New York State Department of Transportation (NYSDOT)
Project C-08-12

Mobile Source Air Toxics Mitigation Measures

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Task 4.a:
SUMMARY OF THE TECHNICAL ADVISORY GROUP KICK OFF MEETING
February 15, 2011

1. INTRODUCTION

The NYSDOT SPR project, *Mobile Source Air Toxics Mitigation Measures,* led by the NYU team, requires consultation with other NYS agencies to ensure that other parties are able to review and provide feedback on some of the project's deliverables. In order to formally structure this consultation, a Technical Advisory Group (TAG) was formed, including representatives from the NYS Department of Environmental Conservation (NYSDEC) and the NYS Department of Health (NYSDOH). The scope of work calls for threemeetings of the TAG during the project.

In partial fulfillment of Task 4.a, the first TAG meeting was held on February 15, 2011. The goal of this meeting was twofold: 1) to ensure that all TAG members understood the project's objectives, background and scope of work and, 2) to ask TAG members to provide feedback at distinct stages during the research, as well as information required to complete the project's various tasks.

The TAG kick-off meeting was conducted via teleconference and webinar technology was used to allow participants at different locations to simultaneously view a PowerPoint presentation prepared by the NYU team. The meeting formally started after all attendees joined the conference call and began with all participants briefly introducing themselves. The agenda and participant list for this meeting are included as Appendix A and Appendix B provides a copy of the PowerPoint presentation. The following pages summarize the main points discussed at this meeting as well as action items.

2. SUMMARY OF THE FIRST TAG MEETING

Members of the project's TAG were invited to participate in the first meeting of the TAG, held on February 15, 2011.

1. Short description of the project background and objectives

Catherine Leslie, an Environmental Specialist at the NYSDOT Office of Environment Environmental Science Bureau(and the Project Manager for this project) described the agency's goals in initiating the MSAT project.

She mentioned that the agency is undertaking this project to develop a screening protocol and procedures for analyzing mobile source air toxics (MSATs) and that the NYU team was selected to carry out the project. The scope of work calls for a focus on the seven priority mobile source air toxics identified as compounds meriting special attention. Leslie then mentioned that NYSDOT has been following the FHWA guidance for completing MSATs analyses in National Environmental Policy Act (NEPA) documents, but the agency would like to develop guidance more specific to NY State yet using the same seven MSATs. NYS-specific inputs, such as registration data, fuel data and other data, will be used and one goal is to develop prototype language that can be used for environmental documents for projects. The agency also would like to consider construction impacts in this guidance and evaluate mitigation measures that can be implemented on projects to reduce air toxic emissions. As an SPR project, the deliverables do not constitute a standard or regulation or NYS's official policy and it may not necessarily reflect FHWA or DOT's official views. After the project is completed, NYSDOT plans to take the results and use the final report as a guide to develop NYSDOT's own policy.

Marta Panero, the NYU principal investigator for the project, added that there is a need for this type of project. Transportation projects that are federally funded are subject to NEPA, and require analysis of MSATs impacts. In order to facilitate the work of transportation agencies across the United States, the FHWA has released guidance on how to develop MSAT analyses in NEPA documents. The FHWA issued interim guidance in 2006 and an update in September 2009. Such guidance specifies three levels of analysis – no analysis at all when the project falls under certain categorical exceptions, and quantitative or qualitative analysis depending on certain features of the project.

Panero outlined the goals for the project:
1) Propose a screening protocol to facilitate the decision-making process regarding which projects require MSAT analysis;
2) Develop procedures for analyzing MSAT impacts in NYSDOT NEPA and SEQRA documents; and
3) Identify feasible MSAT mitigation measures for NYSDOT projects.

She also mentioned that while the EPA has identified at least 93 MSAT compounds, this NYSDOT-NYU project will only focus on the seven priority MSATs, as listed in the FHWA MSAT guidance.The seven priority MSATs compounds are: *acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter (POM)*. She also mentioned that the project will consider mitigation measures and also involve a consultation process. Thanking all those participating on the TAG, she said that TAG members are asked to participate in two more meetings - one during Task 8 (final project procedures) and a final meeting to report findings. Most importantly, she requested that TAG members provide feedback and information, adding that the project is expected to take 15 months and the team is hoping to finalize work in early 2012.

