Canada

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Federal Highway Administration

Ontario

MDOT
Michigan Department of Transportation

Canada-United States-Ontario-Michigan Border Transportation Partnership

Human Health Risk Assessment

Technically and Environmentally Preferred Alternative

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PREFACE

The Detroit River International Crossing (DRIC) Environmental Assessment study was conducted by a partnership of the federal, state and provincial governments in Canada and the United States in accordance with the requirements of the Canadian Environmental Assessment Act (CEAA), the Ontario Environmental Assessment Act (OEAA), and the U.S. National Environmental Policy Act (NEPA). In 2005, the Canadian and U.S. Study Teams identified 15 potential river crossing locations and associated plaza and access road alternatives. The results of the assessment of these alternatives led to the identification of an Area of Continued Analysis (ACA). Within the ACA, practical alternatives were developed for the crossings, plazas and access road alternatives.

Through the analysis of the practical alternatives, and in conjunction with ongoing consultation efforts, a new alternative was developed that combined beneficial features of the original alternatives. The new alternative was identified as The Parkway in August 2007 and included 7 kilometres of below grade freeway, an optimized service road system, a green corridor with 10 tunneled sections totalling 1.5 km in length, a grade separated recreational trail system, and extensive green areas.

Upon completion of the analysis of the practical alternatives, the alternatives were evaluated. The Partnership announced the results of the evaluation for the access road component in May 2008. Referred to as The Windsor-Essex Parkway, the Technically and Environmentally Preferred Alternative (TEPA) access road consisted of the major components of the Parkway with some refinements made to reflect additional community consultation and analysis. These refinements included an additional tunnel in the Spring Garden area, more green space and a refined trail network. The components of the TEPA for the international bridge crossing (Crossing X-10B) and Canadian plaza (Plaza B1) were announced in June 2008.

The remainder of 2008 focused on detailed analysis and identification of impacts and appropriate mitigation measures for the TEPA, along with further refinements. A separate Technical Memorandum (December 2008) documents the assessment of further refinements that were made to the TEPA. This report summarizes the work undertaken in this regard specific to the Human Health Risk Assessment and the TEPA. These measures were also documented in a draft version of the Ontario Environmental Assessment Report, which was made available to the public, agencies, municipalities, First Nations, and other interested parties for review in November 2008.

Additional reports and details are available at the study website (www.partnershipborderstudy.com)

EXECUTIVE SUMMARY

This document provides an overview of the Human Health Risk Assessment completed for the Technical and Environmentally Preferred Alternative (TEPA) as part of the Detroit River International Crossing (DRIC) Environmental Assessment.

Difference Between a Risk Assessment and a Health Study

Human health risk assessments are used to determine if a particular chemical poses a significant risk to human health. If it was possible to prevent humans from being exposed to chemicals then there would be no need to conduct a risk assessment. Since this is an impossible exercise and exposure to many naturally occurring substances also pose health risks, risk assessments become an important tool in evaluating these risks.

Risk assessment helps scientists and regulators identify serious health hazards and determine ways to reduce exposure so that there is no significant health risk to the public. The term "human health risk assessment" is often misinterpreted because people think that a risk assessment will provide information as to whether an exposure to a chemical causes a current health problem or symptom that they are experiencing. Risk assessments do not provide this information; studies that look for these types of linkages are generally epidemiological studies. These studies generally include a survey of health problems in a community and provide a comparison of these health problems to other cities, communities or populations as a whole.

While both of these types of studies are important, health risk assessments and epidemiological studies have different objectives. Most epidemiologic studies examine whether past chemical exposures may be responsible for documented health problems in a specific group of people whereas human health risk assessments evaluate whether current or future chemical exposures will pose health risks to a broad population such as a city or a community. The scientific methods used in a human health risk assessment cannot be used to link individual illnesses to past exposures to chemicals; additionally, health risk assessments and epidemiological studies cannot prove that a specific chemical caused an individual's illness.

Regulatory bodies use risk assessments to determine drinking water guidelines, site clean-up criteria, the safe use of pesticides to name a few. Human health risk assessments use both sound science and professional judgment and is a constantly developing process.

Health Canada has carried out an epidemiological study in the Windsor area related to mortality and cancer incidence for the period 1979-1999. The results suggest a potential risk for diseases associated with long-term air pollution exposure such as bronchitis, emphysema, lung cancer and lung cancer incidence and mortality from circulatory diseases. These diseases were attributed to transborder air pollution but

are preliminary in nature and further studies are underway to assess chronic cardiorespiratory outcomes in relation to air and traffic pollution.

Human Health Risk Assessment Process

The primary objective of the Human Health Risk Assessment was to help interpret the potential for an overall adverse effect of the TEPA, including potential adverse effects to people and in the immediate area surrounding the proposed roadway. The Human Health Risk Assessment used the predicted concentrations for the TEPA that were provided in the Air Quality Impact Assessment. The Plaza and Crossing were not assessed in the Human Health Risk Assessment since there were no nearby receptors (see Air Quality Impact Assessment for more details). Three horizon years (2015, 2025 and 2035) were evaluated in the risk assessment.

The methods followed in this risk assessment concur with procedures outlined by regulatory agencies such as Ontario Ministry of the Environment, Environment Canada, Health Canada, the Canadian Council of Ministers of the Environment (CCME) and the United States Environmental Protection Agency (U.S. EPA).

The chemicals of concern identified in the Air Quality Impact Assessment were gaseous air pollutants (nitrogen oxides (NO_2), and sulphur dioxide (SO_2)), fine particulate matter ($PM_{2.5}$), and volatile organic compounds (VOC) such as acrolein, acetaldehyde, benzene, formaldehyde and 1,3-butadiene. Human health risk assessment is divided into four different steps as provided in the various regulatory frameworks. They are:

- the problem formulation stage, in which the various chemicals of concern, receptors, exposure pathways, and scenarios are identified;
- the exposure assessment, where predicted exposures are calculated for the various receptors and chemicals of concern;
- the hazard assessment, in which exposure limits for the chemicals of concern are determined; and,
- the risk characterization stage, where the exposure and hazard assessment steps are integrated.

These steps were followed in the risk assessment.

Since the TEPA for the Detroit River International Crossing is currently in the design stage, it is not possible to directly measure emissions associated with the proposed roadway, their potential effect on the ground level air concentrations or possible health outcomes in the community. Therefore, various mathematical models for the prediction of emission rates were used (see Air Quality Impact Document) to determine the exposure to various human receptors considered to be representative of the community. The risk assessment included exposure through inhalation and ingestion of chemicals associated with vehicle emissions through direct deposition to vegetation, as well as deposition to soils and uptake by vegetation.

How the Analysis was Performed

The Human Health Risk Assessment involved a comparative evaluation between the technically and environmentally preferred alternative for the Detroit River International crossing and the existing conditions or Future "No Build" scenario in the local area as outlined in the Air Quality Impact Assessment.

The possibility of short-term (1 hour, 8 hour, 24 hour) and long-term (annual) adverse human health outcomes were assessed based on exposures at the maximum concentration that would occur at different areas along the roadway. The use of the maximum predicted concentrations in each area covered the range of air concentrations that potentially could occur from activities on the roadway. Cautious assumptions of exposure were used in the assessment to ensure that risks were not underestimated and this most likely resulted in an over-estimate of exposure. One example of a cautious assumption is that it was assumed that residents were exposed to vehicle emissions 24 hours a day, 7 days a week over their entire lifetime.

The Human Health Risk Assessment results were expressed as deterministic hazard quotients and cancer risk levels for long-term exposures, as well as hazard quotient values for both short-term and long-term exposures to gaseous air pollutants. In general, regulatory agencies such as Health Canada, the Ontario Ministry of the Environment and the U.S. EPA concur that a hazard quotient value below one (1) (for assessing gaseous air pollutants since they include background). A hazard quotient of 0.2 (for pathways assessment examining direct and indirect exposure from air pathways) and an incremental cancer risk level of one in a million (1×10^{-6}) are not considered significant and are legislated by the Ontario Ministry of the Environment. The use of an incremental risk limit of 1×10^{-6} as set out by the Ontario Ministry of the Environment is more stringent than the $1x10^{-5}$ incremental risk limit that is acceptable to Health Canada and the U.S. EPA.

Predicted Human Health Risks

The short-term and long-term health risk associated with exposure to the gaseous air pollutants (SO_2 and NO_2) was assessed based on using a hazard quotient value of 1 since background exposures were taken into account. The results showed that:

- the emissions of sulphur dioxide (SO_2) arising from vehicles traveling along the roadway for the Future "No Build" and TEPA scenarios were similar to background. Therefore, short-term risks arising from exposure to SO_2 were no different to background and the TEPA does not result in any increased risk in comparison to the Future No Build scenario.

- The short-term and long-term risks associated with NO_2 were similar to background. In general, the short-term and long-term risks associated with exposure to NO_2 for the TEPA are lower that the Future No Build scenario, indicating that there is less risk to residents in communities surrounding The Windsor-Essex Parkway for the TEPA scenario. The Air Quality Impact Assessment attributes the lower NO_2 concentrations to less stopping and starting and idling on The Windsor-Essex Parkway.

There are no health based thresholds for Total Particulate Matter; the World Health

organization has concluded that fine particulate matter ($PM_{2.5}$) are more hazardous to health than coarser particles. Fine particulate matter ($PM_{2.5}$) background concentrations in the Windsor area are relatively high and are above health based toxicity reference values. The predicted concentrations background exposure to $PM_{2.5}$ accounts for a significant portion of the hazard quotient for both the Future No Build and TEPA scenarios. In general, the TEPA scenario results in lower hazard quotients than the Future "No Build" scenario. Thus, the results of the risk assessment associated with $PM_{2.5}$ demonstrate that the in general, risks are lower for the TEPA than the Future "No Build" scenario which indicates that there is less risk to residents in communities surrounding The Windsor-Essex Parkway for the TEPA scenario.

The incremental cancer risk values for long-term exposure to carcinogenic VOCs were above the regulatory risk level of one-in-a-million (1×10^{-6}). However, the incremental risks for the TEPA were no different than the risks associated with background. Thus, the TEPA does not result in increased incremental cancer risks over background.

Hazard quotients for non-carcinogenic VOCs (predicted exposure dose ÷ chronic toxicity reference value) for background, Future "No Build" and the TEPA scenarios were below 0.2 for benzene and 1,3-butadiene. Hazard quotients for acrolein, acetaldehyde and formaldehyde were all above 0.2 for background, Future "No Build" and the TEPA scenarios. However, the hazard quotients for the TEPA were no different than the risks associated with background. Thus, the TEPA does not result in increased incremental adverse health risks over background.

Conclusions

Based on the risk assessment, the following key conclusion can be drawn:

- Predicted concentrations of gaseous air pollutants, fine particulate matter, and Volatile Organic Compounds for the Future "No Build" and TEPA scenarios are not much different from each other and background. Thus, the TEPA does not result in an increased health risk over the Future "No Build" or background scenarios. This conclusion supports the findings of the Air Quality Impact Assessment.

An evaluation of the uncertainties in various measurements and methods used in the risk assessment indicated that the risks have been over-estimated as a result of the assumptions made about exposure (which were generally cautious). The results of this uncertainty analysis support the overall conclusion of the assessment that the TEPA does not result in an increased health risk over the Future No Build or background scenarios.

Human Health Risk Assessment

Technically and Environmentally Preferred Alternative

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LIST OF ACRONYMS

Acronym	Description
ATSDR	Agency for Toxic Substances and Disease Registry
CO	Carbon Monoxide
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HQ	Hazard Quotient
IRIS	Integrated Risk Information System
LOAEL	Lowest Observable Adverse Effects Level
MOE	Ontario Ministry of the Environment
NOAEL	No Observable Adverse Effects Level
NO_x	Nitrogen Oxides
$PM_{2.5}$	Particulate Matter with a 2.5 μm diameter
PM_{10}	Particulate Matter with a 10 μm diameter
PQRA	Preliminary Quantitative Risk Assessment
RfC	Reference Concentration
RfD	Reference Dose
SF	Slope Factor
SO_2	Sulphur Dioxide
SPM	Suspended Particulate Matter
SSRA	Site-Specific Risk Assessment
TF	Transfer Factor
U.S. EPA	United States Environmental Protection Agency
WHO	World Health Organization

GLOSSARY

Terms	Description
Airshed	A body of air bounded by topographical and/or meteorological features in which a chemical, once emitted, is contained.
Ambient air	Any unconfined portion of the atmosphere: open air, surrounding air.
Assessment endpoint	A quantitative or quantifiable expression of the environmental value considered to be at risk in a risk assessment.
Atmospheric dispersion	The dispersion into the atmosphere of matter and gases that can be carried by air currents.
Background concentration	Representative amount of chemicals in the air, water or soil to which people are routinely exposed (generally mean or 90th percentile concentration).
Benchmark	A standard by which something can be measured or judged.
Bioavailability	Degree of ability to be absorbed and ready to interact in organism metabolism.
Biota	The animal and plant life of a region.
Burden of Illness	The short and long-term, physical, emotional, social, financial, familial and societal effects associated with a particular illness or condition.
Carcinogen	An agent that has the potential to cause cancer.
Cautious	As used in the term cautious estimates, this is considered a pessimistic or an overestimate of the level, effect or hazard, as the case may be.
Chronic effect	An adverse effect on a human or animal in which symptoms recur frequently or develop slowly over a long period of time.
Chronic exposure	Multiple exposures occurring over an extended period of time or over a significant fraction of a human's lifetime (Usually seven years to a lifetime)
Chronic toxicity	The capacity of a substance to cause long-term poisonous health effects in humans.
Contaminant	A substance that has the potential to alter the natural composition of air, water or soil.
Contaminant migration	The movement of contaminants from one location to another.
Contamination	Elements that are present at levels above those normally found (i.e. above background).
Deterministic	Referring to events that have no random or probabilistic aspects but proceed in a fixed predictable fashion (i.e. a single point estimate).
Dose	The amount of a substance to which a person is exposed over some time period. Dose is a measurement of exposure.
Environmental Assessment	An environmental analysis to determine whether a site / facility would significantly affect the environment and thus require a more detailed environmental impact statement.
Environmental Impact	A change in environmental conditions resulting from an action or development, which may be negative, positive, or neutral.
Exposure	The amount of a pollutant (chemical) present in a given environment that represents a potential health threat to living organisms.

Terms	Description
Exposure Assessment	Identifying the pathways by which toxicants may reach individuals, estimating how much of a chemical an individual is likely to be exposed to, and estimating the number likely to be exposed.
Exposure Concentration	The concentration of a chemical or other pollutant representing a health threat in a given environment.
Exposure Pathway	The path from sources of pollutants via, soil, water, or food to man and other species or settings.
Hazard	Potential for radiation, a chemical or other pollutant to cause human illness or injury. Hazard identification of a given substances is an informed judgment based on verifiable toxicity data from animal models or human studies.
Hazard Assessment	Evaluating the effects of a chemical or determining a margin of safety for an organism by comparing the concentration which causes toxic effects with an estimate of exposure to the organism.
Hazard Quotient	The ratio of estimated site-specific exposure to a single chemical from a site over a specified period to the estimated daily exposure level, at which no adverse health effects are likely to occur.
Incremental	Small increase.
Measurement endpoint	A quantitative summary of the results of a toxicity test, a biological monitoring study, or other activity intended to reveal the effects of a substance.
Modeling	Using mathematical principles, information is arranged in a computer program to model conditions in the environment and to predict the outcome of certain operations.
Morbidity	Occurrence of a disease or condition that alters health and quality of life.
Mortality	Death.
No Observed Adverse Effects Level (NOAEL)	The highest tested dose of a substance that has been reported to have no harmful effects on people or animals.
Order of magnitude	A range of values between a specified lower value and an upper value ten times as large.
Pathway	The physical course a chemical or pollutant takes from its source to the exposed organism.
Pathways analysis	A method of estimating the transfer of chemicals (e.g. radionuclides released in water) and subsequently accumulated up the food chain to fish, vegetation, mammals and humans and the resulting dose to humans.
Preliminary Assessment	The process of collecting and reviewing available information about a known or suspected waste site or release.
Receptor	A human exposed to a chemical released to the environment.
Risk	A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.
Risk Assessment	Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.

Terms	Description
Risk Characterization	The last phase of the risk assessment process that estimates the potential for adverse health or ecological effects to occur from exposure to a stressor and evaluates the uncertainty involved.
Screening	A preliminary stage of the assessment process for quick evaluation of relatively simple and routine activities, or for determining the level of effort required for evaluating more complex projects.
Uncertainty	A quantitative expression of error.
Uptake	The process/act by which a chemical enters a biological organism (e.g. inhalation, ingestion by humans).

1. Introduction

This report provides a discussion of the assessment of the technically and environmentally preferred crossing, plaza and access road related to potential adverse effects to humans in the vicinity of the roadway and it draws on the air quality modelling exercise completed and documented in the Air Quality Impact Assessment.

The Technically and Environmentally Preferred Alternative (TEPA) for the Detroit River International Crossing involves The **Windsor-Essex Parkway Alternative and Crossing B-Plaza B1.** The Windsor-Essex Parkway includes a below grade six-lane freeway with a series of tunnels ranging in length from 120 m to 240 m. It also includes service roads (both two-way and one-way segments) located adjacent to the freeway. A landscaped parkland buffer to the right-of-way provides a trail system and linkages to both sides of the transportation corridor.

Crossing B-Plaza B1 is a bridge crossing north of the Brighton Beach Power Generation Station directly connected to a plaza located at the southern end of Sandwich Street, in the Brighton Beach area. Figure 1.1 shows the area associated with the TEPA.

Due to the proximity to the Canada-U.S. border and the resulting high rate of traffic through the City of Windsor, vehicular emissions and their effect on existing air quality and human health are of concern in the Windsor-Essex area. The City of Windsor also has a relatively high fraction of diesel powered transport trucks that are used to move goods into and out of Canada. A primary objective of the Human Health Risk Assessment was to do a comparative evaluation between the technically and environmentally preferred alternative for the Detroit River International crossing and the existing conditions or “Future No Build” scenario in the local area as outlined in the Air Quality Impact Assessment.

This report outlines the methodology used to conduct the Human Health Risk Assessment. The focus of this report is to determine the relative risks of the TEPA when compared to the Future “No Build”. Thus, the uncertainties associated with the air quality model and associated assumptions in the Human Health Risk Assessment will be consistent between the TEPA and “Future No Build” scenarios. The Human Health Risk Assessment relies on the results of the Air Quality Impact Assessment which predicted concentrations associated with the “Future No Build” and TEPA scenarios. The Plaza and Crossing were not assessed in the Human Health Risk Assessment since there were no nearby receptors (see Air Quality Impact Assessment for more details). This assessment evaluates risks associated with predicted changes in particulate and gaseous pollutant concentrations as well as some volatile organic compounds (VOCs).

FIGURE 1.1 KEY PLAN OF THE TECHNICALLY AND ENVIRONMENTALLY PREFERRED ALTERNATIVE

1.1. Technically and Environmentally Preferred Alternative Under Assessment

Following the Public Information Open House (PIOH) in December 2006, a Parkway alternative was developed for the access road based on the below-grade and tunnel alternatives (Alternatives 1B, 2B and 3) and reflecting the study goals and the community input received. With The Windsor-Essex Parkway, the access road for international traffic would be below-grade from Howard Avenue to E.C. Row Expressway, with a number of tunnels. The Right of Way is also expanded in sections with The Windsor-Essex Parkway to provide additional buffer. Figure 1.2 illustrates the tunnel configurations of The Windsor-Essex Parkway.

1.2. Differences Between a Risk Assessment and a Health Study

Human health risk assessments are used to determine if a particular chemical poses a significant risk to human health. If it were possible to prevent humans from being exposed to chemicals then there would be no need to conduct a risk assessment. Since this is an impossible exercise and exposure to many naturally occurring substances also pose health risks, risk assessments become an important tool in evaluating these risks.

Risk assessment helps scientists and regulators identify serious health hazards and determine ways to reduce exposure so that there is no significant health risk to the public. The term “human health risk assessment” is often misinterpreted because people think that a risk assessment will provide information as to whether an exposure to a chemical causes a current health problem or symptom that they are experiencing. Risk assessments do not provide this information; studies that look for these types of linkages are generally epidemiological studies. These studies generally include a survey of health problems in a community and provide a comparison of these health problems to other cities, communities or populations as a whole.

While both of these types of studies are important, health risk assessments and epidemiological studies have different objectives. Most epidemiologic studies examine whether past chemical exposures may be responsible for documented health problems in a specific group of people whereas human health risk assessments evaluate whether current or future chemical exposures will pose health risks to a broad population such as a city or a community. The scientific methods used in a human health risk assessment cannot be used to link individual illnesses to past exposures to chemicals; additionally, health risk assessments and epidemiological studies cannot prove that a specific chemical caused an individual’s illness.

FIGURE 1.2 THE WINDSOR-ESSEX PARKWAY TUNNEL CONFIGURATIONS

I.D.	Location of Tunnel	Tunnel Length (M)	Roof Area (Sq M)
①	Spring Garden	200	9,000
②	Ramp N-E and Labelle Street	240	10,810
④	Grand Marais Road West	120	9,550
⑤	Pulford Street	120	9,705
⑥	Reddock St	120	15,320

I.D.	Location of Tunnel	Tunnel Length (M)	Roof Area (Sq M)
⑦	Cabana Road West	120	8,300
⑧	Huron Church Line	240	14,400
⑪	St. Clair College	120	7,225
⑫	Cousineau Road	120	7,225
⑬	Hearthwood Place	220	19,250
⑮	Oliver Estates Area	240	13,200

Structures 3 9 10 14 16 17 18 are proposed as roadway overpasses

Regulatory bodies use risk assessments to determine drinking water guidelines, site clean-up criteria, the safe use of pesticides to name a few. Human health risk assessments use both sound science and professional judgment and is a constantly developing process.

Health Canada has carried out an epidemiological study in the Windsor area related to mortality and cancer incidence for the period 1979-1999 (Band et al. 2006). The results suggest a potential risk for diseases associated with long-term air pollution exposure such as bronchitis, emphysema, lung cancer and lung cancer incidence and mortality from circulatory diseases. These diseases were attributed to transborder air pollution but are preliminary in nature and further studies are underway to assess chronic cardiorespiratory outcomes in relation to air and traffic pollution.

1.3. Study Objectives

The primary objective of this Human Health Risk Assessment is to determine whether the chemical concentrations emitted from vehicles on the proposed road way for the TEPA have the potential for unacceptable health effects to people located in the immediate area in comparison to the "Future No Build" scenario.

The methods followed in this risk assessment are consistent with procedures outlined by regulatory agencies such as Ontario Ministry of the Environment, Environment Canada, Health Canada, the Canadian Council of Ministers of the Environment (CCME) and the United States Environmental Protection Agency (U.S. EPA).

The chemicals of concern as provided in the Air Quality Impact Assessment include gaseous air pollutants (carbon monoxide, nitrogen oxides and sulphur dioxide), volatile organic compounds, and particulate matter.

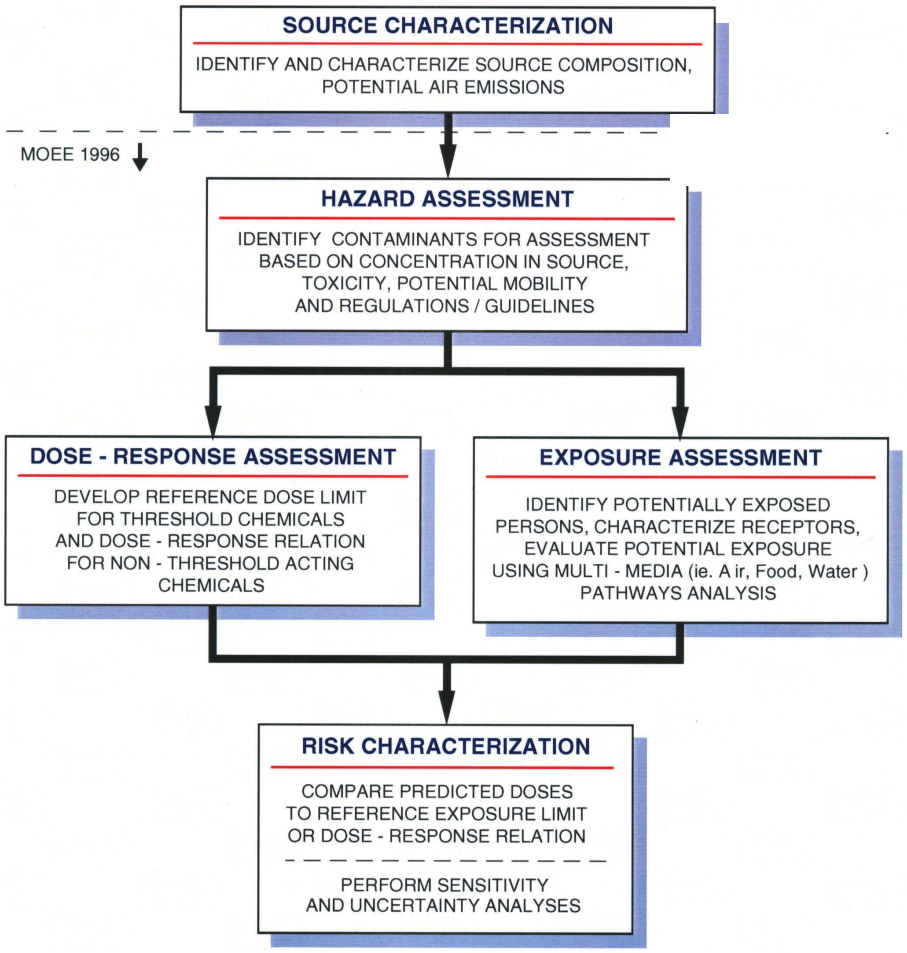
The human health risk assessment is divided into four different steps (see Figure 1.3) as provided in the various regulatory frameworks. They are:

- the problem formulation stage, in which the various chemicals of concern, receptors, exposure pathways, and scenarios are identified;
- the exposure assessment, where predicted exposures are calculated for the various receptors and chemicals of concern;
- the hazard assessment, in which exposure limits for the chemicals of concern are determined; and,
- the risk characterization stage, where the exposure and hazard assessment steps are integrated.

Since the TEPA for the Detroit River International Crossing is currently in the design stage, it is not possible to directly measure emissions associated with the proposed

roadway, their potential effect on the ground level air concentrations or possible health outcomes in the community. Therefore, the risk assessment used various mathematical models to predict emission rates, rates of exposure and potential impacts on various human receptors considered to be representative of the community. These procedures include consideration of exposure through inhalation and ingestion of chemicals associated with vehicle emissions through direct deposition to vegetation, as well as deposition to soils and uptake by vegetation.

