposed Scenario (Hay Road)	# Trucks	RT/Day	Mi/Year	Fuel Economy (mi/DGE)	DGE/Year	CO2e (MT/year)	CO2e (MT/year)	CO2e (MT/year)
Diesel (B20) Tractors	40	37.6	1,823,581	4.36	417,802	3,137	4,273	5,506
LNG Tractors	11	10.4	504,395	3.71	235,203	605	1,035	1,342
		48				3,742	5,308	6,848

Table 2 below shows an incremental analysis between the existing Altamont scenario and the proposed Hay Road scenario across all three methods presented in Table 1 above. As one can see, the Report's calculation methodology shows only an 800 metric ton (MT) per year increase going to the proposed Hay Road scenario, but the additional LGOP and LCFS methods show much higher potential impacts of this proposed plan. ***In fact, both the LGOP and LCFS methods show incremental increases in GHG emissions that are well above the BAAQMD's annual Threshold of Significance for GHG emissions of 1,100 MTs.***

Table 2 - Incremental GHG Emission Comparison

	Greenhouse Gas Emissions (MT CO2e/year)		
Incremental Analysis	**Original EMFAC/LGOP Method**	**Modified LGOP Method**	**LCFS Method**
Existing Scenario (Altamont)	2,942	4,103	5,293
Proposed Scenario (Hay Road)	3,742	5,308	6,848
Incremental GHG Emissions	**800**	**1,205**	**1,555**

Sincerely,

Sean Turner
Chief Operating Officer

cc: Ms. Jessica Range, Air Quality Planner
Ms. Tania Sheyner, Air Quality Planner
Secretary of the Planning Commission

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