2. Description of project's tasks:

A task-by-task description followed, to ensure that TAG members understood the extent of each task scope and could ask relevant questions during the Q&A session. A summary of these descriptions follows.

Task 1 – Kickoff Meeting
Panero mentioned that the first task on this project was convening a kick-off meeting with the project's Technical Working Group (TWG), and that such a meeting was held on November 15, 2010. The deliverable for this task was a summary of the meeting, which was being finalized at the time of the TAG first meeting.

Task 2 – Benchmarking of State DOTs Best Practices for MSATs

Andrew Mondschein, Research Fellow at NYU Rudin Center, discussed Task 2. He has been reviewing available documents and literature on MSATs analysis. He mentioned that the team has also been conducting and pursuing interviews with DOT representatives who have participated in the AASHTO Community of Practice on MSATs. To-date the team has talked to representatives from California, Maryland, Virginia and Washington, and has coordinated with other states (e.g., MN, TX). The team will follow up specifically with Caltrans because there is a lot going on there and they have a unique process that we want to understand. The deliverable will be in report form and will be written after completing the interviews.

Mondschein added that there is some diversity among the states, although in general they follow the FHWA guidance; there are interesting differences, such as:

- California: CA stands out as the most complex and involved process; working with the CARB procedures adds another layer; CA goes beyond the FHWA guidance.
- Maryland: For the one quantitative analysis they've done, they used PM 2.5 as a proxy for MSATs. That was the only state that indicated doing that; our team is waiting for documentation on what they did and what it entails.
- Virginia: VA did more work on the process side. They developed an internet tool within their department to generate NEPA language based on project characteristics. They also developed a registry of project specific mitigation.

Across the board, the officials would like a better understanding of the science and health effects of MSATs and how it might feed into the NEPA process.
- Mike Brady from CalTrans stated that he has concerns about the process, in particular, regarding the requirement that the current fleet characteristics be assumed to exist over 70 years from now, as well as not necessarily seeing the direct connection to the actual health effects.
- Other states would also like to have better models to understand the connections among emissions, dispersion models and health risks. At least one state noted that this better understanding will not arise without better MSAT monitoring, and that current monitors for CO should also be used to gather information on MSATs.
- VA would like to see more refinement in the way analysis is done between qualitative and quantitative analysis and proposed an intermediate alternative screening to streamline the NEPA process.
- Various DOTs have shown interest in building up a larger registry of project specific mitigation.

Task 3 – Literature Review of MSAT Health Effects

George Thurston, Professor of Environmental Medicine at NYU School of Medicine, is leading this task, and will be working with Ramona Lall, Associate Research Scientist and Kevin Cromar, both active researcher

scientists on air pollution and exposures and health effects. He explained that the team has been reviewing the literature and available studies on the seven priority MSATs, focusing on MSATs health effects. In looking at the toxicity issue, one approach is to look at the inherent toxicity for each pollutant, as well as how much may already be in the environment.

He added that one may also consider how much the air sources' combined contributions will interact in order to get at the toxicity of the various constituents. In this task, Thurston said, the team is looking at the amount of toxicity and the types of toxicity for each of the seven MSATs. Thurston said that his team will survey and assess the extent of available studies on MSATs health effects with respect to three major categories: 1) acute exposure effects (non-cancer), 2) chronic exposure (non-cancer) effects having respiratory effects where there are long term implications but not cancer, and 3) chronic exposure cancer effects. While the team is considering a broad range of studies from the relevant literature, they will pay particular attention to studies focusing in New York City and New York State, and he felt this was the weakest area of coverage in the literature.

The deliverable for this task is a report summarizing the literature review, including how the literature applies to developing procedures for qualitatively and quantitatively analyzing the priority MSATs. Thurston mentioned that his team had already completed the first draft and at this time was doing an internal review.