FIGURE 1.3 HUMAN HEALTH RISK ASSESSMENT PROCESS



The possibility of short-term (1 hour, 8 hour, 24 hour) and long-term (annual) adverse human health outcomes were assessed based on exposures at the maximum concentration that would occur at different areas along the roadway. The use of the maximum predicted concentrations in each area covered the range of air concentrations that potentially could occur from activities on the roadway. Cautious assumptions of exposure were used in the assessment to ensure that risks were not underestimated and this most likely resulted in an over-estimate of exposure.

One example of a cautious assumption is that it was assumed that residents were exposed to vehicle emissions 24 hours a day, 7 days a week over their entire lifetime.

The Human Health Risk Assessment results were expressed as deterministic hazard quotients and cancer risk levels for long-term exposures, as well as hazard quotient values for both short-term and long-term exposures to gaseous air pollutants. In general, regulatory agencies concur that a hazard quotient value below one (1) (for assessing gaseous air pollutants since they include background), a hazard quotient of 0.2 (for pathways assessment examining direct and indirect exposure from air pathways) or cancer risk levels of one in a million (1×10^{-6}) are not significant. The hazard quotient and incremental risk limits are those set by the Ontario Ministry of the Environment. The use of an incremental risk limit of 1×10^{-6} as set out by the Ontario Ministry of the Environment is more stringent than the 1×10^{-5} incremental risk limit that is acceptable to Health Canada and the U.S. EPA.

2. Problem Formulation

The primary objective of this Human Health Risk Assessment is to determine whether the chemical concentrations emitted from vehicles on the proposed roadway for the TEPA have the potential for unacceptable health effects to people located in the immediate area in comparison to the "Future No Build" scenario.

The basis of the evaluation of the Human Health Risk Assessment involved information from the Air Quality Impact Assessment reports together with input from the air quality specialists for the project.

2.1. Identification and Selection of Chemicals of Concern

The list of chemicals of concern (COC) selected for the current assessment is based on information obtained from the Air Quality Impact Assessment. The list includes gaseous air pollutants, particulate matter, and certain volatile organic compounds. Table 2.1 provides a list of the chemicals of concern that are evaluated in this assessment. These chemicals were the same as those modelled in Air Quality Impact Assessment. As described previously, the predicted short–term (1 hour, 8 hour and 24 hour) and long-term air concentrations (annual averages) of these chemicals are estimated by modelling at the maximum concentration location at various areas along the proposed roadway.

TABLE 2.1 CHEMICALS OF CONCERN SELECTED FOR THIS ASSESSMENT

Gaseous Air Pollutants
Carbon monoxide (CO)
Ammonia (NH_3)
Nitrogen oxides (as NO_2)
Sulphur dioxide (SO_2)
Volatile Organic Compounds
Benzene
1,3-butadiene
Formaldehyde
Acetaldehyde
Acrolein
Particulate Matter
Fine particulate matter ($PM_{2.5}$, PM_{10})

2.2. Receptor Selection

For this assessment, several different areas along the proposed roadway were selected. These areas are:

- Ball Field (2479);
- Bellwood Estates (58, 403);
- Grand Marais Roads (74, 186);
- Heritage Estates (910);
- Home for Aged LaSalle (944, 945);
- Huron Estates (295, 410);
- Kendleton Court (781);
- Oliver Estates (858, 1997);
- Reddock (423);
- Residential (2478);
- Southwood Lakes (867);
- Spring Garden (1513, 1644);
- St. Clair College (2480);
- Villa Borghese (828);
- Villa Paradiso Crescent (848).

Figure 2.1 shows the receptor locations along The Windsor-Essex Parkway. These receptor locations are consistent with the receptors used in the Air Quality Assessment. In general two different locations were selected within these areas through discussions with the Air Quality modelling team. These areas generally represented maximum concentration locations within these areas. Three types of residents have been selected for this assessment (adult, toddler and infants) and their characteristics are shown in Table 2.2.

2.2.1 Human Receptor Characterization

The assumptions of the characteristics for the human receptors are shown in Table 2.2 and their physical characteristics are presented in Tables 2.3 and 2.4. The characteristics of the individuals were obtained from Health Canada (2004a) and are considered to be cautious and represent a range of exposures. This includes the adult residential receptor and the toddler residential receptor used in this assessment. Although other types of receptors such as commercial workers may be present in the vicinity of the proposed roadway, the use of the residential receptor at the maximum point of exposure represents the highest exposed receptor as they are assumed to be continuously exposed to chemicals of concern from the proposed roadway for 365 days of the year. Furthermore, the toddler receptor was chosen over other receptors (i.e., child and teen) due to the higher total intake level to body weight ratio.

FIGURE 2.1 RECEPTOR LOCATIONS

For this assessment it has been assumed that all resident receptors drink water obtained from the City of Windsor's potable water system and that this water source is not impacted by potential emissions from the proposed roadway. Section 3, provides maximum predicted soil concentrations after 75 years of deposition of VOCs; with the exception of formaldehyde, these concentrations are so low that they will not be measurable. It was assumed that the resident has a backyard garden and that 7.5% of their annual vegetable consumption is from that garden. This is a conservative estimate of the value adopted by the MOE in Ontario (MOE 2001). The different exposure pathways (water, soil, vegetation, etc.) will be discussed in more detail in Section 3.1. The exposure durations in Tables 2.3 to 2.4 have been chosen to provide a cautious estimate of exposure to air emissions from the proposed roadway.

As discussed above, the use of a resident receptor at the maximum concentration location covers other potential exposures in the area of the proposed roadway. The resident receptor used in this assessment to characterize potential risks associated with the proposed roadway is assumed to be exposed for 75 years at the maximum concentration possible, 24 hours each day of the year. An exposure duration of 75 years was selected to represent a lifetime of exposure for a resident (Health Canada 2004a).

TABLE 2.2 ASSUMED CHARACTERISTICS OF THE HUMAN RECEPTORS

Receptor	Inhalation	Ingestion of Water	Ingestion of Vegetation	Ingestion of Soil
Resident Receptor	Assumed to inhale air from the proposed roadway	Assumed to drink from water source that will not be impacted by the proposed roadway	Assumed to obtain 7.5% of vegetation from the residence	Assumed to ingest some soil from the residence

TABLE 2.3 SUMMARY OF RECEPTOR CHARACTERISTICS FOR ALL LIFE STAGES OF HUMAN RECEPTORS

Parameter	Symbol	Units	Infant	Toddler	Child	Teen	Adult	Source
Soil Ingestion Rate	$R_{ing\text{-}soil}$	(mg/d)	20	80	20	20	20	Richardson 1997
Vegetation Ingestion Rate	$R_{ing\text{-}veg}$	(g/d)	155	172	259	347	325	Richardson 1997
Body Weight	B_w	(kg)	8.2	16.5	32.9	59.7	70.7	Richardson 1997
Fraction of soil and air from residence	F_{soil}	(-)	1	1	1	1	1	Assumed
Fraction of vegetation from residence	F_{veg}	(-)	0.075	0.075	0.075	0.075	0.075	Assumed
Exposure Frequency	EF	(days/yr)	365.25	365.25	365.25	365.25	365.25	Assumed
Exposure Duration	ED	(yr)	0.5	3.5	7	8	56	Assumed
Averaging Time – Carcinogen	AT_C	(days)	27393.75	27393.75	27393.75	27393.75	27393.75	Assumed 75 years
Averaging Time – Non Carcinogen	AT_{NC}	(days)	182.63	1278.38	2556.75	2922	20454	Assumed same as ED

3. Exposure Assessment

The primary objective of the exposure assessment is to predict, using a series of cautious assumptions (see Section 2.2), the potential exposure for the selected receptors to the chemicals of concern (COC) via the pathways identified in the following section (Section 3.1).

A detailed discussion of the air dispersion modelling is provided in the Air Quality Impact Assessment. A detailed discussion of the pathways model used to determine the exposures of humans to chemicals of concern is provided in Appendix A. An example of calculation for one COC is provided (Appendix C) to illustrate how these equations are used to develop the exposures at the receptor location. Similar calculations are performed for all the COC for each receptor. Only chemical and receptor-specific parameters are changed.

3.1. Exposure Pathways

The potential pathways of exposure (Figure 3.1) for the resident are assumed to be the inhalation of particulate matter and gaseous particles outdoors, the ingestion of soil and dust outdoors and the ingestion of locally grown vegetation. As discussed previously, it is assumed that drinking water is obtained from a source that is not impacted by the proposed roadway.

Specific assumptions for the receptor location are outlined in Table 2.2. The pathways are described in more detail below.

The various pathways evaluated were as follows:

- Inhalation of Air: The emissions from the vehicles on the roadway will result in the direct exposure of the human population as the plume impinges down onto the ground level. Human receptors will therefore inhale both gaseous and particle-borne chemicals while outdoors.

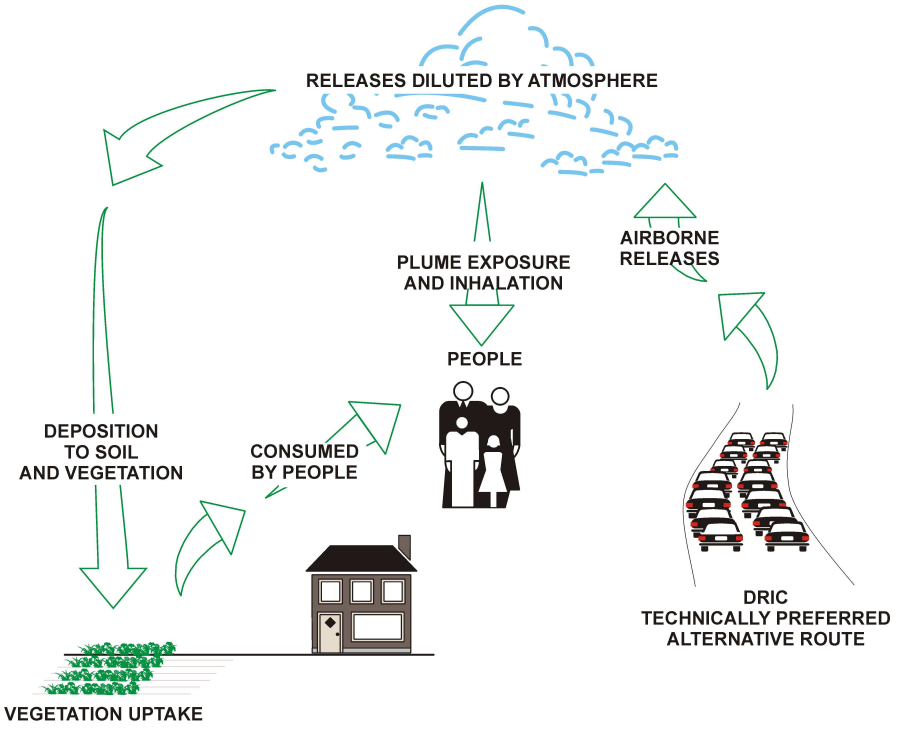
- Inhalation of Soils and Dusts: Human exposure may occur through inhalation of soils and dusts outdoors as the gaseous and particle-borne chemicals emitted from the vehicles on the roadway are deposited onto soils and surfaces. The rate of this deposition is a function of the local meteorological conditions such as wind speed and precipitation rates. These have been discussed in more detail in the Air Quality Impact Assessment.

- Ingestion of Soil: Chemicals emitted from the vehicles on the roadway can be deposited on soil and can be ingested by human receptors outdoors during playing and gardening activities. The toddler receptor is generally the most exposed receptor since they ingest the most amount of soil.

- Ingestion of Locally Grown Vegetation: As chemicals emitted from the vehicles on the roadway are deposited from air-borne emissions, they may contact leaves and fruit of locally grown (backyard gardens) vegetation, where they may remain on the surface or may be absorbed into the plant. Based on information collected in Ontario (MOE 2001), approximately 7.5 % of the vegetable intake of an Ontario resident is from backyard gardens. Deposition of chemicals onto the soil may also result in accumulation in plants via root uptake. Humans are exposed to these chemicals by eating the produce from their backyard gardens.

- Dermal Exposure to Soils and Dusts: Dermal exposure by receptors may occur through direct dermal contact with air-borne chemicals and/or soil and dust on which chemicals have been deposited. In environmental settings, this pathway is insignificant and thus, is not assessed further. With the exception of formaldehyde, the predicted soil concentrations are so small that the dermal exposure pathway will be insignificant.

FIGURE 3.1 POTENTIAL PATHWAYS OF EXPOSURE FOR HUMAN RECEPTORS



3.2. Background and Predicted Concentrations Associated With the Technically and Environmentally Preferred Alternative

Air dispersion modelling of emissions from vehicles traveling on the roadway was carried out as described in the Air Quality Impact Assessment. The predicted short-term and long-term air concentrations were conservatively estimated for three different horizons in time 2015, 2025 and 2035. These concentrations were then used within the Human Health Risk Assessment. Similarly background concentrations were developed in the Air Quality Impact Assessment and used within the risk assessment.

Table 3.1 shows the representative background air concentration in the Windsor area as described in the Air Quality Impact Assessment. Table 3.2 provides the maximum predicted concentrations of gaseous air pollutants (NO_x, SO_x and $PM_{2.5}$) from vehicles on the roadway for the maximum concentration year (generally 2035) for both the "Future No Build" and TEPA. As seen from the Table, NO_x concentrations will be reduced in areas along the roadway for the TEPA; however, no appreciable changes in concentration are observed for SO_x and $PM_{2.5}$ for the "Future No Build" or TEPA scenarios. Appendix B provides a summary of the other concentrations for the other two horizon years (2015 and 2025).

TABLE 3.1 SUMMARY OF BACKGROUND CONCENTRATIONS USED IN TEPA RISK ASSESSMENT

	1 hr	8 hr	24 hr	Annual
NO_2	64	-	56	-
$PM_{2.5}$	-	-	21	10
SO_2	43	-	43	5
CO	-	897	897	-
VOCs	-	-	147	-
Acrolein	-	-	0.16	-
Benzene	-	-	2.7	-
Acetaldehyde	-	-	2.4	-
Formaldehyde	-	-	4.1	-
1,3 Butadiene	-	-	0.17	-

Note: Based on information from the Air Quality Impact Assessment
- - not applicable

TABLE 3.2 MAXIMUM PREDICTED AIR CONCENTRATIONS FOR GASEOUS AIR POLLUTANTS EMITTED FROM VEHICLES FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS IN 2035

	NO_x 1 hr (µg/m^3)		NO_x Annual (µg/m^3)		SO_x 1 hr (µg/m^3)		SO_x 24 hr (µg/m^3)		$PM_{2.5}$ 24 hr (µg/m^3)	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	148.9	83.5	81.6	73.1	32.2	32.3	32.1	32.1	23.6	23.0
Bellwood Estates - 58	225.1	129.0	107.1	80.2	32.9	33.1	32.2	32.2	25.4	23.6
Bellwood Estates - 403	112.8	100.6	80.1	73.3	32.3	32.4	32.1	32.1	22.2	22.7
Grand Marais Roads - 74	197.1	115.1	103.2	76.8	32.7	32.9	32.2	32.2	25.3	23.1
Grand Marais Roads - 186	156.9	103.0	91.4	74.4	32.5	32.6	32.1	32.1	23.7	22.5
Heritage Estates - 910	108.7	80.0	73.8	71.4	32.2	32.2	32.0	32.0	21.7	21.7
Home for Aged LaSalle - 944	147.9	84.6	77.4	71.4	32.3	32.4	32.0	32.0	21.7	21.5
Home for Aged LaSalle - 945	160.5	85.2	79.1	71.3	32.3	32.4	32.0	32.0	21.7	21.6
Huron Estates - 295	121.1	98.0	81.8	73.2	32.4	32.5	32.1	32.1	22.5	22.3
Huron Estates - 410	109.8	89.5	78.7	72.3	32.3	32.4	32.1	32.1	22.2	21.9
Kendleton Court - 781	186.0	87.5	88.2	74.1	32.3	32.4	32.1	32.1	23.2	23.4
Oliver Estates - 858	155.4	91.4	78.6	73.9	32.2	32.5	32.0	32.0	21.8	23.0
Oliver Estates - 1997	178.9	100.6	80.5	74.5	32.3	32.7	32.1	32.1	22.3	23.4
Reddock - 423	142.3	88.0	79.6	72.3	32.3	32.4	32.0	32.0	22.3	22.0
Residential - 2478	117.5	87.3	74.6	71.6	32.3	32.4	32.0	32.0	21.8	21.7
Southwood Lakes - 867	110.6	80.1	76.2	72.2	32.2	32.3	32.0	32.0	21.7	21.8
Spring Garden - 1513	98.4	100.2	75.3	74.2	32.4	32.7	32.1	32.1	21.5	22.5
Spring Garden - 1644	98.4	90.7	75.5	73.4	32.4	32.4	32.1	32.1	21.7	22.0
St. Clair College - 2480	99.3	78.3	76.8	71.6	32.1	32.2	32.0	32.0	22.3	22.0
Villa Borghese - 828	171.8	83.3	87.7	72.5	32.2	32.3	32.1	32.1	22.5	22.0
Villa Paradiso Cres. - 848	119.9	81.8	77.1	72.7	32.2	32.3	32.0	32.0	22.4	22.7

TABLE 3.3 MAXIMUM PREDICTED AIR CONCENTRATIONS FOR VOLATILE ORGANIC CHEMICALS EMITTED FROM VEHICLES FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS IN 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	2.372	2.384	0.169	0.169	4.376	4.371	2.365	2.364	0.154	0.154
Bellwood Estates - 58	2.551	2.562	0.193	0.190	4.521	4.453	2.423	2.398	0.163	0.158
Bellwood Estates - 403	2.379	2.391	0.169	0.170	4.367	4.367	2.362	2.362	0.153	0.153
Grand Marais Roads - 74	2.499	2.501	0.186	0.183	4.490	4.436	2.410	2.390	0.161	0.157
Grand Marais Roads - 186	2.438	2.437	0.178	0.176	4.429	4.397	2.386	2.374	0.157	0.155
Heritage Estates - 910	2.343	2.353	0.164	0.165	4.339	4.343	2.351	2.353	0.151	0.152
Home for Aged LaSalle - 944	2.354	2.361	0.166	0.166	4.348	4.349	2.354	2.355	0.152	0.152
Home for Aged LaSalle - 945	2.357	2.363	0.166	0.166	4.353	4.351	2.356	2.356	0.152	0.151
Huron Estates - 295	2.391	2.396	0.170	0.170	4.373	4.377	2.365	2.366	0.154	0.154
Huron Estates - 410	2.373	2.378	0.168	0.168	4.358	4.358	2.359	2.359	0.153	0.152
Kendleton Court - 781	2.382	2.402	0.170	0.172	4.379	4.393	2.367	2.372	0.154	0.155
Oliver Estates - 858	2.361	2.413	0.166	0.173	4.345	4.388	2.353	2.371	0.152	0.154
Oliver Estates - 1997	2.375	2.425	0.168	0.175	4.360	4.401	2.359	2.375	0.153	0.155
Reddock - 423	2.363	2.382	0.167	0.169	4.356	4.363	2.358	2.361	0.153	0.153
Residential - 2478	2.346	2.362	0.164	0.166	4.345	4.347	2.353	2.354	0.152	0.152
Southwood Lakes - 867	2.361	2.391	0.166	0.169	4.345	4.360	2.354	2.360	0.152	0.152
Spring Garden - 1513	2.388	2.422	0.169	0.173	4.354	4.379	2.358	2.367	0.152	0.154
Spring Garden - 1644	2.376	2.403	0.168	0.171	4.353	4.369	2.357	2.363	0.152	0.153
St. Clair College - 2480	2.350	2.356	0.165	0.165	4.347	4.345	2.354	2.354	0.152	0.152
Villa Borghese - 828	2.372	2.386	0.168	0.169	4.362	4.356	2.360	2.358	0.153	0.153
Villa Paradiso Cres. - 848	2.355	2.376	0.166	0.168	4.351	4.366	2.356	2.362	0.152	0.153

Note: All concentrations in mg/m^3

Table 3.3 provides the maximum predicted air concentrations for VOCs for the Year 2035. As seen from the table, there is very little difference in the concentrations of VOCs between the "Future No Build" and TEPA scenarios. Appendix B provides a summary of the other concentrations for the other two horizon years (2015 and 2025).

Table 3.4 provides the maximum predicted incremental soil concentrations off-site resulting from emissions from vehicles for both the "Future No Build and TEPA scenarios for the Year 2035. As seen from the Table, there is very little difference in the concentrations between the two scenarios. With the exception of formaldehyde, the concentrations of the other VOCs are so small that they would not be measured. Appendix B provides a summary of the other concentrations for the other two horizon years (2015 and 2025).

3.3. Exposure Rates

The predicted exposure rates for the receptors were obtained from the pathways modelling (see Appendix A) and are provided in this section.

3.3.1 Inhalation

The assessment of potential effects due to inhalation is evaluated based on air concentrations. For assessment of non-carcinogenic effects the air concentrations provided in Table 3.2 were used directly in the assessment for this pathway. For carcinogenic effects the air concentration is adjusted for the exposure duration (30 years of a 75 year lifetime). Table 3.5 summarizes the inhalation dose used in the assessment for 2035 (the doses for the other horizon years are provided in Appendix B).

3.3.2 Ingestion

The dose from ingestion includes the pathways of soil or dust and backyard produce. The predicted concentration of COC in each of these environmental media is ultimately based on the estimated concentration of COC in emissions from the vehicles along the roadway. The transfer of COC to soil and vegetation results in predictions of COC concentrations in these environmental media, and the ingestion dose to human receptors was calculated as described in Appendix A.2. A summary of the total ingestion dose (mg/(kg d)) for the toddler resident at the various locations along the roadway for the Year 2035 is given in Table 3.6 for a toddler and Table 3.7 for a composite receptor. The total ingestion dose represents the sum of the dose from each individual ingestion pathway (e.g., soil, dust, vegetation). The ingestion doses for the other horizon years (2015 and 2025) are presented in Appendix B.

TABLE 3.4 MAXIMUM PREDICTED SOIL CONCENTRATIONS FOR VOLATILE ORGANIC CHEMICALS EMITTED FROM VEHICLES FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS IN 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.00352	0.00353	0.0000134	0.0000134	73.2	73.1	0.00197	0.00197	0.000228	0.000228
Bellwood Estates - 58	0.00378	0.00380	0.0000153	0.0000150	75.6	74.5	0.00202	0.00200	0.000242	0.000234
Bellwood Estates - 403	0.00353	0.00354	0.0000134	0.0000134	73.0	73.0	0.00197	0.00197	0.000227	0.000227
Grand Marais Roads - 74	0.00370	0.00371	0.0000147	0.0000145	75.1	74.2	0.00201	0.00199	0.000239	0.000233
Grand Marais Roads - 186	0.00361	0.00361	0.0000141	0.0000139	74.1	73.5	0.00199	0.00198	0.000233	0.000230
Heritage Estates - 910	0.00347	0.00349	0.0000130	0.0000130	72.6	72.6	0.00196	0.00196	0.000224	0.000225
Home for Aged LaSalle - 944	0.00349	0.00350	0.0000131	0.0000131	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Home for Aged LaSalle - 945	0.00349	0.00350	0.0000131	0.0000131	72.8	72.8	0.00196	0.00196	0.000225	0.000224
Huron Estates - 295	0.00354	0.00355	0.0000134	0.0000134	73.1	73.2	0.00197	0.00197	0.000228	0.000228
Huron Estates - 410	0.00352	0.00352	0.0000133	0.0000133	72.9	72.9	0.00196	0.00196	0.000227	0.000225
Kendleton Court - 781	0.00353	0.00356	0.0000134	0.0000136	73.2	73.5	0.00197	0.00197	0.000228	0.000230
Oliver Estates - 858	0.00350	0.00358	0.0000131	0.0000137	72.7	73.4	0.00196	0.00197	0.000225	0.000228
Oliver Estates - 1997	0.00352	0.00359	0.0000133	0.0000138	72.9	73.6	0.00196	0.00198	0.000227	0.000230
Reddock - 423	0.00350	0.00353	0.0000132	0.0000134	72.8	73.0	0.00196	0.00196	0.000227	0.000227
Residential - 2478	0.00348	0.00350	0.0000130	0.0000131	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Southwood Lakes - 867	0.00350	0.00354	0.0000131	0.0000134	72.7	72.9	0.00196	0.00196	0.000225	0.000225
Spring Garden - 1513	0.00354	0.00359	0.0000134	0.0000137	72.8	73.2	0.00196	0.00197	0.000225	0.000228
Spring Garden - 1644	0.00352	0.00356	0.0000133	0.0000135	72.8	73.1	0.00196	0.00197	0.000225	0.000227
St. Clair College - 2480	0.00348	0.00349	0.0000130	0.0000130	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Villa Borghese - 828	0.00352	0.00354	0.0000133	0.0000134	72.9	72.8	0.00196	0.00196	0.000227	0.000227
Villa Paradiso Cres. - 848	0.00349	0.00352	0.0000131	0.0000133	72.8	73.0	0.00196	0.00197	0.000225	0.000227

Note: All units in mg/kg

TABLE 3.5 INHALATION DOSE FOR A TODDLER/COMPOSITE RECEPTOR EXPOSED TO VOLATILE ORGANIC CHEMICALS FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS FOR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Bellwood Estates - 58	$2.6x10^{-3}$	$2.6x10^{-3}$	$1.9x10^{-4}$	$1.9x10^{-4}$	$4.5x10^{-3}$	$4.5x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Bellwood Estates - 403	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Grand Marais Roads - 74	$2.5x10^{-3}$	$2.5x10^{-3}$	$1.9x10^{-4}$	$1.8x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Grand Marais Roads - 186	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.8x10^{-4}$	$1.8x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Heritage Estates - 910	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 944	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 945	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 295	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 410	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Kendleton Court - 781	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.6x10^{-4}$
Oliver Estates - 858	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 1997	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.8x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.6x10^{-4}$
Reddock - 423	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Residential - 2478	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Southwood Lakes - 867	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1513	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1644	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
St. Clair College - 2480	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Borghese - 828	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Paradiso Cres. - 848	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$

Note: All doses are in mg/m^3. The inhalation dose for formaldehyde is for the composite receptor as it is considered to be a carcinogen.