Thurston presented two tables of reference concentrations for the seven priority MSATsand Joe Rich from the FHWA asked why the line for polycyclic organic matter in the first table was all blank. Thurston replied that his team found no reference concentrations for it as a group. Rich added that when the FHWA guidance for MSATs was first released, there were only six compounds mentioned – the last one was not mentioned – but clarified that he knows that it's in the NYSDOT-NYU contract. Thurston then continued discussing the table summarizing the seven priority MSATs and mentioned that for certain compounds (e.g., acrolein) it was easy finding data because there are reference levels and they are very specific. But diesel (overall) is a mixture of gases and particles and vapors. The polycyclic organic matter is another challenge because it's a mixture. For the planned edited version, he would like to use diesel particulate matter (DPM) as an index of diesel exhaust effects because that is where they have the most information, and seems to be where most of the effects or the impacts of diesel are concentrated. One of the more recent toxicological studies in which diesel gases are separated out from the particles show that the particles are the biggest problem. Also, Thurston added, the California study of the south coast area ascribed 70% of the cancer risk there to the diesel particulate matter (DPM), so he understands why Maryland is using PM as an index, although he was surprised that they are not using DPM, because one may find that this is the dominant compound, given the background levels and the impacts. Thurston then discussed POM and suggested that his team may use benzo[a]pyrene (BaP) as the main component to look at there because it has the best documented effects of POM and asked the TAG to read through the draft and provide feedback on this idea.

Thurston then discussed the federal and state guideline concentrations for the pollutants. The first table shown contained the federal guidelines where the reference air concentration for acrolein has the very lowest concentration allowable at 0.2micrograms per meter cubed (μg/m3)whereas benzene has 30μg/m3. Therefore, the team has inferredthat on a per microgram basis, acrolein is far more toxic than some of the

other compounds but they are using different end-points, and this is noted in the table. Thurston argued that using these guidelines, much of it suggested from Claggett and Miller, is an appealing way to try to compare these compounds in terms of their toxicity. The tables also provide the confidence given to the estimates: high, medium, and low; the models used – either animal (A) or human (H); as well as the risk specific doses relating to cancer risks (measured in micrograms per meter cubed) expressing all of these on a risk per micrograms basis. Thurston added that the tables show that there are risk factors missing for some of these compounds from the federal government, which is a complication when trying to compare them. Both tables provide references to the various web pages used to update these tables.

Thurston concluded his remarks, adding that California has a much more complete set of estimates – and CA has separated the cancer and chronic inhalation whereas in New York the Air Guide mentions the short term guidance concentration (SGC) and the annual concentration. CA provides a more complete set of estimates and gets at the relative toxicity of the various compounds. He added that his team will send the draft to Catherine Leslie and then she may distribute it.

Task 4 – Consultation Process

Panero stated that for Task 4 the project team is developing a detailed consultation process plan to be carried out at various stages throughout the project. She will submit this plan to NYSDOT for review and comments early in 2011. This plan of action for coordinated outreach will ensure that communication targets are identified early on. The goal of the consultation is to:

> (1) obtain feedback on particular aspects of the proposed research approach so as to refine the final product and tailor it to address particular agency requirements; and,

> (2) validate findings and/or obtain data required to conduct this study.

The consultation will be structured at three levels, depending on the parties involved, and will entail:

> (1) Periodic communication with the TWG (NYSDOT and FHWA) to provide an update on progress and discuss potential modifications to proposed procedures as well as obtain pertinent information and data. Catherine Leslie, who was involved in developing the AASHTO report "Air Quality Community of Practice MSAT – State-of-the-Practice," will be the main point of contact.

> (2) Formation of the TAG to outreach to a broader set of stakeholders in other agencies to obtain their feedback on certain aspects of the research. After the first meeting, the TAG members are invited to participate in two more formal meetings – one will be held when the team is ready to vet the procedures (during Task 8) and the other towards the end when the NYU team will present the final report, data and key findings.

> (3) Ad-hoc consultation (for specific tasks). Various experts and agency representatives will be consulted as determined appropriate to complete various tasks. For example, the team may reach out to certain US EPA contacts to ask for updates to the MOVES model and to consult about non-road models.

This task's expected deliverables include a Consultation Plan, various meetings with the TWG and the TAG, as well as a summary of consultation process towards the end of the project, which will include a list of all those involved.

TASK 5 – Use MOVES and NONROAD Models to Generate MSAT Emission Rates

Tom Carlson described the planned activities under Task 5. He started by saying that the team will use the MOVES and NONROAD models developed by EPA to conduct an exhaustive set of sensitivity runs with both models (instead of developing a set of rates that people will use when doing quantitative assessments under the guidance). MOVES will be used to deal primarily with the operational phase emissions, and the NONROAD model will deal with off road equipment construction phase emissions. These runs will be based on information given by DOT and/or assembled by the team (NYS and county level specific conditions to update some of the work that Claggett and Miller did with MOBILE6 a few years ago), based on a new set of emissions rates and data that EPA is now loading for MSATs. This will help the team understand the models' inputs that are most sensitive and that should be higher priority items for project applicants to collect and represent at a more accurate level.

Carlson then explained that part of this work, with respect to MOVES, would involve trying to determine the modeling scales and execution modes in MOVES that are most appropriate, and asked for feedback from the TAG members that have experience with MOVES. He added that the execution modes that are relevant to this work would be at the county level or project level and the project level sounds like the most appropriate one but this will depend on the number of links involved to model and other inputs that are potentially more onerous to collect at the local level. This might be difficult for people to follow in the guidance, so that is an issue the team is going to explore.

Other elements of this task would be putting together pieces of information that will support some of the subsequent tasks. This includes coming up with range checks for the emission factors that would be supplied in the guidance for people who haven't run models before, and given the complexity of MOVES, to ensure that they are coming up with estimates in the model that are reasonable. In addition, the team is going to use the models to support updating of Average Annual Daily Traffic (AADT) based quantitative vs. qualitative screening thresholds that will be employed in Task 6.

Carlson reiterated that MOVES will be used to deal with the on-road emission rates for the operational phase of a particular project; NONROAD for the off-road construction phase, and for this the team may need to use another database such as EPA SPECIATE, to apply speciation ratios to specific criteria pollutants to get MSAT estimates. As it exists right now, MOVES (latest EPA version in September 2010) doesn't estimate polycyclic organic matter emission rates. If that model isn't updated in time to leverage that additional capability that EPA is now trying to build into their model, the NYU team will have to use the SPECIATE database and apply it as has been done in the past with MOBILE to get estimates of polycyclic organic matter.

Carlson then mentioned that the deliverable for this task is a technical memorandum that describes the team's findings from the sensitivity analysis for both MOVES and NONROAD models.

Task 6 – Establish the Screening Criteria

In describing this task, Panero mentioned that the project team will define the appropriate screening criteria and a methodology to evaluate proposed transportation projects in New York State for MSAT analysis in NEPA and SEQRA documents. The team will start by developing an outline of the relevant questions or queries to help project proponents decide whether their project requires an MSAT analysis and if so, what type of analysis is needed and how to proceed. She added that as a first step the specific criteria will consider the project type, activity level, and receptor locations, in particular sensitive populations.

Additional queries shall include the number of vehicles idling, traffic volume changes, and construction-related activities. NYSDOT will review this outline, and once approved, the team will develop a criteria set to fit the NYS context.

Panero noted that the FHWA has developedguidance for MSATs in NEPA documents and the team is going to use that guidance as a starting point. Other documents will also be considered, including the NCHRP 25-25 report which describes five levels of analysis to evaluate transportation projects for their potential air toxic risk.She then added that the FHWA has identified three levels of analysis, depending on the specific project circumstances. Additional levels of quantitative analyses may consider dispersion modeling and emissions trends in order to estimate concentrations and outdoor risk levels, and can also consider population activity patterns in orderto estimate exposure rates.However, Panero said that based on the information gathered by the team during the interviews, such additional levels of analyses are not commonly used, mostly because of the lack of national standards for MSATs (similar to national ambient air quality standards for carbon dioxide or PM). She then added that those interviewed felt that given the uncertainties surrounding modeling tools or concerns about incomplete information, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. Therefore, the team will take this information into consideration when developing the criteria set.