TABLE 3.6 INGESTION DOSE FOR A TODDLER RECEPTOR EXPOSED TO VOLATILE ORGANIC CHEMICALS FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS FOR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**
Ball Field - 2479	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$7.0x10^{-5}$	$7.0x10^{-5}$
Bellwood Estates - 58	$6.8x10^{-5}$	$6.8x10^{-5}$	NA	NA	5.1	5.0	$8.2x10^{-4}$	$8.1x10^{-4}$	$7.4x10^{-5}$	$7.2x10^{-5}$
Bellwood Estates - 403	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Grand Marais Roads - 74	$6.7x10^{-5}$	$6.7x10^{-5}$	NA	NA	5.1	5.0	$8.1x10^{-4}$	$8.1x10^{-4}$	$7.3x10^{-5}$	$7.1x10^{-5}$
Grand Marais Roads - 186	$6.5x10^{-5}$	$6.5x10^{-5}$	NA	NA	5.0	5.0	$8.0x10^{-4}$	$8.0x10^{-4}$	$7.1x10^{-5}$	$7.0x10^{-5}$
Heritage Estates - 910	$6.2x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$7.9x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Home for Aged LaSalle - 944	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$7.9x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Home for Aged LaSalle - 945	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$7.9x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Huron Estates - 295	$6.4x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$7.0x10^{-5}$	$7.0x10^{-5}$
Huron Estates - 410	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Kendleton Court - 781	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	5.0	$8.0x10^{-4}$	$8.0x10^{-4}$	$7.0x10^{-5}$	$7.0x10^{-5}$
Oliver Estates - 858	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$7.0x10^{-5}$
Oliver Estates - 1997	$6.3x10^{-5}$	$6.5x10^{-5}$	NA	NA	4.9	5.0	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$7.0x10^{-5}$
Reddock - 423	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Residential - 2478	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$7.9x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Southwood Lakes - 867	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Spring Garden - 1513	$6.4x10^{-5}$	$6.5x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$7.0x10^{-5}$
Spring Garden - 1644	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
St. Clair College - 2480	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$7.9x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Villa Borghese - 828	$6.3x10^{-5}$	$6.4x10^{-5}$	NA	NA	4.9	4.9	$8.0x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$
Villa Paradiso Cres. - 848	$6.3x10^{-5}$	$6.3x10^{-5}$	NA	NA	4.9	4.9	$7.9x10^{-4}$	$8.0x10^{-4}$	$6.9x10^{-5}$	$6.9x10^{-5}$

Note: All doses are in mg/kg d. NA –not applicable since 1,3 butadiene is considered a carcinogen and thus a dose is only calculated for the composite receptor.

TABLE 3.7 INGESTION DOSE FOR A COMPOSITE RECEPTOR EXPOSED TO VOLATILE ORGANIC CHEMICALS FOR BOTH THE FUTURE NO BUILD AND TEPA SCENARIOS FOR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**	**No Build**	**Parkway**
Ball Field - 2479	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Bellwood Estates - 58	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.5x10^{-6}$	$1.5x10^{-6}$	NA	NA	NA	NA	NA	NA
Bellwood Estates - 403	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Grand Marais Roads - 74	$3.4x10^{-5}$	$3.5x10^{-5}$	$1.5x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Grand Marais Roads - 186	$3.4x10^{-5}$	$3.4x10^{-5}$	$1.4x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Heritage Estates - 910	$3.2x10^{-5}$	$3.2x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Home for Aged LaSalle - 944	$3.2x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Home for Aged LaSalle - 945	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Huron Estates - 295	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Huron Estates - 410	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Kendleton Court - 781	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Oliver Estates - 858	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Oliver Estates - 1997	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Reddock - 423	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Residential - 2478	$3.2x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Southwood Lakes - 867	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Spring Garden - 1513	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.4x10^{-6}$	NA	NA	NA	NA	NA	NA
Spring Garden - 1644	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
St. Clair College - 2480	$3.2x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Villa Borghese - 828	$3.3x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA
Villa Paradiso Cres. - 848	$3.2x10^{-5}$	$3.3x10^{-5}$	$1.3x10^{-6}$	$1.3x10^{-6}$	NA	NA	NA	NA	NA	NA

Note: All doses are in mg/kg d. NA –not applicable since formaldehyde, acetaldehyde and acrolein are non- carcinogens, dose is only calculated for the toddler.

4. Hazard Assessment

The hazard assessment involves the identification of the potentially toxic effects of compounds, and the determination of the appropriate exposure limits for the various chemicals. The toxicity reference value (TRV) is defined as the amount of chemical exposure that can occur without any adverse health effects (for threshold or non-cancer causing compounds), or that is associated with an acceptable level of risk (non-threshold or cancer causing compounds).

For this assessment, TRVs are obtained from reputable regulatory agencies such as the Ontario Ministry of the Environment (MOE), Health Canada and the U.S. EPA. In the hazard assessment, data is generally obtained on:

- Slope Factor (SF) or Unit Risk (UR) - (for carcinogens) comprises a plausible upper bound estimate of the probability of a response per unit intake of a chemical over a lifetime. It is used to evaluate the probability of a cancer developing due to a lifetime of exposure. For carcinogens, no threshold is assumed to exist (i.e., every dose presents some risk); or

- Reference Dose (RfD) or Reference Concentration (RfC) - (for non-carcinogens) comprises an estimate of the daily exposure level for a chemical for the entire population, including sensitive populations such as elderly, children and pregnant women, that is not anticipated to present an adverse effect during a lifetime.

The specific values used to assess potential adverse health effects have been selected from sources that are well documented and reviewed and are generally acceptable to the regulatory agencies. The following sources were reviewed for relevant information:

1. Health Canada – Tolerable daily intakes (TDIs) (Health Canada 2004b);
2. U.S. EPA - Toxicity values from the on-line database IRIS (Integrated Risk Information System);
3. Ontario Ministry of the Environment (MOE);
4. Canadian Council of Ministers of the Environment (CCME); and
5. World Health Organization (WHO).

When data were available from more than one information source then the information was reviewed and a determination was made on the most appropriate TRV. In general, the most recent evaluation of the toxicity data was selected as the preferred value. IRIS was the main reference used. The following paragraphs detail the selection of the TRVs. Table 4.1 provides a summary of the TRVs used in this assessment. As seen from the table, some emissions from the BWGGS have both carcinogenic and non-carcinogenic properties. The following section provides the rationale for the selection of the various TRVs.

Formaldehyde

The oral RfD, 0.2 mg/kg-d, was taken from the U.S. EPA IRIS database (2008 – updated 1990), and is based upon a 2 year rat bioassay study at which formaldehyde was administered to the rat in drinking water. Reduction in weight gain was used as the toxicological endpoint, and an uncertainty factor of 100 was used to account for the inter- and intraspecies differences. An inhalation unit risk is provided by the U.S. EPA IRIS database (2006 – updated 1991), and is based upon inhalation study in mice and rats over a period of 24 months. Squamous cell carcinomas were seen in the nasal cavities of the female rats and this was used to extrapolate the inhalation unit risk value of 0.013 $(mg/m^3)^{-1}$.

Acetaldehyde

Due to the lack of oral toxicity information available on this chemical, formaldehyde was used as a surrogate for the oral reference dose. This was considered appropriate given the structural similarity between the two compounds. The U.S. EPA – IRIS database (2008 – updated 1991) provides both a reference concentration and a unit risk factor for acetaldehyde. The reference concentration, 0.009 mg/m^3, is based upon an acute rat toxicity study at which the toxicity endpoint adopted was the degeneration of the olfactory epithelium. This includes an uncertainty factor of 1000 which takes into account intraspecies variation, interspecies conversion and limitations in the data. The U.S. EPA – IRIS database (2006 – updated 1991) provides a unit risk factor of 0.022 $(mg/m^3)^{-1}$. The value is based upon the formation of nasal squamous cell carcinoma in rats and was extrapolated using linear multistage-variable exposure input form.

Acrolein

The oral reference dose for acrolein was adopted form the U.S. EPA – IRIS database (2008 – updated 2003). The value, 0.0005 mg/kg-day, is based upon a chronic oral gavage study at which acrolein was administered to rats in water. A decrease survival rate was taken as the toxicological endpoint, and a NOAEL of 0.05 mg/kg-day was adopted. An uncertainty factor of 100 was applied to take into account interspecies and intraspecies variation. Similarly, the reference concentration for acrolein was adopted from the U.S. EPA database (2006 – updated 2003). The subchonic inhalation study was based upon an toxicological endpoint of nasal lesions in rats. A human equivalent LOAEL of 0.02 mg/m^3 was determined combined with an

uncertainty factor of 1000 (3 for interspecies variation, 3 use of a LOAEL, 10 for intraspecies variation, and 10 for use of a subchronic inhalation study) results in a reference concentration of 2 x 10^{-5} mg/m^3.

1,3 – Butadiene

The oral slope factor, 0.18 (mg/kg-day)$^{-1}$ is based upon an intermittent inhalation study on mice, at which tumours were observed at multiple sites (U.S. EPA 1998c). The inhalation slope factor of 1,3 – butadiene is based linear extrapolation model from human data on the increased incidence of leukemia associated with occupational exposure (U.S. EPA – IRIS database, 2008 updated 2002). An inhalation unit risk of 0.03 (mg/m^3)$^{-1}$ was derived.

Gaseous Air Pollutants

In general, the adverse effects of exposure to gaseous air pollutants are associated with irritation of the tissues of the eyes and upper and lower respiratory systems. Exposures to the gaseous air pollutants (e.g. SO_2, NH_3, NO_2, CO) are assessed using TRVs obtained from the World Health Organization (WHO). Table 4.2 provides a summary of the TRVs used for gaseous air pollutants.

For NO_2, the WHO short-term guideline is based on human and animal studies which indicate that adverse effects are not observed at concentrations below 200 µg/m^3 (WHO 2005). Studies on bronchial responsiveness in asthmatics show an increased responsiveness at concentrations above 200 µg/m^3 and laboratory studies show a direct effect on pulmonary function in asthmatics at concentrations in the order of 560 µg/m^3. The use of the 200 µg/m^3 is protective of sensitive individuals and has no built in safety factors. The annual guideline of 40 µg/m^3 is set to protect the public from gaseous effects of NO_2. This is based on the fact that no abatement methods are designed to reduce NO_2. Epidemiological evidence in children with asthma indicates that bronchitic symptoms increase with increasing NO_2 concentrations. There are also studies which indicate that there is some evidence of effects of respiratory symptoms in infants below 40 µg/m^3 (WHO 2005). However, there are other confounding variables making it difficult to determine whether the effects are due to NO_2 only or a mixture of air pollutants. Thus, the WHO indicates that there is insufficient health-based evidence at present to warrant changing the annual NO_2 annual guideline of 40 µg/m^3.

The short-term 1 hour value from the WHO is based on exercising asthmatics who showed changes in pulmonary function as well as respiratory symptoms after a short-term. The 24 hour guideline for SO_2 has been updated in 2005 by the World Health Organization – the new guideline is about six times lower than the guideline set in 2000 and is based on epidemiological studies from 2003 onwards. These studies indicated that there was a major decrease in childhood respiratory disease and all-age mortality when the sulphur content in fuels was substantially reduced. Several studies by Wong *et al.* (2002), Pope *et al.* (2002) and Burnett *el al.* (2004) indicate that there is no threshold for health effects at 24 hour SO_2 concentration in the range of 5-40 µg/m^3 and therefore the set the guideline at 20 µg/m^3. The WHO

acknowledges the difficulty in achieving the new guideline value in the short-term, and has suggested a stepped approach using the interim value of 125 µg/m^3 shown in Table 4.2. The WHO also has a second interim value of 50 µg/m^3 which they indicate is an intermediate goal based on a reduction of motor vehicle emissions, industrial emissions and/or emissions from power plant production. The WHO suggests that this is a reasonable and feasible goal for some developing countries and would lead to significant health improvements. It should be noted that these recommended guideline values for sulphur dioxide are not linked with guidelines for particles. WHO further noted in their *Air Quality Guidelines Global Update* (2005) that an annual guideline for SO_2 is not necessary since compliance with the 24 hour level will assure low levels for the annual average. Therefore, no annual health based guideline is provided.

The health based guidelines for CO are based on the maintenance of a blood COHb level below 2.5% for the protection of non-smoking middle-aged and elderly population groups with coronary artery disease from heart attacks and to protect fetuses from untoward hypoxic effect. Thus, the 1 hour level of 30,000 µg/m^3 and an 8 hour level of 10,000 µg/m^3 was derived.

TABLE 4.1 TOXICITY REFERENCE VALUES FOR HUMAN RECEPTORS

Chemical of Concern	Oral		Inhalation		Source
	SF	RfD	UR	RfC	
	$(mg/kg\text{-}d)^{-1}$	(mg/kg-d)	$(mg/m^3)^{-1}$	(mg/m^3)	
1,3-butadiene	1.8		0.03		Oral-b, Inhalation-a
Formaldehyde		0.2	0.013		a
Acetaldehyde		0.2	0.022	0.009	Oral-c, Inhalation-a
Acrolein		0.0005		2×10^{-5}	a

Note: a) IRIS, U.S. EPA (2008)
b) U.S. EPA (1998c)
c) assumed toxicity data for formaldehyde

TABLE 4.2 TOXICITY REFERENCE VALUES FOR GASEOUS AIR POLLUTANTS

Gaseous Air Pollutants		Concentration (µg/m³)	Jurisdiction
CO	1 hour	30,000	WHO (2000)
	8 hour	10,000	WHO (2000)
NO_2	1 hour	200	WHO (2005)
	Annual	40	WHO (2005)
SO_2	1 hour	350	WHO (2005)
	24 hour	125*	WHO (2000, 2005)
	24 hour	20	WHO (2005)

Note:
* Interim guideline

Particulate Matter

Particulate matter describes all airborne solid and liquid particles of microscopic size, with the exception of pure water. The suspended portion of particulate matter generally consists of particles less than 40 to 50 microns (µm) in diameter. These particles include a broad range of chemical species, such as elemental and organic carbon compounds, sulphates, nitrates and trace metals. Recently there has been a large focus on fine particles less than 2.5 µm since these particles penetrate deeper into the airways. The World Health organization (WHO) has concluded that fine particulate matter ($PM_{2.5}$) are more hazardous to health than larger particles since the larger particles get filtered out by the fine hairs in the nostrils.

There is a growing body of scientific studies linking air pollutants and health impacts. Recent assessments of the available health data are continuing a trend that imply a stronger link between PM and short-term and long-term adverse health impacts. In addition, the association is estimated to occur at levels lower than previously considered as applicable. This has motivated some regulators to re-assess the potential impact of particulate matter pollution on public health (CARB, 2008).

Many studies over the past few years have indicated that particulate matter (PM) in the air is associated with various adverse health effects in people who already have compromised respiratory systems such as asthma, chronic pneumonia and cardiovascular problems. The World Health Organization (WHO) in 2004 provided a summary of the effects relating to particulate matter. The WHO Working Group stated that in the absence of clearly defined thresholds in exposure-response relationships for both long-term and short-term health effects, and the fact that these exposure-response relationships had been established at currently observed particulate matter exposure ranges, it can be concluded that adverse health effects from particulate matter exposure are occurring at the levels of exposure currently experienced in urban areas in Europe. Since the conclusions were based on multi-city studies in the U.S., Canada and Europe, it suggests that health impacts also occur at particulate matter levels commonly observed in Canada. The following table provides a summary of the health effects associated with particulate matter.

TABLE 4.3 IMPORTANT HEALTH EFFECTS ASSOCIATED WITH EXPOSURE TO FINE PARTICULATE MATTER

Effects Related to Short-term Exposure	Effects Related to Long-term Exposure
Lung inflammatory reactions	Increase in lower respiratory symptoms
Respiratory symptoms	Reduction in lung function in children
Adverse effects on the cardiovascular system	Increase in chronic obstructive pulmonary disease
Increase in medication usage	Reduction in lung function in adults
Increase in hospital admissions	Reduction in life expectancy, owing mainly to cardiopulmonary mortality and probably to lung cancer
Increase in mortality	

Source: WHO (2004)

The recent report by the California Environmental Protection Agency Air Resources Board (CARB 2008), provided a discussion as to a threshold level below which health effects are not observed from exposure to $PM_{2.5}$.

The WHO and other agencies indicate that for particulate matter adverse health effects are occurring at exposures that are currently being experienced by urban populations. The WHO also indicates that there is little evidence to indicate that there is any threshold below which no adverse health effects would be anticipated. The low end concentration for which adverse health effects have been demonstrated is in the order of 3 to 5 $\mu g/m^3$. The WHO has not indicated whether this is on an annual basis or a 24-hour basis; however, based on the scientific literature, it has been assumed that this concentration is an annual concentration.

The Canadian Environmental Protection Act/Federal Provincial Advisory Committee Working Group on Air Quality Objectives and Guidelines (CEPA/FPAC WGAQOG) recommends a 24 hour average $PM_{2.5}$ health reference level of 15 $\mu g/m^3$ below which statistically significant health effects cannot be determined.

CARB (2008) indicated that 7 $\mu g/m^3$ may serve as a possible threshold since this level was the lowest concentration observed in an American Cancer Society study carried out by Pope *et al.* (2002). This large cohort study provided evidence that exposures to $PM_{2.5}$ as low as 7 $\mu g/m^3$ can be associated with premature death. This threshold was considered in this assessment as the health based limit.

The United States Environmental Protection Agency in 2004 also completed a comprehensive review of epidemiological studies on the human health effects associated with particulate matter inhalation. The document, *Air Quality Criteria for Particulate Matter* (U.S. EPA 2004), provides a synthesis of the available information summarizing epidemiological and toxicological studies prior to 2004 and combines it with the previous reviews conducted by the U.S. EPA (1996). Some of the relevant conclusions include:

- A large majority of relevant mortality studies show a statistically positive correlation with concentration of PM_{10}. Based on several multi-city studies in the U.S., Canada and Europe, statistically significant associations have been developed for cardiovascular and respiratory mortality with effect estimates ranging from 1.0 to 3.5 % (per 50 $\mu g/m^3$ PM_{10} increment);

- A growing body of epidemiologic evidence that confirms short - and long - term exposure to $PM_{2.5}$ is associated with various mortality or morbidity endpoints effects. Cardiovascular and respiratory mortality risks show positive correlations; however, the respiratory risks are not statistically significant. For multi-city studies, there is a 1 to 3.5 % increased risk of mortality per 25 $\mu g/m^3$ $PM_{2.5}$ increment;

- There are positive statistical associations with hospitalization for cardiovascular and respiratory diseases with exposure to both PM_{10} and $PM_{2.5}$; and

- Evidence suggests that not only $PM_{2.5}$ but coarse thoracic particles (e.g., $PM_{10-2.5}$) may contribute in exacerbating various respiratory conditions (e.g., asthma). Furthermore, there is new evidence suggesting a likely increase in the occurrence of chronic bronchitis associated with particulate matter exposure, especially long-term particulate matter exposure.

There are several scientific methods and procedures to establish a “cause and effect” relationship between air pollutants and human morbidity/mortality. Three types of scientific inquiry that have been used frequently in the past are:

- epidemiological studies,

- mechanistic studies and

- exposure studies.

This section provides a short summary overview of some recent studies with particular emphasis on epidemiologic studies. It does not attempt to describe all of the studies available, but only to highlight what may be considered important recent additions to the already large body of knowledge.

Epidemiological Studies

These studies are based on associations between air pollution concentrations and the health of populations. A positive association between the two parameters infers a common relationship between them. There are two types of studies, *"time series" series'* and *"cohort"* studies and each has different study design criteria and strengths/weaknesses of their conclusions.

Over the past two decades, these types of studies have provided the strongest evidence of a cause-effect relationship. These types of studies have been possible with the improved sophistication of epidemiologic methods. Subtle features in environment-related health outcomes have been identified despite the strength of masking effects such as cigarette smoking, and body mass index.

The strength of the evidence comes from several large-scale studies that have demonstrated a relationship between PM and adverse health effects. These large studies have demonstrated consistent findings after an intensive re-analysis of the original data and procedures. In addition, new information on the study cohorts confirms the original findings and demonstrates a continuance of the effects into later years of life.

There are several thousands of epidemiological studies that can now show some association between air pollutants and health. Generally, there are more studies that demonstrate the adverse impacts of short-term exposures. These tend to be time-based series analysis. The cohort studies have shown some relationships between long-term exposures and the occurrence of chronic diseases.

Short-term Effects

One of the studies is the National Mortality and Morbidity Air Pollution Study (NMMAPS) that has evaluated data from 90 large U.S. cities (Dominici *et al* 2003). This study has shown an increase in cardiopulmonary mortality. In the short-term (within 1 to 2 days after air pollution exposure) the cardiopulmonary mortality increased by 0.21% for each 10 $\mu g/m^3$ increase in PM_{10}. The importance of this is that the particulate matter exposures that North Americans breathe on an almost daily basis have a measurable impact in our daily mortality total.

Dominici *et al.* (2006) re-examined the risks of cardiovascular and respiratory effects based upon hospital admissions associated with short-term exposure to $PM_{2.5}$. The results of the study indicate a short-term increase in hospital admission rates associated with $PM_{2.5}$ for all of the health outcomes (i.e., cerebrovascular disease, peripheral vascular disease, ischemic heart disease, heart rhythm, heart failure, respiratory tract infection, and chronic obstructive pulmonary disease) except injuries. The largest association was for heart failure, which had a 1.28 % increase in risk per 10 $\mu g/m^3$ increase in same-day $PM_{2.5}$ concentration.

Pope and Dockery's (2006) summary comments on the results of short-term risks of air pollutants are very useful for putting these results into perspective:

"It seems unlikely *that relatively small elevations in exposure to particulate air pollution over short periods of only 1 or a few days could be responsible for very large increases in death. In fact, these studies of mortality and short-term daily changes in PM are observing small effects. For example, assume that a short-term elevation of $PM_{2.5}$ of 10 µg/m^3 results in an ~1% increase in mortality. Based on the year 2000 average death rate for the United States (8.54 deaths/1000 per year), a 50-ug/m^3 short-term increase in $PM_{2.5}$ would result in an average of only 1.2 deaths per day in a population of 1 million (compared with an expected rate of ~23.5/day). That is, on any given day, the number of people dying because of PM exposure in a population is small.*

It is remarkable that these studies of mortality and short-term changes in PM are capable of observing such small effects. Uncertainties in estimating such small effects legitimately create some doubts or concerns regarding the validity or accuracy of these estimates. Nevertheless, associations between daily changes in PM concentrations and daily mortality counts continue to be observed in many different cities and, more importantly, in large multi-city studies, which have much less opportunity for selection or publication bias. The estimated size of these associations is influenced by the methods used to control for potential confounding by long-term time trends, seasonality, weather, and other time-dependent covariates. However, numerous researchers using various methods, including alternative time series analytic approaches and case-crossover designs, continue to fairly consistently observe adverse mortality associations with short-term elevations in ambient PM."

Although there is a link to high pollution episodes and mortality within one to two days following an event (Dominici *et al.* 2003, 2006), there is a growing body of evidence that indicates long-term chronic outcomes are occurring at lesser pollution levels.

Long-term Effects

The American Cancer Society and the Harvard Six Cities studies are both landmark cohort studies that have shown a link between $PM_{2.5}$ and mortality. These two studies represent the most important findings that suggested that relatively low PM levels are associated with long-term adverse health effects in populations.

- In the last five years, two very important early studies have been re-evaluated with current methods. The original findings of the studies have been confirmed with some additions to the overall study conclusions. These re-evaluations have served to strengthen the validity of findings. (Dockery *et al.*, 1993, Krewski *et al.*, 2000).

- The re-analysis of the American Cancer Society data indicated the long-term *all-cause*, *cardiopulmonary*, and *lung cancer mortality* were increased by a 4%, 6%, and 8%, respectively, for each 10 µg/m^3 increase in fine particulate matter (Pope *et al.* 2002).

- Additional follow-up studies for ACS cohort and for 6-cities cohorts have also been completed in the past 2 years. Notably the 6-cities have experienced lower PM levels since the original. Health impacts have also lessened and it is assumed that there is a relationship to PM levels. *"These findings suggest that mortality effects of long-term air pollution may be at least partially reversible over periods of a decade"*.

The above noted studies are important because they use a large statistical pool of high quality health and air pollution data. It is also important that the studies here have identified mortality as the endpoint.

Several other morbidity endpoints such as asthma, bronchitis, wheeziness, ear/nose/throat infections, cardiac arrhythmia, thrombosis, atherosclerotic lesion formation, and others have also been identified. The importance of this is that particulate matter may not only be an important cause of death, but also cause several types of impairment of health and the quality of life in general. By extension, the mortality impact may be measured in increments of a few percent, the measure of morbidity effects may be more widely and deeply distributed in the population.

A somewhat different result was found in the recent reanalysis of the Harvard Six Cities cohort by Laden *et al.* (2006). This reanalysis extended the follow-up of mortality incidence for eight more years. It is notable that $PM_{2.5}$ was estimated from PM_{10} and visibility data and this may not be a good measure of individual exposure. The association of $PM_{2.5}$ with all-cause, cardiovascular, and lung cancer mortality were consistent with the original study. However the associations existed in much different pollution conditions. As for the ACS study, the authors noted "*these finding s suggest that mortality effects of long-term air pollution may be at least partially reversible over periods of a decade*".

Laden *et al.* (2006), extended this further. The results of the analysis indicate that the city-specific adjusted all-cause mortality rate ratios decreased with decreasing $PM_{2.5}$ concentration. Furthermore, cardiovascular mortality, as well as lung cancer mortality, was positively associated with average $PM_{2.5}$ concentration. Respiratory mortality was positively associated with average $PM_{2.5}$ concentration; however, the association was not statistically significant. The study found that for each 10 $\mu g/m^3$ of $PM_{2.5}$ reduced there can be a decrease of 0.73 in the relative risk level specifically due to deaths associated with respiratory and cardiovascular health, but not lung cancer, as the latency period for lung cancer mortality is greater. The authors concluded that the reduced mortality risk for the study population was associated with reduction in $PM_{2.5}$ concentrations.

In a study of daily mortality rates in twenty U.S. cities, Samet *et al*. (2000) determined that a 10 $\mu g/m^3$ increase in PM_{10} resulted in an incremental increase in the mortality rate of 0.5 % for all causes of death. The authors also estimated that the relative rate of death from cardiovascular and respiratory causes was about 0.68 % per 10 $\mu g/m^3$ increase in PM_{10}. A slightly higher value of 0.7 % increase in daily mortality per

10 μg/m^3 increase has been suggested by Levy *et al.* (2000a). Levy *et al.* (1999, 2002a) estimated the impacts of power plants in the Boston and Chicago areas. The impacts of the known emissions of fine particles and secondary-pollutant-forming gases from the plants were estimated by dispersion modelling. In the Chicago area, the authors indicated a population-weighted (i.e., exposure-weighted) annual average impact from nine plants to be 0.3 μg/m^3 (total of primary and secondary PM). Given that the size of the population exposed at this level was 33 million, the incremental exposure estimated due to the plants was 320 premature deaths per year.

Recent studies have demonstrated that the human health effects associated with fine particulate matter may have been previously underestimated. One such study was conducted by Jerrett *et al.* (2005), where a subpopulation of approximately 23,000 southern Californians was followed between 1982 to 2000. Of the subpopulation, a total of 5,856 deaths were accounted for during this period. In addition, 44 individual confounders including lifestyle, diet, demographics, occupation and education, were taken into account. The results indicate that the relative risk calculated for $PM_{2.5}$ exposure was approximately 3 times greater than previous models reported in literature. Furthermore, the study found a stronger association between air pollution and ischemic heart disease than with more general measures of cardiopulmonary deaths or all-cause mortality. In terms of the relative risk levels, the study indicates that all-cause mortality had a relative risk of 1.17 for an increase of 10 μg/m^3 $PM_{2.5}$. The relative risk for mortality resulting from ischemic heart disease and lung cancer deaths were elevated, in the range of 1.24-1.6 for an increase 10 μg/m^3 $PM_{2.5}$, depending on the model used. For cancers, the relative risks for lung cancers were higher than for digestive cancers or other cancers as expected. However, attempts to replicate these results in other cities have not yet been successful.

Some studies have also focused on morbidity issues relating to exposure to PM. For example, Zanobetti *et al*. (2000a) examined the effect of prior admission for respiratory disease on whether or not a patient turned up at an emergency hospital facility during a high pollution event. They determined that the risk associated with PM_{10} for hospitalization of elderly patients (>65 years old) with cardiovascular disease was approximately twice as high for patients with concurrent respiratory infection. The evidence for pre-existing heart disease modifies the risk of chronic obstructive pulmonary disease (COPD) admissions on high pollution days. The study also found that evidence of a previous heart failure increased the risk for admission on high PM days. Hospital visits also increased for elderly patients with acute respiratory infections when the PM concentrations were high. However, while the study found that greater PM concentrations exacerbated existing respiratory conditions, it did not find that high PM concentrations were the cause of these conditions.

Zanobetti *et al.* (2000b) also performed a multi-city analysis of the relationship between levels of PM_{10} and hospital admissions for heart and lung disease. They found that for each increase of 10 μg/m^3 of PM_{10}, COPD hospitalization rates increased by 2.5 %, pneumonia rates increased by 1.95 % and cardiovascular disease rates increased by 1.27 %. The authors were not able to determine whether the public health impacts were dominated more by a few high pollution days or whether such impacts persist at concentrations generally observed in urban areas on most days.

In summary a threshold value of 7 µg/m^3 was used as the health based level and since The Windsor-Essex Parkway is a long-term structure, the epidemiological evidence related to long-term exposures are the most relevant to consider in this assessment. This means that for every 10 µg/m^3 increase in $PM_{2.5}$ concentration there will be a corresponding 2.5 % increase in COPD, 1.95% increase in pneumonia, 1.27% increase in cardiovascular disease, 6% increase in cardiopulmonary mortality and 8% increase in lung cancer mortality.

5. Risk Characterization

The final step in the risk assessment process is the characterization of health risks or impacts. In this step the predicted exposures were compared to the TRVs for a given chemical in order to determine the risks associated with the various chemicals of concern.

For this assessment, potential adverse effects and risks are calculated using deterministic (point estimate) risk estimates. Hazard quotient values for short-term (1-h, 8-h or 24-h) or long-term (annual) exposure to gaseous air pollutants were calculated by dividing the predicted concentration at the location of the maximum concentration by the appropriate TRV as shown in the following equation:

$$Hazard\ Quotient = \frac{Predicted\ Air\ Concentration\left(\mu g / m^3\right)}{Toxicity\ \mathrm{Re}\ ference Value\left(\mu g / m^3\right)} \quad (5\text{-}1)$$

A hazard quotient value for gaseous air pollutants below 1 implies that the health effects associated with the gaseous air pollutant are not significant. A value of 1 is used since all background exposures are captured in the predicted concentrations.

In the case of the cancer causing COC carried through the pathways assessment, the risk level is calculated by multiplying the predicted exposure (ingestion or inhalation dose) by the appropriate cancer slope factor (SF), as shown in the following equations:

$$Risk = Predicted\ Exposure\left(\frac{mg}{kg\ d}\right) \times SF\left(\frac{mg}{kg\ d}\right)^{-1} \quad (5\text{-}2)$$

$$Risk = Predicted\ Exposure\left(\frac{mg}{m^3}\right) \times SF\left(\frac{mg}{m^3}\right)^{-1} \quad (5\text{-}3)$$

For this assessment, an assumed incremental lifetime risk level of 1 x 10^{-6} was used as the reference risk level. At this level, health impacts are considered to be insignificant. Some agencies (such as Health Canada) use reference lifetime risks of 1 x 10^{-5} that have achieved wide acceptance for use in many industrial and commercial applications. The selection of an appropriate risk level can be weighed, as is the case with the U.S. EPA, against the size of populations exposed and what is reasonably achievable. Discussions around the U.S. EPA's Clean Air Act proposal

for hazardous air pollutants include a risk range of 10^{-6} to 10^{-4} with a risk of 10^{-4} deemed to be safe (U.S. EPA 1990). Thus, a risk level of 1×10^{-6} represents a cautious value.

For non-carcinogenic chemicals, an oral hazard quotient is calculated by dividing the predicted exposure (ingestion dose) by the appropriate chronic reference dose (RfD), as shown in the Equation 5-4. For the inhalation hazard quotient, the predicted exposure concentration is divided by the appropriate reference concentration (RfC) as shown in Equation 5-5.

$$HazardQuotient = \frac{Predicted\ Exposure\left(\frac{mg}{kg\ d}\right)}{RfD\left(\frac{mg}{kg\ d}\right)} \quad (5\text{-}4)$$

$$HazardQuotient = \frac{Predicted\ Exposure\ Concentration\left(\frac{mg}{m^3}\right)}{RfC\left(\frac{mg}{m^3}\right)} \quad (5\text{-}5)$$

Different magnitudes of hazard quotients have been used to screen for potential health effects. When all pathways are considered, a hazard quotient less than one (1) represents an insignificant impact to the receptor, as the predicted exposure does not exceed the applicable benchmark. The MOE allocates 20% of the Reference Dose (hazard quotient) for each exposure pathway. A hazard quotient of 0.2 was used to assess the resident exposures, even though the inhalation and ingestion pathways were considered. This represents a cautious assumption since background concentrations are not available for many components in the pathways assessment.

5.1. Potential Short and Long-term Health Risks Arising from Gaseous Air Pollutants

The health effects associated with gaseous air pollutants emitted from vehicles along the roadway for the "Future No Build" and TEPA Scenarios were assessed using hazard quotient values. Potential health effects from short-term exposures were determined by using 1 hour, 8 hour and 24 hour ground level air concentrations at the maximum concentration location. The most sensitive end points for gaseous air pollutants are generally associated with short-term exposure. Long-term health risks associated with NO_x emitted from vehicles along the roadway for the "Future No Build" and TEPA Scenarios were estimated using annual average air concentrations predicted along the roadway.

A hazard quotient value for gaseous air pollutant of less than 1 indicates that the predicted air concentrations are less than the reference concentrations and as such there are no measurable health impacts expected. A hazard quotient value for gaseous air pollutant above 1 indicates that the reference concentration is exceeded and that there is a possibility that an adverse health effect may occur.

5.1.1. Potential Health Risks Associated with Exposure to the Gaseous Air Pollutants

The results of the assessment for hazard quotients associated with exposure to NO_x including background concentrations at various locations along the roadway for the "Future No Build" and TEPA are presented in Table 5.1 for the year 2035. It should be noted that the predicted concentrations are calculated for the situation considering that the maximum emissions occur simultaneously with the worst-case meteorological conditions, therefore, the predicted concentrations are considered to be conservative over-estimates. The hazard quotients associated with the other horizon years (2015 and 2025) are provided in Appendix B.

As previously described in Air Quality Impact Assessment, NO_x is typically considered the summation of two oxides of nitrogen, namely nitrous oxide (NO) and nitrogen dioxide (NO_2). Of these two compounds NO_2 is the pollutant of concern. In most combustion processes up to 10% of the total NO_x is emitted as NO while the remaining 90% is NO_2. However in the presence of ozone (O_3), the emitted NO will react with the ambient O_3 to produce NO_2. Similarly, in the presence of ultraviolet radiation, the NO_2 will break down into NO and O, with the O reacting with O_2 to reform O_3, making it again available to react with NO. This continual cycle occurs until an equilibrium is reached in the atmosphere.

For the purposes of this risk assessment, we have assumed, that 100% of the NO_x emitted is in the form of NO_2. This method provides a very conservative estimate of the NO_2 concentration since it does not take into account equilibrium that exists between NO_2 and NO.

As seen from Table 5.1, background exposure to NO_x both in the short-term and long-term accounts for a significant portion of the hazard quotient. For short-term exposure (1 hr) to NO_x, all hazard quotients are below 1 with the exception of Receptor location 58 in the Bellwood Estates where the hazard quotient marginally exceeds 1 (i.e. HQ=1.1) for the Future No Build scenario. The hazard quotients for the TEPA are lower than those predicted if The Windsor-Essex Parkway was not built indicating that the health risks for exposure to NO_x will be lower for residents in the various communities if The Windsor-Essex Parkway was built. For long-term exposure to NO_x, all hazard quotient values are above 1 even for background exposure. For the TEPA, all hazard quotients are lower than for the Future No Build Scenario and are essentially equal to background (I.e. HQ=1.8) with the exception of Bellwood Estates where the hazard quotient value is 2.0. Similar results are obtained for the other horizon years 2015 and 2025 (see Appendix B). The results of the risk

assessment associated with NO_x demonstrate that the risks are lower for the TEPA than the Future No Build scenario.

TABLE 5.1 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO NO_X (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Receptor ID	NO_x 1 hr		NO_x Annual	
		No Build	TEPA	No Build	TEPA
Ball Field	2479	0.74	0.42	**2.0**	**1.8**
Bellwood Estates	58	**1.1**	0.64	**2.7**	**2.0**
	403	0.56	0.50	**2.0**	**1.8**
Grand Marais Roads	74	0.99	0.58	**2.6**	**1.9**
	186	0.78	0.52	**2.3**	**1.9**
Heritage Estates	910	0.54	0.40	**1.8**	**1.8**
Home for Aged LaSalle	944	0.74	0.42	**1.9**	**1.8**
	945	0.80	0.43	**2.0**	**1.8**
Huron Estates	295	0.61	0.49	**2.0**	**1.8**
	410	0.55	0.45	**2.0**	**1.8**
Kendleton Court	781	0.93	0.44	**2.2**	**1.9**
Oliver Estates	858	0.78	0.46	**2.0**	**1.8**
	1997	0.89	0.50	**2.0**	**1.9**
Reddock	423	0.71	0.44	**2.0**	**1.8**
Residential	2478	0.59	0.44	**1.9**	**1.8**
Southwood Lakes	867	0.55	0.40	**1.9**	**1.8**
Spring Garden	1513	0.49	0.50	**1.9**	**1.9**
	1644	0.49	0.45	**1.9**	**1.8**
St. Clair College	2480	0.50	0.39	**1.9**	**1.8**
Villa Borghese	828	0.86	0.42	**2.2**	**1.8**
Villa Paradiso Cres.	848	0.60	0.41	**1.9**	**1.8**
Background value		*0.35*		***1.8***	

Note: All health-based criteria obtained from WHO.
Values in **bold** exceed a hazard quotient value of 1.

Table 5.2 presents the hazard quotients for exposure to SO_2 for various locations along the roadway. As seen from Table 5.2, background exposure to SO_2 both in the short-term and long-term accounts for all of the hazard quotient values for both the Future No Build and the TEPA scenarios. All hazard quotient values are below a value of 1. For the 24 hour exposure, the interim World Health Organization value of 125 $\mu g/m^3$ was used in the calculation of the hazard quotients. No annual TRV is available for SO_2, however, since no short-term adverse effects were predicted, no adverse health effects will occur as a result of long-term exposure to SO_2. Similar results are obtained for the other horizon years 2015 and 2025 (see Appendix B). The results of the risk assessment associated with SO_2 demonstrate that there is no difference in the health risks between the Future No Build and the TEPA scenario.

TABLE 5.2 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO SO_2 (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Receptor ID	SO_2 1 hr		SO_2 24 hr	
		No Build	TEPA	No Build	TEPA
Ball Field	2479	0.09	0.09	0.26	0.26
Bellwood Estates	58	0.09	0.09	0.26	0.26
	403	0.09	0.09	0.26	0.26
Grand Marais Roads	74	0.09	0.09	0.26	0.26
	186	0.09	0.09	0.26	0.26
Heritage Estates	910	0.09	0.09	0.26	0.26
Home for Aged LaSalle	944	0.09	0.09	0.26	0.26
	945	0.09	0.09	0.26	0.26
Huron Estates	295	0.09	0.09	0.26	0.26
	410	0.09	0.09	0.26	0.26
Kendleton Court	781	0.09	0.09	0.26	0.26
Oliver Estates	858	0.09	0.09	0.26	0.26
	1997	0.09	0.09	0.26	0.26
Reddock	423	0.09	0.09	0.26	0.26
Residential	2478	0.09	0.09	0.26	0.26
Southwood Lakes	867	0.09	0.09	0.26	0.26
Spring Garden	1513	0.09	0.09	0.26	0.26
	1644	0.09	0.09	0.26	0.26
St. Clair College	2480	0.09	0.09	0.26	0.26
Villa Borghese	828	0.09	0.09	0.26	0.26
Villa Paradiso Cres.	848	0.09	0.09	0.26	0.26
Background value		*0.09*		*0.26*	

Note: All health-based criteria obtained from WHO.
Values in **bold** exceed a hazard quotient value of 1.

5.2 Particulate Matter

$PM_{2.5}$ emissions from road based transportation sources are comprised of two contributing fractions. The first is tailpipe emissions resulting from fuel combustion. The second, and higher fraction, is from road dust, which is generated from the re-suspension of surface material and debris, tire and brake wear, and roadway abrasion. The results for the assessment of exposure to $PM_{2.5}$ in the Year 2035 are provided in Table 5.3.

As seen from the table, background concentrations of $PM_{2.5}$ in the area exceed the health threshold value of 7 $\mu g/m^3$ as well as The Canadian Environmental Protection Act/Federal Provincial Advisory Committee Working Group on Air Quality Objectives and Guidelines (CEPA/FPAC WGAQOG) 24 hour average $PM_{2.5}$ health reference level of 15 $\mu g/m^3$ below which statistically significant health effects cannot be determined. The epidemiological evidence of adverse health effects related to particulate matter indicates that these effects may occur in a susceptible subset of the general population such as individuals with pre-existing respiratory or cardiovascular

conditions. Thus, risks of adverse health effects might be anticipated in susceptible populations with these background concentrations of $PM_{2.5}$.

TABLE 5.3 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO FINE PARTICULATE MATTER ($PM_{2.5}$) (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Receptor ID	TRV= 15 µg/m³		TRV=7 µg/m³	
		Future No Build	TEPA	Future No Build	TEPA
Ball Field	2479	**1.6**	**1.5**	**3.4**	**3.3**
Bellwood Estates	58	**1.7**	**1.6**	**3.6**	**3.4**
	403	**1.5**	**1.5**	**3.2**	**3.2**
Grand Marais Roads	74	**1.7**	**1.5**	**3.6**	**3.3**
	186	**1.6**	**1.5**	**3.4**	**3.2**
Heritage Estates	910	**1.4**	**1.4**	**3.1**	**3.1**
Home for Aged LaSalle	944	**1.4**	**1.4**	**3.1**	**3.1**
	945	**1.4**	**1.4**	**3.1**	**3.1**
Huron Estates	295	**1.5**	**1.5**	**3.2**	**3.2**
	410	**1.5**	**1.5**	**3.2**	**3.1**
Kendleton Court	781	**1.5**	**1.6**	**3.3**	**3.3**
Oliver Estates	858	**1.5**	**1.5**	**3.1**	**3.3**
	1997	**1.5**	**1.6**	**3.2**	**3.3**
Reddock	423	**1.5**	**1.5**	**3.2**	**3.1**
Residential	2478	**1.5**	**1.4**	**3.1**	**3.1**
Southwood Lakes	867	**1.4**	**1.5**	**3.1**	**3.1**
Spring Garden	1513	**1.4**	**1.5**	**3.1**	**3.2**
	1644	**1.4**	**1.5**	**3.1**	**3.1**
St. Clair College	2480	**1.5**	**1.5**	**3.2**	**3.1**
Villa Borghese	828	**1.5**	**1.5**	**3.2**	**3.1**
Villa Paradiso Cres.	848	**1.5**	**1.5**	**3.2**	**3.2**
Background value		***1.4***		***3.0***	

Note: Values in **bold** exceed a hazard quotient value of 1.

As seen from Table 5.3, background exposure to $PM_{2.5}$ accounts for a significant portion of the hazard quotient for both the Future No Build and TEPA scenarios. In fact, the change in PM concentration from background to the highest concentration (The Ballpark location) for the Future No Build scenario is approximately 2.6 µg/m³ and 2.0 µg/m³ for the TEPA. While these concentrations will contribute incrementally to the ambient fine particulate ($PM_{2.5}$) in the Windsor area, the epidemiological studies indicate that for short-term exposures, an increase of 10 µg/m³ of fine particulate matter ($PM_{2.5}$) is associated with a corresponding 2.5 % increase in COPD, 1.95% increase in pneumonia, 1.27% increase in cardiovascular disease, 6% increase in cardiopulmonary mortality and 8% increase in lung cancer mortality. This means that for COPD (the largest % increase for a disease rather than mortality) approximately 3 person in a million people will experience COPD if the long-term concentration of particulate matter increases by 10 µg/m³. For mortality due to lung cancer, approximately 8 people in 1 million will die from lung cancer. If you compare this to the annual death rate of people in Canada of approximately 57 deaths per million people per day, an increase of 10µg/m³ per day results in about 8 increased

deaths in 57 deaths per million people. In Windsor where the population is about 210,000 people, an increase of 10 µg/m^3 will slightly result in a change in the death rate or the heart failure rate. Thus an even smaller increase of $PM_{2.5}$ in the order of 2.6 µg/m^3 for the Future No Build scenario and 2 µg/m^3 for the TEPA would not result in any measurable change in the mortality rates in Windsor.

It should be noted that the TEPA scenario results in lower hazard quotients than the Future No Build scenario. Similar results are also obtained for the other horizon years 2015 and 2025 (see Appendix B). The results of the risk assessment associated with $PM_{2.5}$ demonstrate that the risks are lower for the TEPA than the Future No Build scenario.

5.3 Potential Long-Term Human Health Risks Associated with Exposure to COC Other than Gaseous Air Pollutants

Long-term risks for the COC other than gaseous air pollutants identified in Section 2.2 are calculated by multiplying the predicted exposure by the carcinogenic slope factor or by dividing by the non-carcinogenic reference dose, as described in Section 5.0.

Table 5.4 presents the hazard quotients associated with exposure to benzene for both the Future No Build and TEPA scenarios for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). As seen from Table 5.4, hazard quotients are provided for all life stages and that there are essentially the same for both the Future No Build and TEPA scenarios indicating that the health risks are the same for both scenarios. It should be noted that all hazard quotients are below a value of 0.2 indicating that there are no risks associated with the non-carcinogenic effects of benzene.

TABLE 5.4 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Hazard Quotients for Benzene - Year 2035									
	Future No Build					TEPA				
	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Bellwood Estates - 58	0.12	0.10	0.10	0.09	0.09	0.12	0.10	0.10	0.09	0.09
Bellwood Estates - 403	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Grand Marais Roads - 74	0.11	0.10	0.10	0.09	0.09	0.11	0.10	0.10	0.09	0.09
Grand Marais Roads - 186	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Heritage Estates - 910	0.11	0.09	0.09	0.09	0.08	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 944	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 945	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Huron Estates - 295	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Huron Estates - 410	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Kendleton Court – 781	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 858	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 1997	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Reddock - 423	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Residential - 2478	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Southwood Lakes - 867	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1513	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1644	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
St. Clair College - 2480	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Villa Borghese - 828	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Villa Paradiso Cres. - 848	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09

Note: Values in **bold** exceed a hazard quotient value of 0.2.

Benzene is also considered to be a carcinogen (i.e. a cancer causing chemical). Table 5.5 presents the results for the incremental risks associated with exposure to benzene for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). Background exposure accounts for the majority of the benzene risks. The background concentration of benzene is 2.3 µg/m^3 and the range of benzene concentrations for the Future No Build and TEPA scenarios are 2.3 to 2.6 µg/m^3. As seen in Table 5.5, all incremental risks including background are above a risk value of 1 x 10^{-6} indicating there is a potential health risk associated with background exposures of benzene. However, there is no difference in benzene risks between the TEPA and Future No Build scenarios indicating the TEPA will not result in any increased incremental risk due to benzene exposure.

TABLE 5.5 INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Incremental Lifetime Risk for Benzene - Year 2035			
	Future No Build		TEPA	
	Adult	Composite	Adult	Composite
Ball Field - 2479	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Bellwood Estates - 58	**1.3x10^{-5}**	**1.9x10^{-5}**	**1.3x10^{-5}**	**1.9x10^{-5}**
Bellwood Estates - 403	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Grand Marais Roads - 74	**1.3x10^{-5}**	**1.9x10^{-5}**	**1.3x10^{-5}**	**1.9x10^{-5}**
Grand Marais Roads - 186	**1.3x10^{-5}**	**1.8x10^{-5}**	**1.3x10^{-5}**	**1.8x10^{-5}**
Heritage Estates - 910	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Home for Aged LaSalle - 944	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Home for Aged LaSalle - 945	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Huron Estates - 295	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Huron Estates - 410	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Kendleton Court - 781	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Oliver Estates - 858	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.3x10^{-5}**	**1.8x10^{-5}**
Oliver Estates - 1997	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.3x10^{-5}**	**1.8x10^{-5}**
Reddock - 423	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Residential - 2478	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Southwood Lakes - 867	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Spring Garden - 1513	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.3x10^{-5}**	**1.8x10^{-5}**
Spring Garden - 1644	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
St. Clair College - 2480	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Villa Borghese - 828	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**
Villa Paradiso Cres. - 848	**1.2x10^{-5}**	**1.8x10^{-5}**	**1.2x10^{-5}**	**1.8x10^{-5}**

Note: Values in **bold** exceed an incremental risk level of 1 x 10^{-6}

Table 5.6 presents the hazard quotients associated with exposure to 1,3-butadiene for both the Future No Build and TEPA scenarios for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). As seen from Table 5.6, hazard quotients are provided for all life stages and that there are essentially the same for both the Future No Build and TEPA scenarios indicating that the health risks are the same for both scenarios. It should be noted that all hazard quotients are below a value of 0.2 indicating that there are no risks associated with the non-carcinogenic effects of 1,3-butadiene.

TABLE 5.6 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Hazard Quotients for 1,3-Butadiene - Year 2035									
	Future No Build					TEPA				
	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Bellwood Estates - 58	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Bellwood Estates - 403	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 74	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 186	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heritage Estates - 910	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 944	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 945	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Huron Estates - 295	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Huron Estates - 410	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Kendleton Court - 781	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 858	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 1997	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Reddock - 423	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Residential - 2478	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Southwood Lakes - 867	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Spring Garden - 1513	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Spring Garden - 1644	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
St. Clair College - 2480	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Borghese - 828	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Paradiso Cres. - 848	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

Note: Values in **bold** exceed a hazard quotient value of 0.2.

1,3-butadiene is also considered to be a carcinogen (i.e. a cancer causing chemical). Table 5.7 presents the results for the incremental risks associated with exposure to benzene for the Year 2035. Appendix B presents the incremental risks for the other horizon years (2015 and 2025). Background exposure accounts for the majority of the 1,3-butadiene risks. The background concentration of 1,3-butadiene is 0.17 µg/m^3 and the range of 1,3 butadiene concentrations for the Future No Build and TEPA scenarios are 0.17 to 0.19 µg/m^3. As seen in Table 5.7, all incremental risks including background are above a risk value of 1 x 10^{-6} indicating there is a potential health risk associated with background exposures of 1,3-butadiene. However, there is no difference in 1,3-butadiene risks between the TEPA and Future No Build scenarios indicating the TEPA will not result in any increased incremental risk due to 1,3-butadiene exposure.

TABLE 5.7 INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Incremental Lifetime Risk for 1,3-Butadiene – Year 2035			
	Future No Build		TEPA	
	Adult	Composite	Adult	Composite
Ball Field - 2479	**5.3x10^{-6}**	**7.5x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Bellwood Estates - 58	**6.1x10^{-6}**	**8.5x10^{-6}**	**6.0x10^{-6}**	**8.4x10^{-6}**
Bellwood Estates - 403	**5.3x10^{-6}**	**7.5x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Grand Marais Roads - 74	**5.8x10^{-6}**	**8.2x10^{-6}**	**5.7x10^{-6}**	**8.1x10^{-6}**
Grand Marais Roads - 186	**5.6x10^{-6}**	**7.9x10^{-6}**	**5.5x10^{-6}**	**7.8x10^{-6}**
Heritage Estates - 910	**5.1x10^{-6}**	**7.2x10^{-6}**	**5.2x10^{-6}**	**7.3x10^{-6}**
Home for Aged LaSalle - 944	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.2x10^{-6}**	**7.3x10^{-6}**
Home for Aged LaSalle - 945	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.2x10^{-6}**	**7.3x10^{-6}**
Huron Estates - 295	**5.3x10^{-6}**	**7.5x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Huron Estates - 410	**5.3x10^{-6}**	**7.4x10^{-6}**	**5.3x10^{-6}**	**7.4x10^{-6}**
Kendleton Court - 781	**5.3x10^{-6}**	**7.5x10^{-6}**	**5.4x10^{-6}**	**7.6x10^{-6}**
Oliver Estates - 858	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.4x10^{-6}**	**7.6x10^{-6}**
Oliver Estates - 1997	**5.3x10^{-6}**	**7.4x10^{-6}**	**5.5x10^{-6}**	**7.7x10^{-6}**
Reddock - 423	**5.2x10^{-6}**	**7.4x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Residential - 2478	**5.1x10^{-6}**	**7.2x10^{-6}**	**5.2x10^{-6}**	**7.3x10^{-6}**
Southwood Lakes - 867	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Spring Garden - 1513	**5.3x10^{-6}**	**7.5x10^{-6}**	**5.4x10^{-6}**	**7.6x10^{-6}**
Spring Garden - 1644	**5.3x10^{-6}**	**7.4x10^{-6}**	**5.4x10^{-6}**	**7.5x10^{-6}**
St. Clair College - 2480	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.2x10^{-6}**	**7.3x10^{-6}**
Villa Borghese - 828	**5.3x10^{-6}**	**7.4x10^{-6}**	**5.3x10^{-6}**	**7.5x10^{-6}**
Villa Paradiso Cres. - 848	**5.2x10^{-6}**	**7.3x10^{-6}**	**5.3x10^{-6}**	**7.4x10^{-6}**

Note: Values in **bold** exceed an incremental risk level of 1 x 10^{-6}

Table 5.8 presents the hazard quotients associated with exposure to formaldehyde for both the Future No Build and TEPA scenarios for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). As seen from Table 5.8, hazard quotients are provided for all life stages and that there are essentially the same for both the Future No Build and TEPA scenarios indicating that the health risks are the same for both scenarios. However, it should be noted that all hazard quotients are well above a value of 0.2 indicating that there may be potential risks associated with the non-carcinogenic effects of formaldehyde. Background is responsible for the majority of the hazard quotient since the background concentration of formaldehyde is 4.3 µg/m^3 and the range of formaldehyde concentrations for the Future No Build and TEPA scenarios are 4.3 to 4.5 µg/m^3.