Tom Carlson then explained that another key element of this task will consist of establishing specific traffic thresholds to determine whether quantitative and qualitative analysis is needed. To accomplish this, the team will review both the existing FHWA guidance as well as the methodology contained in NCHRP 25-25 report to assist and determine thresholds specific for New York State. Carlson said that he will recalculate equivalent annual average daily traffic (AADT) thresholds by facility type (for example a freeway, an arterial, or an intersection) as well as idling truck hours and other considerations. This recalculation operation shall be based on MOVES emission rates and New York state specific fleet vehicle conditions (in part because the existing NCHRP thresholds are based on a nationwide fleet and MOBILE6.2 emission rates). In performing these operations, the team will utilize methodological elements of the NCHRP 25-25 effort that quantitatively translated unit health risk back to AADT thresholds based on dispersion modeling of localized roadway emission factors. It's likely that the same set of dispersion models and assumptions used in NCHRP 25-25 will be used to re-calculate MOVES-based New York State screening thresholds. Carlson added that the team will also take into account the need for separate thresholds for construction phasing emissions and will review the existing NYSDOT project level particulate matter level guidance and other available literature to address when a quantitative analysis is needed during the construction phase. He concluded his remarks by saying that the deliverables on this task include an outline and a technical report describing the selection criteria as well as an explanation of how it was developed.

Task 7 – Identify and Assess MSAT Monitoring Data

Thurston stated that under this task, the team is going to identify and assess the MSAT monitoring data in New York and surrounding states. This task will include a review of standard monitoring as well as research monitoring and also a review of the government local air toxic modeling results, especially data from EPA, the National Air Toxic Assessment (NATA) and other data, reviewing the published literature and contacting people. Thurston said he will follow up on some work that New York State has done (based on census tract level data) and compare the NATA predicted concentrations and observed data whenever available. The monitoring data will be compared to what the EPA is reporting.

The team can match up the data points on a census tract basis and perhaps that will provide a better way to obtain estimates. This can then be used as a guideline to estimate the prevailing concentrations. Coupled

with the information from Task 3, the estimates may be used in the screening process to determine the reference concentrations. If it turns out that the findings about current monitoring efforts coincide with what the EPA models are predicting, then the team will have useful baseline estimates throughout the state. Thurston mentioned that he will be consulting with NYSDOT staff and other agencies and/or researchers that are conducting MSAT monitoring about recommendations on how best to enhance monitoring practices.

Thurston ended his remarks by describing the deliverable for this task – a technical report identifying and assessing existing MSAT concentrations. This will likely include an assessment of NATA and its usefulness. He is hoping that the data correlate with measurements and then will incorporate the results in assessing the baseline concentrations for projects.

Task 8 – Develop Procedures for Performing MSATs Analyses

Under this task, and based on information completed for Tasks 1 to 7, the project team will propose a MSATs Analysis Procedures Guidebook. In consultation with NYSDOT, the procedures will be tailored to New York State. These procedures will be developed in two steps – first an outline and then the guidebook. The team will first develop a detailed outline to be reviewed by NYSDOT and TAG members and their comments will be taken into consideration to develop the final guidebook, which is one of the central deliverable of this effort.

Carlson added that the team will produce a guidance document that isas easy, readable and efficient for people to interpret as possible. The guidebook will incorporate screening criteriathat will be MOVES-based rather than MOBILE6.2-based. It will also reflect New York State-specific fleet conditions rather than the nationwide default fleet. It will also incorporate language that adds background information and describes the context for the guidebook so that people won't have to consider quantitative analysis if it's not warranted by results of the screening criteria.

Carlson said that in developing the guidebook, it is important to move beyond just providing instructions for running MOVES. He stated that this guidance will be more effective if it incorporates information that deals with specific examples, which can be used by project proponents. Carlson presented a partial list of these cases and said that the team will add actual sample calculations that deal with collection of inputs and processing of those inputs for particular types of qualitative and quantitative analyses. He said that it would be helpful to get feedback from NYSDOT and the TAG members about which cases represent the highest priority for inclusion based on what might be more typical or difficult projects. He then noted that the team is going to use some of the sensitivity work from Task 5 to identify valid ranges of emission rates. Carlson then concluded by stating that given the complexity of the model and to help users, the team is considering putting together certain files or inputs, such as fleet characterization inputs, for people to use and to guide them conceptually and schematically on how to do model runs when quantitative assessments are needed.

Task 9 – Characterization of Mitigation Measures

Carlson explained that the team will develop guidance and procedures that will inform and help applicants if a project requires mitigation. To the extent that information is available, the team will put together a series of measures that provide the types of benefits that may be applied to a particular project. The team would like to put together these potential measures in consultation with the TAG and will start by a comprehensive

literature review. There is a TRB report that is 10 years old that still has some valuable information from a top scale view, looking at what different parts of the country have done, to produce some assessment of feasibility and a range of financial costs for types of mitigation measures; nevertheless, he felt this task was going to be a challenge.

Carlson said that under Subtask 9.2, NYSDOT has asked the team to put together an Excel spreadsheet-based utility program. This program will let applicants put together information about mitigation benefits in terms of travel changes. Users will be able to calculate MSAT emission reductions for their particular projects.   He added that the team will need some guidance on the scope and range of the elements/conditions the model will need to address so it doesn't become more complicated to execute. The team will need to define the variables to be included in this model.

The team will put together a report on the feasibility and benefits of mitigation measures and deliver the spreadsheet model with users guide.

Task 10 - Final Report

The final deliverable is a report of the overall study. The procedures for performing MSAT analysis, the feasibility and benefits of the range of mitigation measures, and a summary of the consultation process will be documented in the appendix. Another deliverable is hosting a meeting to present on the research findings.

Q&A Session:

The Q&A session was then opened and Panero informed participants that they could also email questions afterwards, either to Catherine Leslie, the NYSDOT Project Manager, or to the NYU team.

Randi Walkerfrom NYSDEC inquired about the MSATs tables described under Task 3, in particular as they relate to the health endpoints, and said that the tables need to use a standardized metric. She noted that the NYSDEC's AGCs are 1 in a million but that is not presented that way in the tables for Task 3. In terms of AGCs, for those air toxics that are cancer endpoints, NYSDEC uses a 1 in a million threshold, which is different than the table's risk specific value where 1 in 10 million is being used. If the team is not going to try to standardize the two, she asked that at least this be flagged and she added that acrolein is a non-cancer compound, but for the other chemicals where cancer would be the endpoint, it's 1 in a million; however, the table was using 10 in a million.

Thurston answered that the concentrations given in micrograms were the values as reported in the literature. He added that he couldn't recall if they were on a consistent risk basis or not. He would check into this issue and either make it more consistent and/or express it more clearly so readers know what is being presented in the tables.

Moving to a separate topic, Walker then mentioned that the NATA 2005 data would be released the following week and that she had already completed the model-to-monitor comparison based on a pre-release copy and then offered to send it to the team after it is released. Walker felt that this was relevant since Thurston was looking for model-to-monitor comparisons for NATA. NYSDEC received the pre-release

version because the state regulatory agencies were asked to review the information and to help correct the deficiencies.

Carlson asked Walker what scale the comparison of modeled to monitored concentration is generally done. Walker replied that she has conducted such comparisons at the point of the monitor (the station level). She added that she was not in a position to answer "how far can you characterize the toxics at the monitoring stations?"if that was indeed the question that Carlson was asking.

Thurston added that the NATA data are available on the census tract level and he would like to suggest that this could be used as the background level for the given census tract. Rae Zimmerman asked Walker if she would be comfortable with that kind of extrapolation, and Walker replied that she would like to take a look at how the NYU team is characterizing it in the document. Rich then asked Walker whether that is essentially what has been done when comparing the monitor to data within a particular census tract and Thurston asked whether the predictions are for a census tract, in which case it isn't a prediction for an exact location within a census tract. Walker replied that "it's the census tract prediction site for the monitored location."

Thurston then asked whether this is not indeed the model prediction for that exact location within the census tract, and in such case then it would make sense to generalize it to the census tracts. Walker replied that the model is predicting at the population weighted-centroid. If the tract is small enough, then the monitor and the model are going to be very near each other, but if the census tract happens to be large it might not. She added that in any case, the population weighted-centroid is pretty close to where the monitor is anyway; NYSDEC sites the monitors close to population receptors.

Thurston proposed that his team could work with Walker on finding out the distance between the monitors and the population weighted-centroid in each case to get an idea of the spatial distances involved. Walker replied that she thought that was a different research question – "how far out do the monitor's concentrations apply to a population exposure?"