TABLE 5.8 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Hazard Quotients for Formaldehyde - Year 2035									
	Future No Build					TEPA				
	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	**44.7**	**24.7**	**18.6**	**13.8**	**10.9**	**44.7**	**24.6**	**18.6**	**13.7**	**10.9**
Bellwood Estates - 58	**46.2**	**25.5**	**19.2**	**14.2**	**11.2**	**45.5**	**25.1**	**19.0**	**14.0**	**11.1**
Bellwood Estates - 403	**44.6**	**24.6**	**18.6**	**13.7**	**10.9**	**44.6**	**24.6**	**18.6**	**13.7**	**10.9**
Grand Marais Roads - 74	**45.9**	**25.3**	**19.1**	**14.1**	**11.2**	**45.3**	**25.0**	**18.9**	**13.9**	**11.0**
Grand Marais Roads - 186	**45.3**	**25.0**	**18.9**	**13.9**	**11.0**	**44.9**	**24.8**	**18.7**	**13.8**	**10.9**
Heritage Estates - 910	**44.4**	**24.5**	**18.5**	**13.6**	**10.8**	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**
Home for Aged LaSalle - 944	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**
Home for Aged LaSalle - 945	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**
Huron Estates - 295	**44.7**	**24.7**	**18.6**	**13.7**	**10.9**	**44.7**	**24.7**	**18.6**	**13.8**	**10.9**
Huron Estates - 410	**44.5**	**24.6**	**18.6**	**13.7**	**10.8**	**44.5**	**24.6**	**18.6**	**13.7**	**10.8**
Kendleton Court - 781	**44.8**	**24.7**	**18.6**	**13.8**	**10.9**	**44.9**	**24.8**	**18.7**	**13.8**	**10.9**
Oliver Estates - 858	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**	**44.9**	**24.7**	**18.7**	**13.8**	**10.9**
Oliver Estates - 1997	**44.6**	**24.6**	**18.6**	**13.7**	**10.8**	**45.0**	**24.8**	**18.7**	**13.8**	**10.9**
Reddock - 423	**44.5**	**24.6**	**18.5**	**13.7**	**10.8**	**44.6**	**24.6**	**18.6**	**13.7**	**10.8**
Residential - 2478	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**
Southwood Lakes - 867	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**	**44.6**	**24.6**	**18.6**	**13.7**	**10.8**
Spring Garden - 1513	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**	**44.8**	**24.7**	**18.6**	**13.8**	**10.9**
Spring Garden - 1644	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**	**44.7**	**24.6**	**18.6**	**13.7**	**10.9**
St. Clair College - 2480	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**	**44.4**	**24.5**	**18.5**	**13.7**	**10.8**
Villa Borghese - 828	**44.6**	**24.6**	**18.6**	**13.7**	**10.8**	**44.5**	**24.6**	**18.5**	**13.7**	**10.8**
Villa Paradiso Cres. - 848	**44.5**	**24.5**	**18.5**	**13.7**	**10.8**	**44.6**	**24.6**	**18.6**	**13.7**	**10.9**

Note: Values in **bold** exceed a hazard quotient value of 0.2.

Formaldehyde is also considered to be a carcinogen (i.e. a cancer causing chemical) via the inhalation pathway. Table 5.9 presents the results for the incremental risks associated with exposure to formaldehyde for the Year 2035. Appendix B presents the incremental risks for the other horizon years (2015 and 2025). As noted above, background exposure accounts for the majority of the formaldehyde risks. As seen in Table 5.9, all incremental risks including background are above a risk value of 1×10^{-6} indicating there is a potential health risk associated with background exposures of formaldehyde. However, there is no difference in formaldehyde risks between the TEPA and Future No Build scenarios indicating the TEPA will not result in any increased incremental risk due to formaldehyde exposure.

TABLE 5.9 INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Incremental Lifetime Risk for 1,3-Butadiene – Year 2035			
	Future No Build		TEPA	
	Adult	Composite	Adult	Composite
Ball Field - 2479	**5.3×10^{-6}**	**7.5×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Bellwood Estates - 58	**6.1×10^{-6}**	**8.5×10^{-6}**	**6.0×10^{-6}**	**8.4×10^{-6}**
Bellwood Estates - 403	**5.3×10^{-6}**	**7.5×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Grand Marais Roads - 74	**5.8×10^{-6}**	**8.2×10^{-6}**	**5.7×10^{-6}**	**8.1×10^{-6}**
Grand Marais Roads - 186	**5.6×10^{-6}**	**7.9×10^{-6}**	**5.5×10^{-6}**	**7.8×10^{-6}**
Heritage Estates - 910	**5.1×10^{-6}**	**7.2×10^{-6}**	**5.2×10^{-6}**	**7.3×10^{-6}**
Home for Aged LaSalle - 944	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.2×10^{-6}**	**7.3×10^{-6}**
Home for Aged LaSalle - 945	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.2×10^{-6}**	**7.3×10^{-6}**
Huron Estates - 295	**5.3×10^{-6}**	**7.5×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Huron Estates - 410	**5.3×10^{-6}**	**7.4×10^{-6}**	**5.3×10^{-6}**	**7.4×10^{-6}**
Kendleton Court - 781	**5.3×10^{-6}**	**7.5×10^{-6}**	**5.4×10^{-6}**	**7.6×10^{-6}**
Oliver Estates - 858	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.4×10^{-6}**	**7.6×10^{-6}**
Oliver Estates - 1997	**5.3×10^{-6}**	**7.4×10^{-6}**	**5.5×10^{-6}**	**7.7×10^{-6}**
Reddock - 423	**5.2×10^{-6}**	**7.4×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Residential - 2478	**5.1×10^{-6}**	**7.2×10^{-6}**	**5.2×10^{-6}**	**7.3×10^{-6}**
Southwood Lakes - 867	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Spring Garden - 1513	**5.3×10^{-6}**	**7.5×10^{-6}**	**5.4×10^{-6}**	**7.6×10^{-6}**
Spring Garden - 1644	**5.3×10^{-6}**	**7.4×10^{-6}**	**5.4×10^{-6}**	**7.5×10^{-6}**
St. Clair College - 2480	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.2×10^{-6}**	**7.3×10^{-6}**
Villa Borghese - 828	**5.3×10^{-6}**	**7.4×10^{-6}**	**5.3×10^{-6}**	**7.5×10^{-6}**
Villa Paradiso Cres. - 848	**5.2×10^{-6}**	**7.3×10^{-6}**	**5.3×10^{-6}**	**7.4×10^{-6}**

Note: Values in **bold** exceed an incremental risk level of 1×10^{-6}

Table 5.10 presents the hazard quotients associated with exposure to acetaldehyde for both the Future No Build and TEPA scenarios for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). As seen from Table 5.10, hazard quotients are provided for all life stages and that there are essentially the same for both the Future No Build and TEPA scenarios indicating that the health risks are the same for both scenarios. It should be noted that all hazard

quotients are slightly above (0.26 to 0.28) a value of 0.2 indicating that there may be a potential risk associated with the non-carcinogenic effects of acetaldehyde. However, background is responsible for the majority of the hazard quotient since the background concentration of acetaldehyde is 2.3 µg/m^3 and the predicted acetaldehyde concentrations for the Future No Build and TEPA scenarios are 2.4 µg/m^3.

TABLE 5.10 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Hazard Quotients for Acetaldehyde – Year 2035									
	Future No Build					TEPA				
	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Bellwood Estates - 58	**0.28**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Bellwood Estates - 403	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Grand Marais Roads - 74	**0.28**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Grand Marais Roads - 186	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Heritage Estates - 910	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**
Home for Aged LaSalle - 944	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**
Home for Aged LaSalle - 945	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**
Huron Estates - 295	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**
Huron Estates - 410	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Kendleton Court - 781	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Oliver Estates - 858	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Oliver Estates - 1997	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.27**
Reddock - 423	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Residential - 2478	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**
Southwood Lakes - 867	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Spring Garden - 1513	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**
Spring Garden - 1644	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
St. Clair College - 2480	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**
Villa Borghese - 828	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**
Villa Paradiso Cres. - 848	**0.27**	**0.27**	**0.26**	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.26**	**0.26**

Note: Values in **bold** exceed a hazard quotient value of 0.2.

Acetaldehyde is also considered to be a carcinogen (i.e. a cancer causing chemical) via the inhalation pathway. Table 5.11 presents the results for the incremental risks associated with exposure to acetaldehyde for the Year 2035. Appendix B presents the incremental risks for the other horizon years (2015 and 2025). As discussed above, background exposure accounts for the majority of the acetaldehyde risks since there is only a 0.1 µg/m^3 increase in concentration between the Future No Build and TEPA scenarios and background. As seen in Table 5.11, all incremental risks including background are above a risk value of 1 x 10^{-6} indicating there is a potential health risk associated with background exposures of acetaldehyde. However, there is no difference in acetaldehyde risks between the TEPA and Future No Build scenarios indicating the TEPA will not result in any increased incremental risk due to acetaldehyde exposure.

TABLE 5.11 INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Incremental Lifetime Risk for Acetaldehyde - Year 2035			
	Future No Build		TEPA	
	Adult	Composite	Adult	Composite
Ball Field - 2479	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Bellwood Estates - 58	**$4.0x10^{-6}$**	**$5.3x10^{-6}$**	**$3.9x10^{-6}$**	**$5.3x10^{-6}$**
Bellwood Estates - 403	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Grand Marais Roads - 74	**$4.0x10^{-6}$**	**$5.3x10^{-6}$**	**$3.9x10^{-6}$**	**$5.3x10^{-6}$**
Grand Marais Roads - 186	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Heritage Estates - 910	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Home for Aged LaSalle - 944	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Home for Aged LaSalle - 945	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Huron Estates - 295	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Huron Estates - 410	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Kendleton Court - 781	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Oliver Estates - 858	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Oliver Estates - 1997	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Reddock - 423	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Residential - 2478	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Southwood Lakes - 867	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Spring Garden - 1513	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Spring Garden - 1644	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
St. Clair College - 2480	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Villa Borghese - 828	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**
Villa Paradiso Cres. - 848	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**	**$3.9x10^{-6}$**	**$5.2x10^{-6}$**

Note: Values in **bold** exceed an incremental risk level of 1×10^{-6}

Table 5.12 presents the hazard quotients associated with exposure to acrolein for both the Future No Build and TEPA scenarios for the Year 2035. Appendix B presents the hazard quotients for the other horizon years (2015 and 2025). As seen from Table 5.12, hazard quotients are provided for all life stages and that there are essentially the same for both the Future No Build and TEPA scenarios indicating that the health risks are the same for both scenarios. It should be noted that all hazard quotients are above a value of 0.2 indicating that there may be a potential risk associated with the non-carcinogenic effects of acetaldehyde. However, background is responsible for the majority of the hazard quotient since the background concentration of acrolein is 0.15 µg/m^3 and the range of predicted acrolein concentrations for the Future No Build and TEPA scenarios are 0.15 µg/m^3 to 0.16 µg/m^3.

TABLE 5.12 HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACROLEIN (INCLUDING BACKGROUND) FOR 2035

Receptor Location	Hazard Quotients for Acrolein - Year 2035									
	Future No Build					TEPA				
	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**
Bellwood Estates - 58	**8.4**	**8.3**	**8.3**	**8.2**	**8.2**	**8.2**	**8.0**	**8.0**	**8.0**	**8.0**
Bellwood Estates - 403	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**
Grand Marais Roads - 74	**8.3**	**8.2**	**8.2**	**8.1**	**8.1**	**8.1**	**8.0**	**8.0**	**7.9**	**7.9**
Grand Marais Roads - 186	**8.1**	**8.0**	**8.0**	**7.9**	**7.9**	**8.0**	**7.9**	**7.9**	**7.8**	**7.8**
Heritage Estates - 910	**7.8**	**7.7**	**7.7**	**7.6**	**7.6**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Home for Aged LaSalle - 944	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Home for Aged LaSalle - 945	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.8**	**7.7**	**7.7**	**7.6**	**7.6**
Huron Estates - 295	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**
Huron Estates - 410	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Kendleton Court - 781	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**	**8.0**	**7.9**	**7.9**	**7.8**	**7.8**
Oliver Estates - 858	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**
Oliver Estates - 1997	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**	**8.0**	**7.9**	**7.9**	**7.8**	**7.8**
Reddock - 423	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**
Residential - 2478	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Southwood Lakes - 867	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Spring Garden - 1513	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**8.0**	**7.8**	**7.8**	**7.8**	**7.8**
Spring Garden - 1644	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**
St. Clair College - 2480	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**
Villa Borghese - 828	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**
Villa Paradiso Cres. - 848	**7.9**	**7.7**	**7.7**	**7.7**	**7.7**	**7.9**	**7.8**	**7.8**	**7.7**	**7.7**

Note: Values in **bold** exceed a hazard quotient value of 0.2.

In summary, the predicted Volatile Organic Compound concentrations for the Future No Build and TEPA scenarios are essentially the same as background. Therefore the TEPA scenario does not result in an increased risk of adverse health effects when compared to background or the Future No Build scenario.

5.4 Uncertainty Analysis

Many areas of uncertainty attend a risk assessment. This is due to the fact that assumptions have to be made throughout the assessment either due to data gaps, environmental fate complexities or in the generalization of receptor characteristics. To be able to place a level of confidence in the results, an accounting of the uncertainty, the magnitude and type of which are important in determining the significance of the results, must be completed. In recognition of these uncertainties, conservative assumptions are used throughout the assessment to ensure that the potential for an adverse effect would not be underestimated. Several of the major assumptions are outlined below. Validation of these assumptions would reduce the uncertainty and increase the confidence in the conclusions that no measurable

adverse health effects would be expected with the TEPA in comparison to the Future No Build scenario.

5.4.1 Uncertainties in the Assessment

Selection of the assessed chemicals was based on data information provided in the Air Quality Impact Assessment. As indicated in that document there are uncertainties and inevitable variability associated with predicting future traffic flows, weather conditions and emission rates, however, the predicted concentrations are useful and acceptable for comparing the TEPA to Future No Build as any uncertainties will be consistent between the two scenarios.

It has been assumed that a resident is located where the maximum concentration occurs. At present, there are no dwellings in this location and thus exposure is over-estimated.

The receptors and their characteristics are, in general, selected in order to over-estimate potential exposures. For example, it was assumed that an adult residential receptor was assumed to live at their house 24 hours/day, 365 days/year for 30 years with no time away from the site for vacations, working off-site, etc. This scenario is unlikely to occur and this results in a larger exposure dose. Other receptors such as workers may be present near the roadway; however, since the current Human Health Risk Assessment has calculated exposure to various lifestages including an adult, teen, child, toddler and infant receptor with continuous exposure for a period of 30 years, exposure to such a worker would be less than that measured for the resident.

For the pathways modelling, where data was lacking (e.g. physical characteristics of the soil, soil density etc.) worst-case values were generally assumed. For example, soil bulk density can range from 1.2 to 1.5 g/cm^3 (Perry and Chilton 1973) and a value of 1.5 g/cm^3 is assumed for the calculations in this assessment. A higher soil bulk density predicts a higher soil concentration; therefore, the worst-case value for soil bulk density is 1.5 g/cm^3. Similarly, the most cautious values for chemical parameters such as soil-to-plant transfer factors were used. These transfer factors may vary by several orders of magnitude. The uncertainty in these assumptions could be reduced by using site-specific data gathered for the study area. Given that the health impacts are predicted to be insignificant, these changes would not result in any changes to the overall conclusion of the assessment.

Another area of uncertainty is the use of a single value for toxicity. The slope factors are selected to be very protective of human receptors. The factors used in the subject assessment represent risks from upper bound (95th percentile) dose-response estimates. No adjustments are made for bioavailability of the chemicals of concern from the soil into the body, which can result in an over-estimation of exposure and thus leads to uncertainty in the risk assessment. The toxicity assays used to generate these slope factors are not generally conducted for humans, in general

toxicological data from laboratory species, generally rats or mice were used in the assessment. Based on the current state of toxicology, these are the best values available and tend to over-estimate risks. It is currently not possible or practical to develop approaches to evaluate the validity of the above assumptions on the overall assessment. As improvements occur in the toxicological/human health research and assessments, the uncertainties may be reduced.

In summary, the evaluation of the uncertainties in various measurements and methods used in the current risk assessment indicate that the risks have been over-estimated as a result of the assumptions made about exposure (which were generally conservative). The results of this uncertainty analysis support the overall conclusion of the assessment that the TEPA does not result in an increased health risk over the Future No Build scenario.

6. Conclusion

The potential adverse health effects from air emissions arising from vehicles traveling along the roadway to people residing and/or working in the immediate area for the Future "No Build" and TEPA scenarios were assessed based on the following: short-term and long-term health risks associated with exposure to the gaseous air pollutants; and long-term human health risks associated with exposure to volatile organic compounds (VOCs). The chemicals of concern identified were gaseous air pollutants (nitrogen oxides (NO_2), and sulphur dioxide (SO_2)), fine particulate matter ($PM_{2.5}$), and volatile organic compounds (VOC) such as acrolein, acetaldehyde, benzene, formaldehyde and 1,3-butadiene. The Human Health Risk Assessment used the predicted concentrations for the TEPA that were provided in the Air Quality Impact Assessment. The Plaza and Crossing were not assessed in the Human Health Risk Assessment since there were no nearby receptors (see Air Quality Impact Assessment for more details). Three horizon years (2015, 2025 and 2035) were evaluated in the risk assessment.

The short-term (e.g., respiratory health effects) and long-term health risk associated with exposure to the gaseous air pollutants was assessed based on using a hazard quotient value of 1 since background exposures were taken into account. The results showed that the emissions of gaseous air pollutants arising from vehicles traveling along the roadway for the Future "No Build" and TEPA scenarios were similar to background air quality (discussed in Section 3.2 and the Air Quality Impact Assessment) for SO_2. Short-term risks arising from exposure to SO_2 were no different when compared to background and therefore the TEPA does not result in any increased risk in comparison to the Future "No Build" scenario or background.

The hazard quotients associated with NO_2 for both the short-term (1 hour) and long-term (annual) were similar to background. The short-term hazard quotients were below 1 for the TEPA indicating that there will be no increased health risks over background. For the long-term, hazard quotients were above 1 for the background, Future "No Build" and TEPA scenarios. In this case, background accounts for the majority of the hazard quotients. The hazard quotients associated with the TEPA are lower than the Future "No Build" scenario, indicating that there is less risk to residents in the vicinity of the TEPA scenario for exposure to NO_2. The Air Quality Impact Assessment indicates that the lower NO_2 is due to the fact that there will be less stopping and starting and idling on The Windsor-Essex Parkway.

There are no health based thresholds for Total Particulate Matter; the World Health Organization (WHO) has concluded that fine particulate matter ($PM_{2.5}$) is more hazardous to health than coarser particles. Fine particulate matter ($PM_{2.5}$) background concentrations in the Windsor area are relatively high and are above health based toxicity reference values. The background exposure to $PM_{2.5}$ accounts for a significant portion of the hazard quotient for both the Future "No Build" and TEPA scenarios. In fact, the change in $PM_{2.5}$ concentration from background to the highest concentration for the Future "No Build" scenario is approximately 2.6 $\mu g/m^3$

and 2.0 µg/m^3 for the TEPA. The TEPA scenario results in lower hazard quotients than the Future "No Build" scenario. Thus, the results of the risk assessment associated with $PM_{2.5}$ demonstrate that in general, there is less risk to residents in the vicinity of the TEPA scenario. The Air Quality Impact Assessment indicates that the lower $PM_{2.5}$ concentrations are due to the fact that there will be less stopping and starting and idling on The Windsor-Essex Parkway.

The incremental cancer risk values for long-term exposure to carcinogenic VOCs were above the regulatory risk level of one-in-a-million (1×10^{-6}). However, the incremental risks for the TEPA were no different than the risks associated with background. Thus, the TEPA does not result in increased incremental cancer risks over background.

Hazard quotients for non-carcinogenic VOCs (predicted exposure dose ÷ chronic toxicity reference value) for background, Future "No Build" and the TEPA scenarios were below 0.2 for benzene and 1,3-butadiene. Hazard quotients for acrolein, acetaldehyde and formaldehyde were all above 0.2 for background, Future "No Build" and the TEPA scenarios. However, the hazard quotients for the TEPA were no different than the risks associated with background. Thus, the TEPA does not result in increased incremental adverse health risks over background.

In summary, predicted concentrations of gaseous air pollutants, fine particulate matter, and Volatile Organic Compounds for the Future No Build and TEPA scenarios are not much different from each other. Thus the TEPA does not result in an increased health risk over the Future No Build scenario. For NO_x and $PM_{2.5}$, the TEPA actually results in a lower health risk in comparison to the Future No Build scenario. These results support the findings of the Air Quality Impact Assessment.

An evaluation of the uncertainties in various measurements and methods used in the current risk assessment indicated that the risks have been over-estimated as a result of the assumptions made about exposure (which were generally conservative). The results of this uncertainty analysis support the overall conclusion of the assessment that the TEPA does not result in an increased health risk over the Future "No Build "scenario.

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APPENDIX A

PATHWAYS CALCULATIONS

Appendix A: Pathways Calculations

A.1 Inhalation Pathway

The dose due to inhalation (mg/m^3) is:

$$Dose = \frac{EF \times ED \times C_a}{AT} \times \frac{1}{1000} \quad \text{(A-1)}$$

where:

EF	=	exposure frequency (days/year) [assumed]
ED	=	exposure duration (years) [assumed]
Ca	=	concentration of constituent in air (µg/m^3) [predicted]
AT	=	attenuation (days) [receptor-specific]
1/1000	=	unit conversion (mg/µg)

The concentration of chemicals in air (Ca) is predicted by the air dispersion modelling and is specific to each chemical at each receptor location.

A.2 Ingestion Pathway

The general form of the equation used to determine the dose for individual COC due to the ingestion of chemicals in dust, soil and vegetation is:

$$Dose = \frac{ED \times EF \times R_{ing} \times C_x}{AT \times B_w} \times F_{location} \times \frac{1}{units\_conv} \quad \text{(A-2)}$$

where:

Ring	=	ingestion rate (g/d) [receptor-specific]
Bw	=	body weight of receptor (kg) [receptor-specific]
EF	=	exposure frequency (days/year) [assumed]
ED	=	exposure duration (years) [assumed]
AT	=	attenuation (days) [receptor-specific]
Cx	=	concentration of chemical for each x, such that
	Csoil	– (mg/kg) [calculated in (A-3)]
	Cdust	– (mg/kg) [assumed to = Csoil]
	Cveg	– (g/kg) [calculated in (A-10)]
Flocation	=	fraction of dose contributed by the site (-) [receptor-specific]
units_conv	=	1000 g/kg for vegetation and 1000000 mg/kg for soil and dust

The dose of the ingestion pathway for each COC is than calculated by the sum of the various pathways.

The concentration of the chemical in soil is calculated for carcinogens following (A-3).

$$Sc = \frac{Ds}{ks \times (T_c - T_1)} \times \left[\left(T_c + \frac{e^{-ks \times T_c}}{ks} \right) - \left(T_1 + \frac{e^{-ks \times T_1}}{ks} \right) \right]$$

where:

Ds	=	deposition term (mg/(kg yr)) [calculated (A-4)]
Tc	=	time period over which deposition occurs (yr) [assumed to be 75]
ks	=	soil loss constant (1/yr) [calculated (A-6)]
T1	=	time at beginning of exposure period (yr) [assumed to be 0]

The soil concentration used for non-carcinogens is $Sc_{Tc.}$

The deposition term (Ds) is calculated as follows:

$$Ds = \frac{1000}{z \times BD} \times \frac{V_{settle} \times C_a}{10000} \quad \text{(A-4)}$$

where:

1000	=	safety factor
z	=	soil mixing depth (cm) [tilled = 20, forage = 2]
BD	=	soil bulk density (g/cm^3) [assumed to be 1.5]
10000	=	conversion factor (m^2 to cm^2)
Vsettle	=	settling velocity (m/yr) [assumed to be 3153.6 m/yr, equivalent to 0.01 cm/s, using particle density of 4.0 g/cm^3, particle diameter 1 μm, and stable atmosphere with roughness height 0.1 cm]
Ca	=	concentration of chemical in air (μg/m^3) [predicted]

The soil mixing depth (z) changes depending on the type of exposure being calculated. For soil ingestion and root uptake for forage vegetation, the soil concentration calculated with z for forage was used. This was a cautious assumption, since soil concentrations for forage soils are generally higher than soil concentrations for tilled soils because the constituent is dispersed through a smaller region (2 cm vs. 20 cm) and therefore is found in greater concentrations. The tilled soil concentration was used for root uptake by above-ground vegetables and silage because these vegetation types are grown on tilled soil.

The soil concentration at time Tc (Sc_{Tc}) is calculated as follows:

$$Sc_{Tc} = \frac{Ds \times \left(1 - e^{(-ks \times Tc)}\right)}{ks} \quad \text{(A-5)}$$

where:

Ds	=	deposition term (mg/(kg yr)) [calculated (A-4)]
ks	=	soil loss constant (1/yr) [calculated (A-6)]
Tc	=	time period over which deposition occurs (yr) [assumed to be 75]

The soil loss constant (ks) accounts for the loss of chemical from soil by several mechanisms and is calculated as follows:

$$ks = ksl + kse + ksr + ksg + ksv \quad \text{(A-6)}$$

where:

ksl	=	loss constant due to leaching (1/yr) [calculated (A-7)]
kse	=	loss constant due to soil erosion (1/yr) [use recommended value of 0 (U.S. EPA (2005)]
ksr	=	loss constant due to surface runoff (1/yr) [calculated (A-8)]
ksg	=	loss constant due to degradation (1/yr) [assumed to be 0]
ksv	=	loss constant due to volatilization (1/yr) [calculated (A-9)]

The loss constant due to leaching (ksl) is calculated as follows:

$$ksl = \frac{q}{\Theta_s \times z \times \left[1 + \left(\frac{BD \times Kd_s}{\Theta_s}\right)\right]} \quad \text{(A-7)}$$

where:

q	=	average annual recharge (cm/yr) [assumed to be 5]
s	=	soil volumetric water content (mL/cm^3) [assumed to be 0.2]
z	=	soil mixing depth (cm) [tilled = 20, forage = 2]
Kds	=	soil-water partition coefficient (cm^3/g) [chemical-specific]
BD	=	soil bulk density (g/cm^3) [assumed to be 1.5]

The chemical loss constant due to runoff from soil (ksr) is calculated as follows:

$$ksr = \frac{R}{\Theta_s \times z} \times \left(\frac{1}{1 + \left(\frac{BD \times Kd_s}{\Theta_s} \right)} \right) \quad \text{(A-8)}$$

where:

R	=	average annual runoff (cm/yr) [assumed to be 2.5]
s	=	soil volumetric water content (mL/cm^3) [assumed to be 0.2]
z	=	soil mixing depth (cm) [tilled = 20, forage = 2]
BD	=	soil bulk density (g/cm^3) [assumed to be 1.5]
Kds	=	soil-water partition coefficient (cm^3/g) [chemical-specific]

The chemical loss constant due to volatilization from soil (ksv) is calculated as follows:

$$ksv = \left[\frac{3.1536 \times 10^7 \times H}{z \times Kd_s \times R \times T_a \times BD} \right] \times \left(\frac{D_a}{z} \right) \times \left[1 - \left(\frac{BD}{\rho_{soil}} \right) - \Theta_s \right] \quad \text{(A-9)}$$

where:

3.15 x 10^7=		conversion constant (s/yr)
H	=	Henry's Law constant (atm m^3/mol) [chemical-specific]
z	=	soil mixing depth (cm) [tilled = 20, forage = 1]
BD	=	soil bulk density (g/cm^3) [assumed to be 1.5]
Kds	=	soil-water partition coefficient (cm^3/g) [chemical-specific]
R	=	universal gas constant ((atm m^3)/(mol K)) [assumed to be 8.205 x 10^{-5}]
Ta	=	ambient air temperature (K) [assumed to be 285.15]
soil	=	Solids particle density (g/cm^3) [assumed to be 2.7]

Da = diffusivity of chemicals in air (cm^2/s) [chemical-specific]

s = soil volumetric water content (mL/cm^3) [assumed to be 0.2]

The chemical concentration in vegetation (C_{veg}) is calculated following (A-10) and includes the uptake of chemicals by roots, the direct deposition of chemicals from the air to vegetation surfaces, and the direct uptake by plant leaves of vapour phase chemicals in the air.

$$C_{veg} = C_r + C_d + C_v \quad \text{(A-10)}$$

where:

C_r = concentration in plant from root uptake (mg/kg DW) [calculated (A-11)]

C_d = concentration in plant from direct deposition (mg/kg DW) [calc (A-12)]

C_v = concentration in plant from air-to-plant transfer (mg/kg DW) [calc (A-13)]

The chemical concentration in above ground vegetation due to direct uptake of chemical from soil (C_r) is calculated as shown in (A-11). For vegetation, the tilled soil concentration was used with the Br for leafy vegetation. For forage, the forage soil concentration was used with the Br for forage. And for silage, the tilled soil concentration was used with the Br for forage.

$$C_r = C_{soil} \times Br \quad \text{(A-11)}$$

where:

C_{soil} = chemical concentration in soil (mg/kg) [calculated (A-3)]

Br = plant-soil bioconc. factor for veg ((µg/g DW)/(µg/g soil)) [chem.-specific]

The chemical concentration in above-ground vegetation due to wet and dry deposition of chemical to the plant surface (C_d) is calculated as follows:

$$C_d = \frac{(1-F_v)\times Fw\times V_{settle}\times C_a\times Rp\times\left[\left(1-e^{(-kp\times Tp)}\right)\right]}{Yp\times kp\times 1000} \quad \text{(A-12)}$$

where:

1000	=	units conversion factor (mg/g)
F_v	=	fraction of chemical in vapour phase (-) [chemical-specific]
V_{settle}	=	settling velocity (m/yr) [assumed to be 3153.6 m/yr, equivalent to 0.01 cm/s, using particle density of 4.0 g/cm^3, particle diameter 1 μm, and stable atmosphere with roughness height 0.1 cm]
C_a	=	concentration of chemical in air (μg/m^3) [predicted]
Fw	=	fraction of wet deposition that adheres to plant (-) [assumed 0.6]
Rp	=	interception fraction edible portion [veg =0.39, forage = 0.5, silage = 0.46]
kp	=	plant surface loss coefficient (1/yr) [assumed to be 18]
Tp	=	length of plant exposure to deposition of edible portion of plant (yrs) [veg = 0.164, forage = 0.12, silage = 0.16]
Yp	=	yield or standing crop biomass of the edible portion of plant (kg DW/m^2) [veg = 2.24, forage = 0.24, silage = 0.8]

The chemical concentration in aboveground vegetation due to the direct uptake of vapour phase chemicals into the plant leaves (C_v) is calculated as follows:

$$C_v = F_v \times \frac{C_a \times Bv \times VG_{ag}}{\rho_s} \qquad \text{(A-13)}$$

where:

F_v	=	fraction of chemical in vapour phase (-) [chemical-specific]
C_a	=	concentration of chemical in air (μg/m^3) [predicted]
Bv	=	air-to-plant biotransfer factor ((mg/kg plant DW)/(μg/g air)) [chemical-specific]
VG_{ag}	=	empirical correction (-) [assumed to be 0.01 for PAHs in veg, 1 for forage and non-PAHs in veg, 0.5 for silage]
ρ_s	=	density of air (g/m^3) [1.2 x 10^3]

A.3 Ingestion for Infant

The calculation of exposure to infants of chemical (mg/(kg d)) is calculated as follows:

$$Dose_{\text{infant}} = \frac{EF \times ED \times C_{breast\ milk} \times I_{breast\ milk} \times B_{oral}}{AT \times BW_{\text{infant}}} \quad \text{(A-14)}$$

where:

EF	=	exposure frequency (days/year) [assumed]
ED	=	exposure duration (years) [assumed]
AT	=	attenuation (days) [receptor-specific]
$C_{breast\ milk}$	=	concentration in breast milk (mg/g milk) [calculated (A-15)]
$I_{breast\ milk}$	=	infant ingestion rate of breast milk (g/day) [assumed to be 800]
B_{oral}	=	oral bioavailability (-) [assumed to be 1]
BW_{infant}	=	body weight of infant (kg) [assumed to be 8.2]

The concentration of each chemical in breast milk is related to the mother's ingestion as follows:

$$C_{breast\ milk} = \frac{Dose_{mother} \times BW_{mother} \times TF_{bm}}{1000} \quad \text{(A-15)}$$

where:

$Dose_{mother}$	=	ingestion dose (A-2) (mg/(kg day))
BW_{mother}	=	body weight of mother (kg) [assumed to be 70]
TF_{bm}	=	breast milk bio-transfer factor (mg/kg milk)/(mg/day) [calculated (A-16)]
1000	=	unit conversion factor (g/kg)

The breast milk bio-transfer factor (mg/kg milk)/(mg/day) is calculated following:

$$TF_{bm} = 2 \times 10^{-7} \times K_{ow} \quad \text{(A-16)}$$

where:

K_{ow}	=	octanol-water partition coefficient for each chemical [calculated from chem.-specific log K_{ow}]

APPENDIX B

RESULTS OF RISK ASSESSMENT CALCULATIONS

Appendix B: Results of Risk Assessment Calculations

This appendix provides all the results for the pathways modelling and risk assessment. Section B.1 provides the modelled maximum gaseous pollutant concentrations in air at all receptor locations for horizon years 2015, 2025 and 2035. Section B.2 provides the calculated hazard quotients for the gaseous pollutants. Section B.3 presents the modelled maximum air concentrations and the estimated soil concentrations for VOC at all receptor locations for the three horizon years. Section B.4 provides the doses calculated for VOC for ingestion and inhalation pathways. Section B.5 presents the results of the risk calculations for the carcinogenic VOC and Section B.6 reports the hazard quotients calculated for the non-carcinogenic VOC.

B.1 Gaseous Air Pollutant Concentrations

TABLE B.1-1: MAXIMUM PREDICTED AIR CONCENTRATIONS FOR GASEOUS AIR POLLUTANTS EMITTED FROM VEHICLES FOR YEAR 2015

	NO_x 1 hr ($\mu g/m^3$)		NOx Annual ($\mu g/m^3$)		SO_x 1 hr ($\mu g/m^3$)		SO_x 24 hr ($\mu g/m^3$)		$PM_{2.5}$ 24 hr ($\mu g/m^3$)	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	144.4	110.2	83.5	78.9	32.2	32.3	32.1	32.1	22.3	22.1
Bellwood Estates - 58	247.8	180.2	117.7	91.6	32.8	32.8	32.2	32.2	24.0	22.0
Bellwood Estates - 403	123.7	111.9	82.4	77.2	32.3	32.3	32.1	32.1	21.6	21.6
Grand Marais Roads - 74	227.9	161.4	111.4	88.2	32.6	32.7	32.1	32.1	23.7	22.5
Grand Marais Roads - 186	176.8	132.0	96.8	81.9	32.4	32.5	32.1	32.1	22.6	21.8
Heritage Estates - 910	114.9	95.2	75.5	74.5	32.2	32.2	32.0	32.0	21.3	21.4
Home for Aged LaSalle - 944	138.0	107.2	78.2	74.1	32.2	32.3	32.0	32.0	21.3	21.3
Home for Aged LaSalle - 945	144.4	109.6	79.6	74.2	32.2	32.3	32.0	32.0	21.3	21.4
Huron Estates - 295	137.2	124.6	83.8	79.2	32.3	32.4	32.1	32.1	22.0	21.7
Huron Estates - 410	120.7	111.7	80.3	76.4	32.2	32.3	32.0	32.0	21.7	21.5
Kendleton Court - 781	174.8	120.9	88.0	81.8	32.3	32.3	32.1	32.1	22.1	22.4
Oliver Estates - 858	146.6	129.2	79.1	81.3	32.2	32.4	32.0	32.0	21.4	22.1
Oliver Estates - 1997	172.9	161.4	81.5	83.2	32.3	32.5	32.0	32.0	21.7	22.4
Reddock - 423	136.1	106.1	80.1	76.5	32.2	32.3	32.0	32.0	21.7	21.6
Residential - 2478	133.7	114.5	76.4	74.6	32.3	32.3	32.0	32.0	21.4	21.4
Southwood Lakes - 867	109.8	98.5	77.5	76.7	32.1	32.2	32.0	32.0	21.4	21.5
Spring Garden - 1513	119.2	133.7	78.2	79.0	32.3	32.5	32.1	32.1	21.3	21.6
Spring Garden - 1644	119.9	111.3	78.0	77.5	32.3	32.3	32.0	32.0	21.4	21.4
St. Clair College - 2480	98.9	94.0	78.3	74.8	32.1	32.2	32.0	32.0	21.7	21.5
Villa Borghese - 828	154.3	99.1	84.3	76.4	32.2	32.2	32.0	32.0	21.6	21.7
Villa Paradiso Cres. - 848	120.1	108.5	78.3	77.9	32.2	32.2	32.0	32.0	21.6	22.0

TABLE B.1-2: MAXIMUM PREDICTED AIR CONCENTRATIONS FOR GASEOUS AIR POLLUTANTS EMITTED FROM VEHICLES FOR YEAR 2025

	NO_x 1 hr ($\mu g/m^3$)		NO_x Annual ($\mu g/m^3$)		SO_x 1 hr ($\mu g/m^3$)		SO_x 24 hr ($\mu g/m^3$)		$PM_{2.5}$ 24 hr ($\mu g/m^3$)	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	131.4	85.4	79.9	73.5	32.2	32.3	32.1	32.1	22.7	22.7
Bellwood Estates - 58	198.1	125.0	103.2	80.7	32.9	32.9	32.2	32.2	24.2	23.0
Bellwood Estates - 403	104.9	99.5	78.4	73.6	32.3	32.3	32.1	32.1	21.7	22.2
Grand Marais Roads - 74	185.7	113.8	98.5	77.4	32.7	32.8	32.2	32.2	23.9	23.1
Grand Marais Roads - 186	146.1	100.8	88.5	74.7	32.5	32.5	32.1	32.1	22.8	22.4
Heritage Estates - 910	104.0	80.0	73.4	71.6	32.2	32.2	32.0	32.0	21.6	21.7
Home for Aged LaSalle - 944	129.0	85.4	75.7	71.6	32.2	32.3	32.0	32.0	21.5	21.4
Home for Aged LaSalle - 945	141.7	84.8	77.2	71.3	32.3	32.3	32.0	32.0	21.5	21.4
Huron Estates - 295	115.6	97.4	80.2	73.5	32.3	32.4	32.1	32.1	22.1	22.2
Huron Estates - 410	104.9	89.7	77.6	72.5	32.3	32.3	32.0	32.0	21.8	21.8
Kendleton Court - 781	170.3	90.1	85.8	74.6	32.3	32.4	32.1	32.1	22.8	23.1
Oliver Estates - 858	144.5	93.7	77.7	74.4	32.2	32.4	32.0	32.0	21.6	22.9
Oliver Estates - 1997	163.5	104.9	79.2	75.1	32.3	32.6	32.0	32.0	22.0	23.2
Reddock - 423	125.4	87.7	77.5	72.5	32.2	32.3	32.0	32.0	21.9	21.8
Residential - 2478	111.5	86.9	74.0	71.7	32.3	32.4	32.0	32.0	21.6	21.6
Southwood Lakes - 867	106.1	81.1	75.5	72.4	32.2	32.2	32.0	32.0	21.7	22.0
Spring Garden - 1513	95.9	98.5	74.7	74.0	32.4	32.6	32.1	32.1	21.4	22.2
Spring Garden - 1644	97.4	89.3	74.9	73.3	32.4	32.4	32.1	32.1	21.5	21.7
St. Clair College - 2480	93.5	78.8	76.1	71.9	32.1	32.2	32.0	32.0	21.9	21.9
Villa Borghese - 828	148.7	83.5	83.7	72.8	32.2	32.2	32.0	32.0	22.1	21.8
Villa Paradiso Cres. - 848	113.9	83.3	76.4	73.1	32.2	32.3	32.0	32.0	22.1	22.5

TABLE B.1-3: MAXIMUM PREDICTED AIR CONCENTRATIONS FOR GASEOUS AIR POLLUTANTS EMITTED FROM VEHICLES FOR YEAR 2035

	NO_x 1 hr ($\mu g/m^3$)		NO_x Annual ($\mu g/m^3$)		SO_x 1 hr ($\mu g/m^3$)		SO_x 24 hr ($\mu g/m^3$)		$PM_{2.5}$ 24 hr ($\mu g/m^3$)	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	148.9	83.5	81.6	73.1	32.2	32.3	32.1	32.1	23.6	23.0
Bellwood Estates - 58	225.1	129.0	107.1	80.2	32.9	33.1	32.2	32.2	25.4	23.6
Bellwood Estates - 403	112.8	100.6	80.1	73.3	32.3	32.4	32.1	32.1	22.2	22.7
Grand Marais Roads - 74	197.1	115.1	103.2	76.8	32.7	32.9	32.2	32.2	25.3	23.1
Grand Marais Roads - 186	156.9	103.0	91.4	74.4	32.5	32.6	32.1	32.1	23.7	22.5
Heritage Estates - 910	108.7	80.0	73.8	71.4	32.2	32.2	32.0	32.0	21.7	21.7
Home for Aged LaSalle - 944	147.9	84.6	77.4	71.4	32.3	32.4	32.0	32.0	21.7	21.5
Home for Aged LaSalle - 945	160.5	85.2	79.1	71.3	32.3	32.4	32.0	32.0	21.7	21.6
Huron Estates - 295	121.1	98.0	81.8	73.2	32.4	32.5	32.1	32.1	22.5	22.3
Huron Estates - 410	109.8	89.5	78.7	72.3	32.3	32.4	32.1	32.1	22.2	21.9
Kendleton Court - 781	186.0	87.5	88.2	74.1	32.3	32.4	32.1	32.1	23.2	23.4
Oliver Estates - 858	155.4	91.4	78.6	73.9	32.2	32.5	32.0	32.0	21.8	23.0
Oliver Estates - 1997	178.9	100.6	80.5	74.5	32.3	32.7	32.1	32.1	22.3	23.4
Reddock - 423	142.3	88.0	79.6	72.3	32.3	32.4	32.0	32.0	22.3	22.0
Residential - 2478	117.5	87.3	74.6	71.6	32.3	32.4	32.0	32.0	21.8	21.7
Southwood Lakes - 867	110.6	80.1	76.2	72.2	32.2	32.3	32.0	32.0	21.7	21.8
Spring Garden - 1513	98.4	100.2	75.3	74.2	32.4	32.7	32.1	32.1	21.5	22.5
Spring Garden - 1644	98.4	90.7	75.5	73.4	32.4	32.4	32.1	32.1	21.7	22.0
St. Clair College - 2480	99.3	78.3	76.8	71.6	32.1	32.2	32.0	32.0	22.3	22.0
Villa Borghese - 828	171.8	83.3	87.7	72.5	32.2	32.3	32.1	32.1	22.5	22.0
Villa Paradiso Cres. - 848	119.9	81.8	77.1	72.7	32.2	32.3	32.0	32.0	22.4	22.7

B.2 Hazard Quotient for Gaseous Pollutant

TABLE B.2-1: HAZARD QUOTIENT ASSOCIATED WITH EXPOSURE TO GASEOUS AIR POLLUTANTS (INCLUDING BACKGROUND) FOR YEAR 2015

	TRV=200 µg/m^3		TRV=40 µg/m^3		TRV=350 µg/m^3		TRV=125 µg/m^3		TRV=15 µg/m^3		TRV=7 µg/m^3	
	NO_x 1 hr		NO_x Annual		SO_x 1 hr		SO_x 24 hr		$PM_{2.5}$ 24 hr		$PM_{2.5}$ 24 hr	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.72	0.55	**2.1**	**2.0**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Bellwood Estates - 58	**1.2**	0.90	**2.9**	**2.3**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.4**	**3.1**
Bellwood Estates - 403	0.62	0.56	**2.1**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Grand Marais Roads - 74	**1.1**	0.81	**2.8**	**2.2**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.4**	**3.2**
Grand Marais Roads - 186	0.88	0.66	**2.4**	**2.0**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Heritage Estates - 910	0.57	0.48	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.0**	**3.1**
Home for Aged LaSalle - 944	0.69	0.54	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.0**	**3.0**
Home for Aged LaSalle - 945	0.72	0.55	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.0**	**3.1**
Huron Estates - 295	0.69	0.62	**2.1**	**2.0**	0.09	0.09	0.26	0.26	**1.5**	**1.4**	**3.1**	**3.1**
Huron Estates - 410	0.60	0.56	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Kendleton Court - 781	0.87	0.60	**2.2**	**2.0**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Oliver Estates - 858	0.73	0.65	**2.0**	**2.0**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.2**
Oliver Estates - 1997	0.86	0.81	**2.0**	**2.1**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.2**
Reddock - 423	0.68	0.53	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Residential - 2478	0.67	0.57	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Southwood Lakes - 867	0.55	0.49	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Spring Garden - 1513	0.60	0.67	**2.0**	**2.0**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.0**	**3.1**
Spring Garden - 1644	0.60	0.56	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
St. Clair College - 2480	0.49	0.47	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Villa Borghese - 828	0.77	0.50	**2.1**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Villa Paradiso Cres. - 848	0.60	0.54	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.1**

TABLE B.2-2: HAZARD QUOTIENT ASSOCIATED WITH EXPOSURE TO GASEOUS AIR POLLUTANTS (INCLUDING BACKGROUND) FOR YEAR 2025

	TRV=200 µg/m^3		TRV=40 µg/m^3		TRV=350 µg/m^3		TRV=125 µg/m^3		TRV=15 µg/m^3		TRV=7 µg/m^3	
	NO_x 1 hr		NO_x Annual		SO_x 1 hr		SO_x 24 hr		$PM_{2.5}$ 24 hr		$PM_{2.5}$ 24 hr	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.66	0.43	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Bellwood Estates - 58	0.99	0.63	**2.6**	**2.0**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.5**	**3.3**
Bellwood Estates - 403	0.52	0.50	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.2**
Grand Marais Roads - 74	0.93	0.57	**2.5**	**1.9**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.4**	**3.3**
Grand Marais Roads - 186	0.73	0.50	**2.2**	**1.9**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.3**	**3.2**
Heritage Estates - 910	0.52	0.40	**1.8**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Home for Aged LaSalle - 944	0.64	0.43	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Home for Aged LaSalle - 945	0.71	0.42	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Huron Estates - 295	0.58	0.49	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Huron Estates - 410	0.52	0.45	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.1**	**3.1**
Kendleton Court - 781	0.85	0.45	**2.1**	**1.9**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.3**	**3.3**
Oliver Estates - 858	0.72	0.47	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.3**
Oliver Estates - 1997	0.82	0.52	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.1**	**3.3**
Reddock - 423	0.63	0.44	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.1**	**3.1**
Residential - 2478	0.56	0.43	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Southwood Lakes - 867	0.53	0.41	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.1**
Spring Garden - 1513	0.48	0.49	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.2**
Spring Garden - 1644	0.49	0.45	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
St. Clair College - 2480	0.47	0.39	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.1**	**3.1**
Villa Borghese - 828	0.74	0.42	**2.1**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Villa Paradiso Cres. - 848	0.57	0.42	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**

TABLE B.2-3: HAZARD QUOTIENT ASSOCIATED WITH EXPOSURE TO GASEOUS AIR POLLUTANTS (INCLUDING BACKGROUND) FOR YEAR 2035

	TRV=200 µg/m^3		TRV=40 µg/m^3		TRV=350 µg/m^3		TRV=125 µg/m^3		TRV=15 µg/m^3		TRV=7 µg/m^3	
	NO_x 1 hr		NO_x Annual		SO_x 1 hr		SO_x 24 hr		$PM_{2.5}$ 24 hr		$PM_{2.5}$ 24 hr	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.74	0.42	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.4**	**3.3**
Bellwood Estates - 58	**1.1**	0.64	**2.7**	**2.0**	0.09	0.09	0.26	0.26	**1.7**	**1.6**	**3.6**	**3.4**
Bellwood Estates - 403	0.56	0.50	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Grand Marais Roads - 74	0.99	0.58	**2.6**	**1.9**	0.09	0.09	0.26	0.26	**1.7**	**1.5**	**3.6**	**3.3**
Grand Marais Roads - 186	0.78	0.52	**2.3**	**1.9**	0.09	0.09	0.26	0.26	**1.6**	**1.5**	**3.4**	**3.2**
Heritage Estates - 910	0.54	0.40	**1.8**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Home for Aged LaSalle - 944	0.74	0.42	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Home for Aged LaSalle - 945	0.80	0.43	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.4**	**3.1**	**3.1**
Huron Estates - 295	0.61	0.49	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**
Huron Estates - 410	0.55	0.45	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Kendleton Court - 781	0.93	0.44	**2.2**	**1.9**	0.09	0.09	0.26	0.26	**1.5**	**1.6**	**3.3**	**3.3**
Oliver Estates - 858	0.78	0.46	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.1**	**3.3**
Oliver Estates - 1997	0.89	0.50	**2.0**	**1.9**	0.09	0.09	0.26	0.26	**1.5**	**1.6**	**3.2**	**3.3**
Reddock - 423	0.71	0.44	**2.0**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Residential - 2478	0.59	0.44	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.4**	**3.1**	**3.1**
Southwood Lakes - 867	0.55	0.40	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.1**
Spring Garden - 1513	0.49	0.50	**1.9**	**1.9**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.2**
Spring Garden - 1644	0.49	0.45	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.4**	**1.5**	**3.1**	**3.1**
St. Clair College - 2480	0.50	0.39	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Villa Borghese - 828	0.86	0.42	**2.2**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.1**
Villa Paradiso Cres. - 848	0.60	0.41	**1.9**	**1.8**	0.09	0.09	0.26	0.26	**1.5**	**1.5**	**3.2**	**3.2**

B.3 Maximum Predicted VOC Concentrations

TABLE B.3-1: MAXIMUM PREDICTED AIR CONCENTRATIONS (MG/M3) FOR VOC EMITTED FROM VEHICLES IN YEAR 2015

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	2.384	2.387	0.169	0.169	4.369	4.362	2.363	2.361	0.154	0.153
Bellwood Estates - 58	2.581	2.572	0.195	0.189	4.507	4.436	2.418	2.392	0.162	0.158
Bellwood Estates - 403	2.385	2.390	0.169	0.169	4.364	4.356	2.361	2.358	0.153	0.152
Grand Marais Roads - 74	2.518	2.497	0.187	0.182	4.476	4.420	2.405	2.384	0.160	0.157
Grand Marais Roads - 186	2.451	2.435	0.178	0.175	4.420	4.384	2.383	2.369	0.156	0.154
Heritage Estates - 910	2.347	2.355	0.164	0.165	4.337	4.339	2.350	2.351	0.151	0.151
Home for Aged LaSalle - 944	2.359	2.360	0.166	0.165	4.346	4.342	2.354	2.352	0.151	0.151
Home for Aged LaSalle - 945	2.363	2.360	0.166	0.166	4.350	4.344	2.355	2.353	0.152	0.151
Huron Estates - 295	2.400	2.394	0.170	0.170	4.369	4.367	2.363	2.362	0.153	0.153
Huron Estates - 410	2.381	2.378	0.168	0.167	4.355	4.351	2.358	2.356	0.152	0.152
Kendleton Court - 781	2.397	2.405	0.171	0.171	4.374	4.378	2.365	2.367	0.154	0.154
Oliver Estates - 858	2.368	2.414	0.166	0.173	4.343	4.380	2.353	2.368	0.152	0.154
Oliver Estates - 1997	2.386	2.427	0.169	0.174	4.358	4.389	2.359	2.371	0.153	0.154
Reddock - 423	2.368	2.378	0.167	0.168	4.352	4.354	2.356	2.357	0.152	0.152
Residential - 2478	2.351	2.362	0.165	0.166	4.342	4.342	2.352	2.352	0.151	0.151
Southwood Lakes - 867	2.368	2.395	0.166	0.169	4.345	4.355	2.354	2.358	0.152	0.152
Spring Garden - 1513	2.394	2.419	0.169	0.172	4.353	4.365	2.357	2.362	0.152	0.153
Spring Garden - 1644	2.385	2.401	0.168	0.170	4.352	4.357	2.356	2.359	0.152	0.152
St. Clair College - 2480	2.357	2.357	0.165	0.165	4.343	4.340	2.353	2.352	0.152	0.152
Villa Borghese - 828	2.378	2.388	0.168	0.168	4.358	4.351	2.359	2.356	0.153	0.152
Villa Paradiso Cres. - 848	2.364	2.378	0.166	0.168	4.348	4.356	2.355	2.358	0.152	0.153