Agreeing that this was indeed the question being asked, Carlson said that this was a critical issue when utilizing the information in the context of this project, so it would be important to clarify the approach. Most of the monitors are in heavily populated areas but outside densely populated areas there are few or no monitors nearby andThe NYU team would like to use the monitor-to-model comparisons to inform any potential project at these locations.Then, thekey question is how well the team can comfortably and reliably extrapolate the modeled concentrations in those tracts that are nowhere near monitors.

Zimmerman then asked whether it would help to compare the values for adjacent monitoring stations. If they're roughly the samethen one could assume that the monitoring stations were representative of the whole tract. Rich asked how many monitors were being considered and Walker replied that more recently there have been 10 monitors but in other years there have been 13. Someone asked whether they are representative of the entire state in terms of equal distance. Walker said that there are more monitors in the NY City area, and while definitely there are more in the urban areas, there are also some in Upstate New York. A participant suggested that there might be other methods that could be used, such as regression modeling with land use characteristics and that a number of researchers are working on this.

At this point, Panero asked whether there were any questions about other issues. Gregg Recer commented that there was not much toxic data or guidelines for PAHs or POMs in the tables. He estimated that there will likely not be much information for the vapor phase because it is largely in particulate form, so it may be that PAHs and diesel are largely proxies for each other. He added that there are a number of PAHs for which there are toxic equivalency factors (TEQs) and in terms of health impacts, a toxicity equivalent process could be based onbenzo[a]pyrene's(BaP)carcinogenicity. Then he asked whether the team had found information about vapor phase monitoring and while he assumed most of the monitoring was largely for particulates, he wanted to know if NYSDEC has monitors to analyze the vapor phase. Walker replied that the agency does not have such monitors.

Carlson then commented that he had completed an assignment a year and a half ago for the EPA, putting together toxic rates into the MOVES model that were not included in the versions of the model that came out in 2010. This new information would be included in the next major release of MOVES that is scheduled to be released towards the end of 2011. One of the challenges they faced when doing the work was having limiting testing data in terms of measurements taken for both particulate and gaseous phases for the 16 PAH compounds within the POM group. While benzo-a-pyrene is largely particulate, some of the other PAH species within that list of 16 PAHs can have roughly 1/4 to 1/3 in the gaseous phase as well. Without giving any specific detail about his discussions with EPA, the agency has since obtained additional testing data that is being analyzed and they will use to try to more robustly fractionate the POM gas phase splits for those PAH species in the new MOVES to be released.

Recer said that he assumed that the two tables discussed under Task 3 were based on the most recent and well established IRIS numbers at the federal level or state guidelines like the AGCs and the California numbers, and added that he has used toxicity values developed for PAHs for other situations like soil evaluation. However, he was uncertain about how to extrapolate toxicity values developed from soil samples to compounds that are more likely to be at the vapor phase. Carlson said that this was a good point, but clarified that as Leslie had mentioned in the beginning of the call, our team has been given guidance that the central focus of the project should be tailoring the existing FHWA guidance and producing emission estimates using NYS based inputs. Something that the team has been grappling with is what to do with quantitative estimates of emissions that applicants would produce if they are not going to be linked to dispersion modeling or incremental risk assessments.

Panero added that the project team discussed including certain flags for projects such as inter-modal facilities, or a freight facility, and any projects with the potential to have large impacts so applicants will have to be more careful about their quantitative analysis.

Recer then asked if the project applicant would identify emission levels as flags for potential large impacts as an information gap that might have to be investigated further, or whether the goal is to fill those gaps. Panero answered that this is not the case and Carlson stated that the goal is to put together an analysis that will support this guidance and that will give a sense of how often significant impacts might occur for particular types of projects without necessarily getting ahead of what FHWA has published in informing the NEPA process.