TABLE B.3-2: MAXIMUM PREDICTED AIR CONCENTRATIONS (MG/M3) FOR VOC EMITTED FROM VEHICLES IN YEAR 2025

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	2.373	2.380	0.168	0.169	4.368	4.364	2.363	2.361	0.154	0.153
Bellwood Estates - 58	2.547	2.545	0.191	0.187	4.501	4.434	2.415	2.391	0.161	0.157
Bellwood Estates - 403	2.378	2.385	0.168	0.169	4.361	4.358	2.360	2.359	0.153	0.152
Grand Marais Roads - 74	2.494	2.485	0.185	0.181	4.471	4.421	2.403	2.384	0.160	0.156
Grand Marais Roads - 186	2.435	2.426	0.176	0.174	4.417	4.386	2.381	2.370	0.156	0.154
Heritage Estates - 910	2.343	2.350	0.164	0.165	4.336	4.340	2.350	2.351	0.151	0.151
Home for Aged LaSalle - 944	2.353	2.357	0.165	0.165	4.345	4.343	2.353	2.352	0.151	0.151
Home for Aged LaSalle - 945	2.356	2.356	0.166	0.165	4.348	4.345	2.354	2.353	0.152	0.151
Huron Estates - 295	2.390	2.389	0.169	0.170	4.367	4.369	2.363	2.363	0.153	0.153
Huron Estates - 410	2.371	2.373	0.167	0.167	4.353	4.352	2.357	2.356	0.152	0.152
Kendleton Court - 781	2.382	2.397	0.169	0.171	4.372	4.382	2.364	2.368	0.154	0.154
Oliver Estates - 858	2.360	2.407	0.165	0.172	4.342	4.381	2.352	2.368	0.152	0.154
Oliver Estates - 1997	2.374	2.418	0.168	0.174	4.356	4.391	2.358	2.372	0.153	0.155
Reddock - 423	2.362	2.374	0.166	0.168	4.351	4.356	2.356	2.358	0.152	0.152
Residential - 2478	2.346	2.361	0.164	0.166	4.341	4.343	2.351	2.352	0.151	0.151
Southwood Lakes - 867	2.360	2.388	0.165	0.169	4.343	4.354	2.353	2.358	0.152	0.152
Spring Garden - 1513	2.386	2.412	0.168	0.171	4.351	4.364	2.356	2.362	0.152	0.153
Spring Garden - 1644	2.374	2.394	0.167	0.170	4.350	4.358	2.356	2.359	0.152	0.153
St. Clair College - 2480	2.350	2.353	0.165	0.165	4.343	4.341	2.353	2.352	0.152	0.152
Villa Borghese - 828	2.369	2.384	0.167	0.168	4.357	4.352	2.358	2.357	0.153	0.152
Villa Paradiso Cres. - 848	2.355	2.372	0.165	0.168	4.347	4.359	2.354	2.359	0.152	0.153

TABLE B.3-3: MAXIMUM PREDICTED AIR CONCENTRATIONS (MG/M^3) FOR VOC EMITTED FROM VEHICLES IN YEAR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	2.372	2.384	0.169	0.169	4.376	4.371	2.365	2.364	0.154	0.154
Bellwood Estates - 58	2.551	2.562	0.193	0.190	4.521	4.453	2.423	2.398	0.163	0.158
Bellwood Estates - 403	2.379	2.391	0.169	0.170	4.367	4.367	2.362	2.362	0.153	0.153
Grand Marais Roads - 74	2.499	2.501	0.186	0.183	4.490	4.436	2.410	2.390	0.161	0.157
Grand Marais Roads - 186	2.438	2.437	0.178	0.176	4.429	4.397	2.386	2.374	0.157	0.155
Heritage Estates - 910	2.343	2.353	0.164	0.165	4.339	4.343	2.351	2.353	0.151	0.152
Home for Aged LaSalle - 944	2.354	2.361	0.166	0.166	4.348	4.349	2.354	2.355	0.152	0.152
Home for Aged LaSalle - 945	2.357	2.363	0.166	0.166	4.353	4.351	2.356	2.356	0.152	0.151
Huron Estates - 295	2.391	2.396	0.170	0.170	4.373	4.377	2.365	2.366	0.154	0.154
Huron Estates - 410	2.373	2.378	0.168	0.168	4.358	4.358	2.359	2.359	0.153	0.152
Kendleton Court - 781	2.382	2.402	0.170	0.172	4.379	4.393	2.367	2.372	0.154	0.155
Oliver Estates - 858	2.361	2.413	0.166	0.173	4.345	4.388	2.353	2.371	0.152	0.154
Oliver Estates - 1997	2.375	2.425	0.168	0.175	4.360	4.401	2.359	2.375	0.153	0.155
Reddock - 423	2.363	2.382	0.167	0.169	4.356	4.363	2.358	2.361	0.153	0.153
Residential - 2478	2.346	2.362	0.164	0.166	4.345	4.347	2.353	2.354	0.152	0.152
Southwood Lakes - 867	2.361	2.391	0.166	0.169	4.345	4.360	2.354	2.360	0.152	0.152
Spring Garden - 1513	2.388	2.422	0.169	0.173	4.354	4.379	2.358	2.367	0.152	0.154
Spring Garden - 1644	2.376	2.403	0.168	0.171	4.353	4.369	2.357	2.363	0.152	0.153
St. Clair College - 2480	2.350	2.356	0.165	0.165	4.347	4.345	2.354	2.354	0.152	0.152
Villa Borghese - 828	2.372	2.386	0.168	0.169	4.362	4.356	2.360	2.358	0.153	0.153
Villa Paradiso Cres. - 848	2.355	2.376	0.166	0.168	4.351	4.366	2.356	2.362	0.152	0.153

TABLE B.3-4: MAXIMUM PREDICTED SOIL CONCENTRATIONS (MG/KG) FOR VOC EMITTED FROM VEHICLES IN YEAR 2015

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.00353	0.00354	0.0000134	0.0000134	73.1	72.9	0.00197	0.00196	0.000228	0.000227
Bellwood Estates - 58	0.00383	0.00381	0.0000154	0.0000149	75.4	74.2	0.00201	0.00199	0.000240	0.000234
Bellwood Estates - 403	0.00353	0.00354	0.0000134	0.0000134	73.0	72.8	0.00196	0.00196	0.000227	0.000225
Grand Marais Roads - 74	0.00373	0.00370	0.0000148	0.0000144	74.9	73.9	0.00200	0.00198	0.000237	0.000233
Grand Marais Roads - 186	0.00363	0.00361	0.0000141	0.0000138	73.9	73.3	0.00198	0.00197	0.000231	0.000228
Heritage Estates - 910	0.00348	0.00349	0.0000130	0.0000130	72.5	72.6	0.00196	0.00196	0.000224	0.000224
Home for Aged LaSalle - 944	0.00350	0.00350	0.0000131	0.0000130	72.7	72.6	0.00196	0.00196	0.000224	0.000224
Home for Aged LaSalle - 945	0.00350	0.00350	0.0000131	0.0000131	72.7	72.6	0.00196	0.00196	0.000225	0.000224
Huron Estates - 295	0.00356	0.00355	0.0000134	0.0000134	73.1	73.0	0.00197	0.00197	0.000227	0.000227
Huron Estates - 410	0.00353	0.00352	0.0000133	0.0000132	72.8	72.8	0.00196	0.00196	0.000225	0.000225
Kendleton Court - 781	0.00355	0.00356	0.0000135	0.0000135	73.1	73.2	0.00197	0.00197	0.000228	0.000228
Oliver Estates - 858	0.00351	0.00358	0.0000131	0.0000137	72.6	73.2	0.00196	0.00197	0.000225	0.000228
Oliver Estates - 1997	0.00354	0.00360	0.0000134	0.0000138	72.9	73.4	0.00196	0.00197	0.000227	0.000228
Reddock - 423	0.00351	0.00352	0.0000132	0.0000133	72.8	72.8	0.00196	0.00196	0.000225	0.000225
Residential - 2478	0.00348	0.00350	0.0000130	0.0000131	72.6	72.6	0.00196	0.00196	0.000224	0.000224
Southwood Lakes - 867	0.00351	0.00355	0.0000131	0.0000134	72.7	72.8	0.00196	0.00196	0.000225	0.000225
Spring Garden - 1513	0.00355	0.00359	0.0000134	0.0000136	72.8	73.0	0.00196	0.00197	0.000225	0.000227
Spring Garden - 1644	0.00353	0.00356	0.0000133	0.0000134	72.8	72.9	0.00196	0.00196	0.000225	0.000225
St. Clair College - 2480	0.00349	0.00349	0.0000130	0.0000130	72.6	72.6	0.00196	0.00196	0.000225	0.000225
Villa Borghese - 828	0.00352	0.00354	0.0000133	0.0000133	72.9	72.8	0.00196	0.00196	0.000227	0.000225
Villa Paradiso Cres. - 848	0.00350	0.00352	0.0000131	0.0000133	72.7	72.8	0.00196	0.00196	0.000225	0.000227

TABLE B.3-5: MAXIMUM PREDICTED SOIL CONCENTRATIONS (MG/KG) FOR VOC EMITTED FROM VEHICLES IN YEAR 2025

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.00352	0.00353	0.0000133	0.0000134	73.0	73.0	0.00197	0.00196	0.000228	0.000227
Bellwood Estates - 58	0.00378	0.00377	0.0000151	0.0000148	75.3	74.1	0.00201	0.00199	0.000239	0.000233
Bellwood Estates - 403	0.00352	0.00353	0.0000133	0.0000134	72.9	72.9	0.00196	0.00196	0.000227	0.000225
Grand Marais Roads - 74	0.00370	0.00368	0.0000146	0.0000143	74.8	73.9	0.00200	0.00198	0.000237	0.000231
Grand Marais Roads - 186	0.00361	0.00360	0.0000139	0.0000138	73.9	73.3	0.00198	0.00197	0.000231	0.000228
Heritage Estates - 910	0.00347	0.00348	0.0000130	0.0000130	72.5	72.6	0.00196	0.00196	0.000224	0.000224
Home for Aged LaSalle - 944	0.00349	0.00349	0.0000130	0.0000130	72.7	72.6	0.00196	0.00196	0.000224	0.000224
Home for Aged LaSalle - 945	0.00349	0.00349	0.0000131	0.0000130	72.7	72.7	0.00196	0.00196	0.000225	0.000224
Huron Estates - 295	0.00354	0.00354	0.0000134	0.0000134	73.0	73.1	0.00197	0.00197	0.000227	0.000227
Huron Estates - 410	0.00351	0.00352	0.0000132	0.0000132	72.8	72.8	0.00196	0.00196	0.000225	0.000225
Kendleton Court - 781	0.00353	0.00355	0.0000134	0.0000135	73.1	73.3	0.00197	0.00197	0.000228	0.000228
Oliver Estates - 858	0.00350	0.00357	0.0000130	0.0000136	72.6	73.3	0.00196	0.00197	0.000225	0.000228
Oliver Estates - 1997	0.00352	0.00358	0.0000133	0.0000138	72.8	73.4	0.00196	0.00197	0.000227	0.000230
Reddock - 423	0.00350	0.00352	0.0000131	0.0000133	72.8	72.8	0.00196	0.00196	0.000225	0.000225
Residential - 2478	0.00348	0.00350	0.0000130	0.0000131	72.6	72.6	0.00196	0.00196	0.000224	0.000224
Southwood Lakes - 867	0.00350	0.00354	0.0000130	0.0000134	72.6	72.8	0.00196	0.00196	0.000225	0.000225
Spring Garden - 1513	0.00354	0.00357	0.0000133	0.0000135	72.8	73.0	0.00196	0.00197	0.000225	0.000227
Spring Garden - 1644	0.00352	0.00355	0.0000132	0.0000134	72.7	72.9	0.00196	0.00196	0.000225	0.000227
St. Clair College - 2480	0.00348	0.00349	0.0000130	0.0000130	72.6	72.6	0.00196	0.00196	0.000225	0.000225
Villa Borghese - 828	0.00351	0.00353	0.0000132	0.0000133	72.9	72.8	0.00196	0.00196	0.000227	0.000225
Villa Paradiso Cres. - 848	0.00349	0.00352	0.0000130	0.0000133	72.7	72.9	0.00196	0.00196	0.000225	0.000227

TABLE B.3-6: MAXIMUM PREDICTED SOIL CONCENTRATIONS (MG/KG) FOR VOC EMITTED FROM VEHICLES IN YEAR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	0.00352	0.00353	0.0000134	0.0000134	73.2	73.1	0.00197	0.00197	0.000228	0.000228
Bellwood Estates - 58	0.00378	0.00380	0.0000153	0.0000150	75.6	74.5	0.00202	0.00200	0.000242	0.000234
Bellwood Estates - 403	0.00353	0.00354	0.0000134	0.0000134	73.0	73.0	0.00197	0.00197	0.000227	0.000227
Grand Marais Roads - 74	0.00370	0.00371	0.0000147	0.0000145	75.1	74.2	0.00201	0.00199	0.000239	0.000233
Grand Marais Roads - 186	0.00361	0.00361	0.0000141	0.0000139	74.1	73.5	0.00199	0.00198	0.000233	0.000230
Heritage Estates - 910	0.00347	0.00349	0.0000130	0.0000130	72.6	72.6	0.00196	0.00196	0.000224	0.000225
Home for Aged LaSalle - 944	0.00349	0.00350	0.0000131	0.0000131	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Home for Aged LaSalle - 945	0.00349	0.00350	0.0000131	0.0000131	72.8	72.8	0.00196	0.00196	0.000225	0.000224
Huron Estates - 295	0.00354	0.00355	0.0000134	0.0000134	73.1	73.2	0.00197	0.00197	0.000228	0.000228
Huron Estates - 410	0.00352	0.00352	0.0000133	0.0000133	72.9	72.9	0.00196	0.00196	0.000227	0.000225
Kendleton Court - 781	0.00353	0.00356	0.0000134	0.0000136	73.2	73.5	0.00197	0.00197	0.000228	0.000230
Oliver Estates - 858	0.00350	0.00358	0.0000131	0.0000137	72.7	73.4	0.00196	0.00197	0.000225	0.000228
Oliver Estates - 1997	0.00352	0.00359	0.0000133	0.0000138	72.9	73.6	0.00196	0.00198	0.000227	0.000230
Reddock - 423	0.00350	0.00353	0.0000132	0.0000134	72.8	73.0	0.00196	0.00196	0.000227	0.000227
Residential - 2478	0.00348	0.00350	0.0000130	0.0000131	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Southwood Lakes - 867	0.00350	0.00354	0.0000131	0.0000134	72.7	72.9	0.00196	0.00196	0.000225	0.000225
Spring Garden - 1513	0.00354	0.00359	0.0000134	0.0000137	72.8	73.2	0.00196	0.00197	0.000225	0.000228
Spring Garden - 1644	0.00352	0.00356	0.0000133	0.0000135	72.8	73.1	0.00196	0.00197	0.000225	0.000227
St. Clair College - 2480	0.00348	0.00349	0.0000130	0.0000130	72.7	72.7	0.00196	0.00196	0.000225	0.000225
Villa Borghese - 828	0.00352	0.00354	0.0000133	0.0000134	72.9	72.8	0.00196	0.00196	0.000227	0.000227
Villa Paradiso Cres. - 848	0.00349	0.00352	0.0000131	0.0000133	72.8	73.0	0.00196	0.00197	0.000225	0.000227

B.4 Dose Calculations for VOC

TABLE B.4-1: CALCULATED INHALATION DOSE FOR ALL RECEPTORS (mg/m^3) EXPOSED TO VOC IN YEAR 2015

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Bellwood Estates - 58	$2.6x10^{-3}$	$2.6x10^{-3}$	$2.0x10^{-4}$	$1.9x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Bellwood Estates - 403	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Grand Marais Roads - 74	$2.5x10^{-3}$	$2.5x10^{-3}$	$1.9x10^{-4}$	$1.8x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Grand Marais Roads - 186	$2.5x10^{-3}$	$2.4x10^{-3}$	$1.8x10^{-4}$	$1.8x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.5x10^{-4}$
Heritage Estates - 910	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 944	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 945	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 295	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 410	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Kendleton Court - 781	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 858	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 1997	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Reddock - 423	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Residential - 2478	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Southwood Lakes - 867	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1513	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1644	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
St. Clair College - 2480	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Borghese - 828	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Paradiso Cres. - 848	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$

Note: The inhalation dose for formaldehyde is for the composite receptor as it is considered to be a carcinogen.

TABLE B.4-2: CALCULATED INHALATION DOSE FOR ALL RECEPTORS (mg/m^3) EXPOSED TO VOC IN YEAR 2025

Receptor Locations	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
	No Build	TEPA	No Build	TEPA	No Build	TEPA	No Build	TEPA	No Build	TEPA
Ball Field - 2479	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Bellwood Estates - 58	$2.5x10^{-3}$	$2.5x10^{-3}$	$1.9x10^{-4}$	$1.9x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Bellwood Estates - 403	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Grand Marais Roads - 74	$2.5x10^{-3}$	$2.5x10^{-3}$	$1.9x10^{-4}$	$1.8x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Grand Marais Roads - 186	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.8x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.5x10^{-4}$
Heritage Estates - 910	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 944	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 945	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 295	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 410	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Kendleton Court - 781	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 858	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 1997	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.6x10^{-4}$
Reddock - 423	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Residential - 2478	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Southwood Lakes - 867	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1513	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1644	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
St. Clair College - 2480	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Borghese - 828	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Paradiso Cres. - 848	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$

Note: The inhalation dose for formaldehyde is for the composite receptor as it is considered to be a carcinogen.

TABLE B.4-3: CALCULATED INHALATION DOSE FOR ALL RECEPTORS (mg/m^3) EXPOSED TO VOC IN YEAR 2035

	Benzene		1,3-Butadiene		Formaldehyde		Acetaldehyde		Acrolein	
Receptor Locations	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**	**No Build**	**TEPA**
Ball Field - 2479	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Bellwood Estates - 58	$2.6x10^{-3}$	$2.6x10^{-3}$	$1.9x10^{-4}$	$1.9x10^{-4}$	$4.5x10^{-3}$	$4.5x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Bellwood Estates - 403	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Grand Marais Roads - 74	$2.5x10^{-3}$	$2.5x10^{-3}$	$1.9x10^{-4}$	$1.8x10^{-4}$	$4.5x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Grand Marais Roads - 186	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.8x10^{-4}$	$1.8x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.6x10^{-4}$
Heritage Estates - 910	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 944	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Home for Aged LaSalle - 945	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 295	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Huron Estates - 410	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Kendleton Court - 781	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.6x10^{-4}$
Oliver Estates - 858	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Oliver Estates - 1997	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.8x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.6x10^{-4}$
Reddock - 423	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Residential - 2478	$2.3x10^{-3}$	$2.4x10^{-3}$	$1.6x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Southwood Lakes - 867	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1513	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Spring Garden - 1644	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
St. Clair College - 2480	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.3x10^{-3}$	$4.3x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Borghese - 828	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$
Villa Paradiso Cres. - 848	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.7x10^{-4}$	$1.7x10^{-4}$	$4.4x10^{-3}$	$4.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$1.5x10^{-4}$	$1.5x10^{-4}$

Note: The inhalation dose for formaldehyde is for the composite receptor as it is considered to be a carcinogen.

TABLE B.4-4: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.3x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.9x10^{-8}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$2.3x10^{-9}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.1x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.7x10^{-5}$	$6.7x10^{-5}$	$2.3x10^{-9}$	$5.1x10^{-5}$	$5.1x10^{-5}$	$1.3x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.9x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.8x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Reddock - 423	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-4: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Villa Paradiso Cres. - 848	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.2	9.2	$3.7x10^{-4}$	5.1	5.1	$4.6x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.2	9.2	$3.6x10^{-4}$	5.0	5.0	$4.6x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2

TABLE B.4-4: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.8x10^{-9}$	$8.2x10^{-4}$	$8.2x10^{-4}$	$1.2x10^{-9}$	$6.2x10^{-4}$	$6.2x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.7x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-4: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acrolein	$5.9x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.3x10^{-5}$	$7.3x10^{-5}$	$1.5x10^{-10}$	$5.5x10^{-5}$	$5.5x10^{-5}$	$8.1x10^{-11}$	$4.1x10^{-5}$	$4.1x10^{-5}$	$6.8x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.8x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.3x10^{-5}$	$7.3x10^{-5}$	$1.4x10^{-10}$	$5.5x10^{-5}$	$5.5x10^{-5}$	$8.0x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.7x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.8x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$

TABLE B.4-5: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.3x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$2.3x10^{-9}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.0x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.7x10^{-5}$	$6.7x10^{-5}$	$2.2x10^{-9}$	$5.0x10^{-5}$	$5.0x10^{-5}$	$1.2x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Reddock - 423	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-5: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Villa Paradiso Cres. - 848	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	8.9	9.0	$3.5x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2

TABLE B.4-5: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-5: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.2x10^{-5}$	$7.2x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.9x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.8x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-6: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.2x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.8x10^{-5}$	$6.8x10^{-5}$	$2.3x10^{-9}$	$5.1x10^{-5}$	$5.1x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.0x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.6x10^{-5}$	$6.6x10^{-5}$	$2.2x10^{-9}$	$5.0x10^{-5}$	$5.0x10^{-5}$	$1.2x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.2x10^{-5}$	$6.2x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.8x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Reddock - 423	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.2x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.8x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-6: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.2	9.2	$3.6x10^{-4}$	5.1	5.1	$4.6x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Ball Field - 2479	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$

TABLE B.4-6: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.7x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.7x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Bellwood Estates - 58	Acrolein	$5.8x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.3x10^{-5}$	$7.3x10^{-5}$	$1.5x10^{-10}$	$5.5x10^{-5}$	$5.5x10^{-5}$	$8.0x10^{-11}$	$4.1x10^{-5}$	$4.1x10^{-5}$	$6.8x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$

TABLE B.4-6: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.8x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.3x10^{-5}$	$7.3x10^{-5}$	$1.4x10^{-10}$	$5.5x10^{-5}$	$5.5x10^{-5}$	$8.0x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.7x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.8x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$

TABLE B.4-7: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.2x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.8x10^{-5}$	$6.8x10^{-5}$	$2.3x10^{-9}$	$5.1x10^{-5}$	$5.1x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.0x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.6x10^{-5}$	$6.6x10^{-5}$	$2.2x10^{-9}$	$5.0x10^{-5}$	$5.0x10^{-5}$	$1.2x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Reddock - 423	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-7: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Ball Field - 2479	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$

TABLE B.4-7: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Bellwood Estates - 58	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.8x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-7: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.8x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-8: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.2x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.8x10^{-5}$	$6.8x10^{-5}$	$2.3x10^{-9}$	$5.1x10^{-5}$	$5.1x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.0x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.7x10^{-5}$	$6.7x10^{-5}$	$2.3x10^{-9}$	$5.0x10^{-5}$	$5.0x10^{-5}$	$1.2x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.2x10^{-5}$	$6.2x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.8x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Reddock - 423	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.2x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.8x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-8: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.2	9.2	$3.7x10^{-4}$	5.1	5.1	$4.6x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.2	9.2	$3.6x10^{-4}$	5.1	5.1	$4.6x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Ball Field - 2479	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$

TABLE B.4-8: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.8x10^{-9}$	$8.2x10^{-4}$	$8.2x10^{-4}$	$1.2x10^{-9}$	$6.2x10^{-4}$	$6.2x10^{-4}$	$6.8x10^{-10}$	$4.6x10^{-4}$	$4.6x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.7x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.7x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Bellwood Estates - 58	Acrolein	$5.9x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.4x10^{-5}$	$7.4x10^{-5}$	$1.5x10^{-10}$	$5.6x10^{-5}$	$5.6x10^{-5}$	$8.1x10^{-11}$	$4.1x10^{-5}$	$4.1x10^{-5}$	$6.8x10^{-11}$	$3.3x10^{-5}$	$3.3x10^{-5}$

TABLE B.4-8: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.8x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.2x10^{-9}$	$7.3x10^{-5}$	$7.3x10^{-5}$	$1.5x10^{-10}$	$5.5x10^{-5}$	$5.5x10^{-5}$	$8.0x10^{-11}$	$4.1x10^{-5}$	$4.1x10^{-5}$	$6.8x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.8x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$

TABLE B.4-9: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Bellwood Estates - 58	Benzene	$9.3x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.8x10^{-5}$	$6.8x10^{-5}$	$2.3x10^{-9}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$1.3x10^{-9}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$1.1x10^{-9}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Bellwood Estates - 403	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Grand Marais Roads - 74	Benzene	$9.0x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.7x10^{-5}$	$6.7x10^{-5}$	$2.3x10^{-9}$	$5.0x10^{-5}$	$5.0x10^{-5}$	$1.2x10^{-9}$	$3.7x10^{-5}$	$3.7x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Grand Marais Roads - 186	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.8x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.9x10^{-5}$	$2.9x10^{-5}$
Heritage Estates - 910	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 295	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Huron Estates - 410	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Kendleton Court - 781	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 858	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Oliver Estates - 1997	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Reddock - 423	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Residential - 2478	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Southwood Lakes - 867	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1513	Benzene	$8.8x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.5x10^{-5}$	$6.5x10^{-5}$	$2.2x10^{-9}$	$4.9x10^{-5}$	$4.9x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Spring Garden - 1644	Benzene	$8.7x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.2x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
St. Clair College - 2480	Benzene	$8.5x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.7x10^{-5}$	$4.7x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$9.9x10^{-10}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Borghese - 828	Benzene	$8.6x10^{-9}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.7x10^{-8}$	$6.4x10^{-5}$	$6.4x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$8.6x10^{-9}$	$1.1x10^{-4}$	$1.1x10^{-4}$	$1.7x10^{-8}$	$6.3x10^{-5}$	$6.3x10^{-5}$	$2.1x10^{-9}$	$4.8x10^{-5}$	$4.8x10^{-5}$	$1.2x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-9}$	$2.8x10^{-5}$	$2.8x10^{-5}$

TABLE B.4-9: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 58	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Bellwood Estates - 403	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 74	Formaldehyde	$1.8x10^{-4}$	9.1	9.1	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.8	3.8	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Grand Marais Roads - 186	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Heritage Estates - 910	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 944	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Home for Aged LaSalle - 945	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 295	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Huron Estates - 410	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Kendleton Court - 781	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 858	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Oliver Estates - 1997	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	5.0	5.0	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Reddock - 423	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Residential - 2478	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Southwood Lakes - 867	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1513	Formaldehyde	$1.8x10^{-4}$	9.0	9.0	$3.6x10^{-4}$	4.9	4.9	$4.5x10^{-5}$	3.7	3.7	$2.5x10^{-5}$	2.8	2.8	$2.1x10^{-5}$	2.2	2.2
Spring Garden - 1644	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
St. Clair College - 2480	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Borghese - 828	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
Villa Paradiso Cres. - 848	Formaldehyde	$1.8x10^{-4}$	8.9	8.9	$3.5x10^{-4}$	4.9	4.9	$4.4x10^{-5}$	3.7	3.7	$2.4x10^{-5}$	2.7	2.7	$2.1x10^{-5}$	2.2	2.2
BALL FIELD - 2479	ACETALDEHYDE	$4.8X10^{-9}$	$1.4X10^{-3}$	$1.4X10^{-3}$	$9.5X10^{-9}$	$8.0X10^{-4}$	$8.0X10^{-4}$	$1.2X10^{-9}$	$6.0X10^{-4}$	$6.0X10^{-4}$	$6.6X10^{-10}$	$4.4X10^{-4}$	$4.4X10^{-4}$	$5.6X10^{-10}$	$3.5X10^{-4}$	$3.5X10^{-4}$