At this point, given that there were no additional questions from participants, Panero mentioned that the NYU team would like to ask some questions. Carlson then said that since NYSDEC has been working in converting files to the MOVES structure, he wanted to know if these were close to becoming available. Mike Sheehan said that the next day, and as part of a consultation process, NYSDEC was going to share some drafts for 2007 files and he asked whether this was going to be the team's base year, since he'd noticed that in Task #9, the spreadsheet model needs to incorporate six years, so he asked what six years of emission rates the NYU team would expect. Carlson then said that the big unknown in forecasting is what the fleet's going to look like given the economic turmoil with the light duty vehicle fleet, and asked the TAG members how that may be addressed from a policy perspective. He added that it might be safe to project the future fleets in terms of mix of vehicles that might look similar to what they do now. The question is how quickly new vehicle sales will rebound from depressed levels that have existed in the last few years. One place he might look is the work that EPA and NHTSA have done in the latest CO_2 and CAFE regulations. He thought that they might have made national fleet forecasts based on their guesses and evidence.

Leslie asked whether NYSDEC would be doing other years and Sheehan stated that over the next couple of months, his team plans to do 2020 and 2025 projections. When Carlson said that the NYU team would wait for those estimates, Sheehan added that the analysis for the six yearsassumes the same fleet age distribution. His team has not gotten to that point yet. Everything they were sharing the next day must be considered a draft. He offered to follow up on what years were projected, and mentioned that they may have 2017 and 2020 data for the non-road side.

Carlson said that this will help inform the NYU team's sensitivity runs even if we were to take what NYSDEC has characterized as draft 2007 base year files and told Sheehan that this would give our team a starting point even if Sheehan decides that he has to modify the files later.

Sheehan clarified that there are sensitivities with developing emission rates versus emissions inventories. His understanding is that the model runs much slower and is much more data intensive in developing emissions rates. For air quality modeling, NYSDEC cut the data into representative counties and didn't do all 62 counties.

Carlson then said that he has developed mechanisms to post process emissions into elemental emission rates that address the performance issue of running the model in emission rateoutput mode. He added that he understood Sheehan's point and that he will have to determine how effectively emissions can be stratified (e.g., by process, model year, vehicle type, etc.) and combined with similarly stratified activity outputs to generate disaggregate emission rates that can be applied at the project level if our team is going to use this scale of execution for this guidance. Carlson went on to say that with fleet inputs, he is looking at what NYSDEC collects for local/county level information on age distribution and field parameters. There may be instances in particular projects where different fleet mixes are warranted for a project, for example, if it's on a freight corridor that may not match the county data at large. Therefore, he will consider that as well but he is primarily interested in utilizing the age distribution and fuel information that NYSDEC has set up for running MOVES.

Panero then asked Carlson if he felt he had all the information he needed for Task #9. Carlson replied that there is an array of elements that our team will have to define in terms of scoping the spreadsheet model so it can be finished on budget and is still adequate in the capabilities it can represent. More information is still needed on two specific items. First, our team will need help in identifying the areas that would be considered downstate versus upstate. Carlson has put together a list, but would like to get that reviewed by someone at the agencies, specifically to determine that what is termed "downstate" by our team is correct. Second, Carlson noted the issue of the calendar years that would be used in the spreadsheet tool to produce mitigation benefits. He then added that this ties into the central question of how far the guidance should go in terms of looking into horizon calendar years that might ultimately be used for doing long term exposure and risk calculations versus shorter term ranges of years that would tie more to shorter planning horizons. He felt that the team should decide collectively on how we want to do this. To make this spreadsheet tool tenable, we need to restrict the time period to about six different years for which outputs are produced.

Jonathan Bass asked Panero that since she had mentioned red flag issues for situations with multi-modal facilities, he was wondering why they were not listed as example projects on the presentation slide. Carlson replied that he had just collapsed the list on because it didn't fit on the slide, adding that it's definitely in the broader list in the scope of work.

John Martin then asked whether the FHWA may further update the September 2009 MSAT guidance and Victoria Martinez replied that yes, the FHWA is going to update it at some point, but she was not sure if the update will be done by the time this project is completed. The agency is taking a look at a number of things, including the EPA recently published PM hot spot guidance and MOVES updates, so they are trying to limit the times they are doing updates. EPA's two-year grace period for using MOVES on a project level basis will help guide their decisions about updates as well.

In closing the meeting, Panero mentioned that the NYU team is going to summarize this meeting and send it to the TAG along with the PowerPoint presentation, so that the team will have a record of what is planned for this project and provide feedback accordingly.

The meeting was then adjourned.