TABLE B.4-9: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 58	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.7x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Bellwood Estates - 403	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Grand Marais Roads - 74	Acetaldehyde	$4.9x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.1x10^{-4}$	$8.1x10^{-4}$	$1.2x10^{-9}$	$6.1x10^{-4}$	$6.1x10^{-4}$	$6.7x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.6x10^{-4}$	$3.6x10^{-4}$
Grand Marais Roads - 186	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Heritage Estates - 910	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 944	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Home for Aged LaSalle - 945	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 295	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Huron Estates - 410	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Kendleton Court - 781	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 858	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Oliver Estates - 1997	Acetaldehyde	$4.8x10^{-9}$	$1.5x10^{-3}$	$1.5x10^{-3}$	$9.6x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Reddock - 423	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Residential - 2478	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Southwood Lakes - 867	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1513	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.5x10^{-4}$	$4.5x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Spring Garden - 1644	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
St. Clair College - 2480	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$7.9x10^{-4}$	$7.9x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Borghese - 828	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.5x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Villa Paradiso Cres. - 848	Acetaldehyde	$4.8x10^{-9}$	$1.4x10^{-3}$	$1.4x10^{-3}$	$9.5x10^{-9}$	$8.0x10^{-4}$	$8.0x10^{-4}$	$1.2x10^{-9}$	$6.0x10^{-4}$	$6.0x10^{-4}$	$6.6x10^{-10}$	$4.4x10^{-4}$	$4.4x10^{-4}$	$5.6x10^{-10}$	$3.5x10^{-4}$	$3.5x10^{-4}$
Ball Field - 2479	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Bellwood Estates - 58	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.2x10^{-5}$	$7.2x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.9x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.2x10^{-5}$	$3.2x10^{-5}$

TABLE B.4-9: INGESTION DOSE (NON-CARCINOGEN) FOR ALL RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035 (CONT'D)

Dose Calculation		Infant			Toddler			Child			Teen			Adult		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Bellwood Estates - 403	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 74	Acrolein	$5.7x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.1x10^{-5}$	$7.1x10^{-5}$	$1.4x10^{-10}$	$5.4x10^{-5}$	$5.4x10^{-5}$	$7.8x10^{-11}$	$4.0x10^{-5}$	$4.0x10^{-5}$	$6.6x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Grand Marais Roads - 186	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Heritage Estates - 910	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 944	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Home for Aged LaSalle - 945	Acrolein	$5.5x10^{-10}$	$1.2x10^{-4}$	$1.2x10^{-4}$	$1.1x10^{-9}$	$6.8x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.5x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.3x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Huron Estates - 295	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Huron Estates - 410	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Kendleton Court - 781	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 858	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Oliver Estates - 1997	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Reddock - 423	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Residential - 2478	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Southwood Lakes - 867	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Spring Garden - 1513	Acrolein	$5.6x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$7.0x10^{-5}$	$7.0x10^{-5}$	$1.4x10^{-10}$	$5.3x10^{-5}$	$5.3x10^{-5}$	$7.7x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.5x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Spring Garden - 1644	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
St. Clair College - 2480	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.8x10^{-5}$	$3.8x10^{-5}$	$6.4x10^{-11}$	$3.0x10^{-5}$	$3.0x10^{-5}$
Villa Borghese - 828	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$
Villa Paradiso Cres. - 848	Acrolein	$5.5x10^{-10}$	$1.3x10^{-4}$	$1.3x10^{-4}$	$1.1x10^{-9}$	$6.9x10^{-5}$	$6.9x10^{-5}$	$1.4x10^{-10}$	$5.2x10^{-5}$	$5.2x10^{-5}$	$7.6x10^{-11}$	$3.9x10^{-5}$	$3.9x10^{-5}$	$6.4x10^{-11}$	$3.1x10^{-5}$	$3.1x10^{-5}$

TABLE B.4-10: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.1x10^{-10}$	$2.3x10^{-5}$	$2.3x10^{-5}$	$2.1x10^{-9}$	$3.6x10^{-5}$	$3.6x10^{-5}$
Bellwood Estates - 403	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.9x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.7x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Heritage Estates - 910	Benzene	$7.3x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Southwood Lakes - 867	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Borghese - 828	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.3x10^{-12}$	$9.7x10^{-7}$	$9.7x10^{-7}$	$8.4x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.1x10^{-12}$	$9.3x10^{-7}$	$9.3x10^{-7}$	$8.1x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$3.0x10^{-12}$	$8.9x10^{-7}$	$8.9x10^{-7}$	$7.7x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.7x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.9x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.4x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-10: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (mg/(kg d)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2015

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Oliver Estates - 858	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-11: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.1x10^{-10}$	$2.3x10^{-5}$	$2.3x10^{-5}$	$2.1x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Bellwood Estates - 403	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.8x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Heritage Estates - 910	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Southwood Lakes - 867	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Borghese - 828	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.2x10^{-12}$	$9.4x10^{-7}$	$9.4x10^{-7}$	$8.2x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.0x10^{-12}$	$9.1x10^{-7}$	$9.1x10^{-7}$	$7.9x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$2.9x10^{-12}$	$8.7x10^{-7}$	$8.7x10^{-7}$	$7.6x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.9x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.4x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-11: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2015

Oliver Estates - 858	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.9x10^{-12}$	$8.7x10^{-7}$	$8.7x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.4x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-12: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.0x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.1x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Bellwood Estates - 403	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.8x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Heritage Estates - 910	Benzene	$7.3x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.3x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Southwood Lakes - 867	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Villa Borghese - 828	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.2x10^{-12}$	$9.5x10^{-7}$	$9.5x10^{-7}$	$8.2x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.1x10^{-12}$	$9.2x10^{-7}$	$9.2x10^{-7}$	$8.0x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$2.9x10^{-12}$	$8.8x10^{-7}$	$8.8x10^{-7}$	$7.6x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.7x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-12: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2025

Oliver Estates - 858	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.7x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-13: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.0x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.1x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Bellwood Estates - 403	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.8x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Heritage Estates - 910	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Southwood Lakes - 867	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Villa Borghese - 828	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.1x10^{-12}$	$9.3x10^{-7}$	$9.3x10^{-7}$	$8.1x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.0x10^{-12}$	$9.0x10^{-7}$	$9.0x10^{-7}$	$7.8x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$2.9x10^{-12}$	$8.7x10^{-7}$	$8.7x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.9x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.4x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-13: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2025

Oliver Estates - 858	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.4x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.9x10^{-12}$	$8.7x10^{-7}$	$8.7x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.9x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.4x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-14: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.0x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.1x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Bellwood Estates - 403	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.8x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Heritage Estates - 910	Benzene	$7.3x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.3x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Southwood Lakes - 867	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Villa Borghese - 828	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.2x10^{-12}$	$9.6x10^{-7}$	$9.6x10^{-7}$	$8.3x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.1x10^{-12}$	$9.3x10^{-7}$	$9.3x10^{-7}$	$8.0x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$3.0x10^{-12}$	$8.9x10^{-7}$	$8.9x10^{-7}$	$7.7x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.7x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-14: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE FUTURE NO BUILD SCENARIO IN YEAR 2035

Oliver Estates - 858	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.7x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

TABLE B.4-15: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035

Dose Calculation		Adult			Composite		
		Ingestion (mg/(kg d))			Ingestion (mg/(kg d))		
Receptor	Chemical	Soil	Backyard Produce	Total	Soil	Backyard Produce	Total
Ball Field - 2479	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Bellwood Estates - 58	Benzene	$8.0x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.1x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Bellwood Estates - 403	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Grand Marais Roads - 74	Benzene	$7.8x10^{-10}$	$2.2x10^{-5}$	$2.2x10^{-5}$	$2.0x10^{-9}$	$3.5x10^{-5}$	$3.5x10^{-5}$
Grand Marais Roads - 186	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.4x10^{-5}$	$3.4x10^{-5}$
Heritage Estates - 910	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.2x10^{-5}$	$3.2x10^{-5}$
Home for Aged LaSalle - 944	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Home for Aged LaSalle - 945	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 295	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Huron Estates - 410	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Kendleton Court - 781	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 858	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Oliver Estates - 1997	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Reddock - 423	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Residential - 2478	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Southwood Lakes - 867	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1513	Benzene	$7.6x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$2.0x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Spring Garden - 1644	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
St. Clair College - 2480	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Borghese - 828	Benzene	$7.5x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Villa Paradiso Cres. - 848	Benzene	$7.4x10^{-10}$	$2.1x10^{-5}$	$2.1x10^{-5}$	$1.9x10^{-9}$	$3.3x10^{-5}$	$3.3x10^{-5}$
Ball Field - 2479	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Bellwood Estates - 58	1,3-Butadiene	$3.2x10^{-12}$	$9.5x10^{-7}$	$9.5x10^{-7}$	$8.2x10^{-12}$	$1.5x10^{-6}$	$1.5x10^{-6}$
Bellwood Estates - 403	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Grand Marais Roads - 74	1,3-Butadiene	$3.1x10^{-12}$	$9.1x10^{-7}$	$9.1x10^{-7}$	$7.9x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Grand Marais Roads - 186	1,3-Butadiene	$2.9x10^{-12}$	$8.8x10^{-7}$	$8.8x10^{-7}$	$7.6x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Heritage Estates - 910	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 944	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Home for Aged LaSalle - 945	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 295	1,3-Butadiene	$2.8x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Huron Estates - 410	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Kendleton Court - 781	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.4x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$

TABLE B.4-15: INGESTION DOSE (CARCINOGEN) FOR ADULT AND COMPOSITE RECEPTORS (MG/(KG D)) EXPOSED TO VOC FOR THE TEPA SCENARIO IN YEAR 2035

Oliver Estates - 858	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Oliver Estates - 1997	1,3-Butadiene	$2.9x10^{-12}$	$8.7x10^{-7}$	$8.7x10^{-7}$	$7.6x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Reddock - 423	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Residential - 2478	1,3-Butadiene	$2.8x10^{-12}$	$8.3x10^{-7}$	$8.3x10^{-7}$	$7.2x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Southwood Lakes - 867	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Spring Garden - 1513	1,3-Butadiene	$2.9x10^{-12}$	$8.6x10^{-7}$	$8.6x10^{-7}$	$7.5x10^{-12}$	$1.4x10^{-6}$	$1.4x10^{-6}$
Spring Garden - 1644	1,3-Butadiene	$2.9x10^{-12}$	$8.5x10^{-7}$	$8.5x10^{-7}$	$7.4x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
St. Clair College - 2480	1,3-Butadiene	$2.8x10^{-12}$	$8.2x10^{-7}$	$8.2x10^{-7}$	$7.1x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Borghese - 828	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$
Villa Paradiso Cres. - 848	1,3-Butadiene	$2.8x10^{-12}$	$8.4x10^{-7}$	$8.4x10^{-7}$	$7.3x10^{-12}$	$1.3x10^{-6}$	$1.3x10^{-6}$

B.5 Incremental Risks

TABLE B.5-1: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2015

	Incremental Lifetime Risk for Benzene - Year 2015			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Bellwood Estates - 58	1.3E-05	2.0E-05	1.3E-05	1.9E-05
Bellwood Estates - 403	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Grand Marais Roads - 74	1.3E-05	1.9E-05	1.3E-05	1.9E-05
Grand Marais Roads - 186	1.3E-05	1.9E-05	1.3E-05	1.8E-05
Heritage Estates - 910	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 944	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 945	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 295	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 410	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Kendleton Court - 781	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Oliver Estates - 858	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Oliver Estates - 1997	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Reddock - 423	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Residential - 2478	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Southwood Lakes - 867	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Spring Garden - 1513	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Spring Garden - 1644	1.2E-05	1.8E-05	1.2E-05	1.8E-05
St. Clair College - 2480	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Borghese - 828	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Paradiso Cres. - 848	1.2E-05	1.8E-05	1.2E-05	1.8E-05

TABLE B.5-2 : INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2015

Receptor Location	Incremental Lifetime Risk for 1,3-Butadiene - Year 2015			
	No Build		Parkway	
	Adult	Composite	Adult	Composite
Ball Field - 2479	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Bellwood Estates - 58	6.1E-06	8.6E-06	5.9E-06	8.3E-06
Bellwood Estates - 403	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Grand Marais Roads - 74	5.9E-06	8.3E-06	5.7E-06	8.0E-06
Grand Marais Roads - 186	5.6E-06	7.9E-06	5.5E-06	7.7E-06
Heritage Estates - 910	5.1E-06	7.2E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 944	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 945	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Huron Estates - 295	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Huron Estates - 410	5.3E-06	7.4E-06	5.2E-06	7.4E-06
Kendleton Court - 781	5.4E-06	7.5E-06	5.4E-06	7.5E-06
Oliver Estates - 858	5.2E-06	7.3E-06	5.4E-06	7.6E-06
Oliver Estates - 1997	5.3E-06	7.5E-06	5.5E-06	7.7E-06
Reddock - 423	5.2E-06	7.4E-06	5.3E-06	7.4E-06
Residential - 2478	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Southwood Lakes - 867	5.2E-06	7.3E-06	5.3E-06	7.5E-06
Spring Garden - 1513	5.3E-06	7.5E-06	5.4E-06	7.6E-06
Spring Garden - 1644	5.3E-06	7.4E-06	5.3E-06	7.5E-06
St. Clair College - 2480	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Villa Borghese - 828	5.3E-06	7.4E-06	5.3E-06	7.4E-06
Villa Paradiso Cres. - 848	5.2E-06	7.3E-06	5.3E-06	7.4E-06

TABLE B.5-3: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2015

	Incremental Lifetime Risk for Formaldehyde - Year 2015			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Bellwood Estates - 58	4.4E-05	5.9E-05	4.3E-05	5.8E-05
Bellwood Estates - 403	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Grand Marais Roads - 74	4.3E-05	5.8E-05	4.3E-05	5.7E-05
Grand Marais Roads - 186	4.3E-05	5.7E-05	4.3E-05	5.7E-05
Heritage Estates - 910	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Home for Aged LaSalle - 944	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Home for Aged LaSalle - 945	4.2E-05	5.7E-05	4.2E-05	5.6E-05
Huron Estates - 295	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Huron Estates - 410	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Kendleton Court - 781	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Oliver Estates - 858	4.2E-05	5.6E-05	4.3E-05	5.7E-05
Oliver Estates - 1997	4.2E-05	5.7E-05	4.3E-05	5.7E-05
Reddock - 423	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Residential - 2478	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Southwood Lakes - 867	4.2E-05	5.6E-05	4.2E-05	5.7E-05
Spring Garden - 1513	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Spring Garden - 1644	4.2E-05	5.7E-05	4.2E-05	5.7E-05
St. Clair College - 2480	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Villa Borghese - 828	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Villa Paradiso Cres. - 848	4.2E-05	5.7E-05	4.2E-05	5.7E-05

TABLE B.5-4: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2015

	Incremental Lifetime Risk for Acetaldehyde - Year 2015			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Bellwood Estates - 58	4.0E-06	5.3E-06	3.9E-06	5.3E-06
Bellwood Estates - 403	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Grand Marais Roads - 74	4.0E-06	5.3E-06	3.9E-06	5.2E-06
Grand Marais Roads - 186	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Heritage Estates - 910	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 944	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 945	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 295	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 410	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Kendleton Court - 781	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 858	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 1997	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Reddock - 423	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Residential - 2478	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Southwood Lakes - 867	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1513	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1644	3.9E-06	5.2E-06	3.9E-06	5.2E-06
St. Clair College - 2480	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Borghese - 828	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Paradiso Cres. - 848	3.9E-06	5.2E-06	3.9E-06	5.2E-06

TABLE B.5-5: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2025

	Incremental Lifetime Risk for Benzene - Year 2025			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Bellwood Estates - 58	1.3E-05	1.9E-05	1.3E-05	1.9E-05
Bellwood Estates - 403	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Grand Marais Roads - 74	1.3E-05	1.9E-05	1.3E-05	1.9E-05
Grand Marais Roads - 186	1.3E-05	1.8E-05	1.3E-05	1.8E-05
Heritage Estates - 910	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 944	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 945	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 295	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 410	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Kendleton Court - 781	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Oliver Estates - 858	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Oliver Estates - 1997	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Reddock - 423	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Residential - 2478	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Southwood Lakes - 867	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Spring Garden - 1513	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Spring Garden - 1644	1.2E-05	1.8E-05	1.2E-05	1.8E-05
St. Clair College - 2480	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Borghese - 828	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Paradiso Cres. - 848	1.2E-05	1.8E-05	1.2E-05	1.8E-05

TABLE B.5-6: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2025

	Incremental Lifetime Risk for 1,3-Butadiene - Year 2025			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	5.3E-06	7.4E-06	5.3E-06	7.5E-06
Bellwood Estates - 58	6.0E-06	8.4E-06	5.9E-06	8.3E-06
Bellwood Estates - 403	5.3E-06	7.4E-06	5.3E-06	7.5E-06
Grand Marais Roads - 74	5.8E-06	8.2E-06	5.7E-06	8.0E-06
Grand Marais Roads - 186	5.5E-06	7.8E-06	5.5E-06	7.7E-06
Heritage Estates - 910	5.1E-06	7.2E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 944	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 945	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Huron Estates - 295	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Huron Estates - 410	5.2E-06	7.4E-06	5.2E-06	7.4E-06
Kendleton Court - 781	5.3E-06	7.5E-06	5.4E-06	7.5E-06
Oliver Estates - 858	5.2E-06	7.3E-06	5.4E-06	7.6E-06
Oliver Estates - 1997	5.3E-06	7.4E-06	5.5E-06	7.7E-06
Reddock - 423	5.2E-06	7.3E-06	5.3E-06	7.4E-06
Residential - 2478	5.1E-06	7.2E-06	5.2E-06	7.3E-06
Southwood Lakes - 867	5.2E-06	7.3E-06	5.3E-06	7.5E-06
Spring Garden - 1513	5.3E-06	7.4E-06	5.4E-06	7.5E-06
Spring Garden - 1644	5.2E-06	7.4E-06	5.3E-06	7.5E-06
St. Clair College - 2480	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Villa Borghese - 828	5.2E-06	7.4E-06	5.3E-06	7.4E-06
Villa Paradiso Cres. - 848	5.2E-06	7.3E-06	5.3E-06	7.4E-06

TABLE B.5-7: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2025

	Incremental Lifetime Risk for Formaldehyde - Year 2025			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Bellwood Estates - 58	4.4E-05	5.9E-05	4.3E-05	5.8E-05
Bellwood Estates - 403	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Grand Marais Roads - 74	4.3E-05	5.8E-05	4.3E-05	5.7E-05
Grand Marais Roads - 186	4.3E-05	5.7E-05	4.3E-05	5.7E-05
Heritage Estates - 910	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Home for Aged LaSalle - 944	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Home for Aged LaSalle - 945	4.2E-05	5.7E-05	4.2E-05	5.6E-05
Huron Estates - 295	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Huron Estates - 410	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Kendleton Court - 781	4.2E-05	5.7E-05	4.3E-05	5.7E-05
Oliver Estates - 858	4.2E-05	5.6E-05	4.3E-05	5.7E-05
Oliver Estates - 1997	4.2E-05	5.7E-05	4.3E-05	5.7E-05
Reddock - 423	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Residential - 2478	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Southwood Lakes - 867	4.2E-05	5.6E-05	4.2E-05	5.7E-05
Spring Garden - 1513	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Spring Garden - 1644	4.2E-05	5.7E-05	4.2E-05	5.7E-05
St. Clair College - 2480	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Villa Borghese - 828	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Villa Paradiso Cres. - 848	4.2E-05	5.7E-05	4.2E-05	5.7E-05

TABLE B.5-8: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2025

	Incremental Lifetime Risk for Acetaldehyde - Year 2025			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Bellwood Estates - 58	4.0E-06	5.3E-06	3.9E-06	5.3E-06
Bellwood Estates - 403	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Grand Marais Roads - 74	3.9E-06	5.3E-06	3.9E-06	5.2E-06
Grand Marais Roads - 186	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Heritage Estates - 910	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 944	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 945	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 295	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 410	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Kendleton Court - 781	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 858	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 1997	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Reddock - 423	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Residential - 2478	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Southwood Lakes - 867	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1513	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1644	3.9E-06	5.2E-06	3.9E-06	5.2E-06
St. Clair College - 2480	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Borghese - 828	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Paradiso Cres. - 848	3.9E-06	5.2E-06	3.9E-06	5.2E-06

TABLE B.5-9: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2035

	Incremental Lifetime Risk for Benzene - Year 2035			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Bellwood Estates - 58	1.3E-05	1.9E-05	1.3E-05	1.9E-05
Bellwood Estates - 403	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Grand Marais Roads - 74	1.3E-05	1.9E-05	1.3E-05	1.9E-05
Grand Marais Roads - 186	1.3E-05	1.8E-05	1.3E-05	1.8E-05
Heritage Estates - 910	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 944	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Home for Aged LaSalle - 945	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 295	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Huron Estates - 410	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Kendleton Court - 781	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Oliver Estates - 858	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Oliver Estates - 1997	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Reddock - 423	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Residential - 2478	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Southwood Lakes - 867	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Spring Garden - 1513	1.2E-05	1.8E-05	1.3E-05	1.8E-05
Spring Garden - 1644	1.2E-05	1.8E-05	1.2E-05	1.8E-05
St. Clair College - 2480	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Borghese - 828	1.2E-05	1.8E-05	1.2E-05	1.8E-05
Villa Paradiso Cres. - 848	1.2E-05	1.8E-05	1.2E-05	1.8E-05

TABLE B.5-10: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2035

	Incremental Lifetime Risk for 1,3-Butadiene - Year 2035			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Bellwood Estates - 58	6.1E-06	8.5E-06	6.0E-06	8.4E-06
Bellwood Estates - 403	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Grand Marais Roads - 74	5.8E-06	8.2E-06	5.7E-06	8.1E-06
Grand Marais Roads - 186	5.6E-06	7.9E-06	5.5E-06	7.8E-06
Heritage Estates - 910	5.1E-06	7.2E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 944	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Home for Aged LaSalle - 945	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Huron Estates - 295	5.3E-06	7.5E-06	5.3E-06	7.5E-06
Huron Estates - 410	5.3E-06	7.4E-06	5.3E-06	7.4E-06
Kendleton Court - 781	5.3E-06	7.5E-06	5.4E-06	7.6E-06
Oliver Estates - 858	5.2E-06	7.3E-06	5.4E-06	7.6E-06
Oliver Estates - 1997	5.3E-06	7.4E-06	5.5E-06	7.7E-06
Reddock - 423	5.2E-06	7.4E-06	5.3E-06	7.5E-06
Residential - 2478	5.1E-06	7.2E-06	5.2E-06	7.3E-06
Southwood Lakes - 867	5.2E-06	7.3E-06	5.3E-06	7.5E-06
Spring Garden - 1513	5.3E-06	7.5E-06	5.4E-06	7.6E-06
Spring Garden - 1644	5.3E-06	7.4E-06	5.4E-06	7.5E-06
St. Clair College - 2480	5.2E-06	7.3E-06	5.2E-06	7.3E-06
Villa Borghese - 828	5.3E-06	7.4E-06	5.3E-06	7.5E-06
Villa Paradiso Cres. - 848	5.2E-06	7.3E-06	5.3E-06	7.4E-06

TABLE B.5-11: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2035

	Incremental Lifetime Risk for Formaldehyde - Year 2035			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Bellwood Estates - 58	4.4E-05	5.9E-05	4.3E-05	5.8E-05
Bellwood Estates - 403	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Grand Marais Roads - 74	4.4E-05	5.8E-05	4.3E-05	5.8E-05
Grand Marais Roads - 186	4.3E-05	5.8E-05	4.3E-05	5.7E-05
Heritage Estates - 910	4.2E-05	5.6E-05	4.2E-05	5.6E-05
Home for Aged LaSalle - 944	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Home for Aged LaSalle - 945	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Huron Estates - 295	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Huron Estates - 410	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Kendleton Court - 781	4.3E-05	5.7E-05	4.3E-05	5.7E-05
Oliver Estates - 858	4.2E-05	5.6E-05	4.3E-05	5.7E-05
Oliver Estates - 1997	4.2E-05	5.7E-05	4.3E-05	5.7E-05
Reddock - 423	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Residential - 2478	4.2E-05	5.6E-05	4.2E-05	5.7E-05
Southwood Lakes - 867	4.2E-05	5.6E-05	4.2E-05	5.7E-05
Spring Garden - 1513	4.2E-05	5.7E-05	4.3E-05	5.7E-05
Spring Garden - 1644	4.2E-05	5.7E-05	4.2E-05	5.7E-05
St. Clair College - 2480	4.2E-05	5.7E-05	4.2E-05	5.6E-05
Villa Borghese - 828	4.2E-05	5.7E-05	4.2E-05	5.7E-05
Villa Paradiso Cres. - 848	4.2E-05	5.7E-05	4.2E-05	5.7E-05

TABLE B.5-12: INCREMENTAL RISKS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2035

	Incremental Lifetime Risk for Acetaldehyde - Year 2035			
	No Build		Parkway	
Receptor Location	Adult	Composite	Adult	Composite
Ball Field - 2479	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Bellwood Estates - 58	4.0E-06	5.3E-06	3.9E-06	5.3E-06
Bellwood Estates - 403	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Grand Marais Roads - 74	4.0E-06	5.3E-06	3.9E-06	5.3E-06
Grand Marais Roads - 186	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Heritage Estates - 910	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 944	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Home for Aged LaSalle - 945	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 295	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Huron Estates - 410	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Kendleton Court - 781	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 858	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Oliver Estates - 1997	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Reddock - 423	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Residential - 2478	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Southwood Lakes - 867	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1513	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Spring Garden - 1644	3.9E-06	5.2E-06	3.9E-06	5.2E-06
St. Clair College - 2480	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Borghese - 828	3.9E-06	5.2E-06	3.9E-06	5.2E-06
Villa Paradiso Cres. - 848	3.9E-06	5.2E-06	3.9E-06	5.2E-06

B.6 Hazard Quotients

TABLE B.6-1: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2015

	Hazard Quotients for Benzene - Year 2015									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Bellwood Estates - 58	0.12	0.10	0.10	0.10	0.09	0.12	0.10	0.10	0.10	0.09
Bellwood Estates - 403	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Grand Marais Roads - 74	0.11	0.10	0.10	0.09	0.09	0.11	0.10	0.10	0.09	0.09
Grand Marais Roads - 186	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Heritage Estates - 910	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 944	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 945	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Huron Estates - 295	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Huron Estates - 410	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Kendleton Court - 781	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 858	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 1997	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Reddock - 423	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Residential - 2478	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Southwood Lakes - 867	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1513	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1644	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
St. Clair College - 2480	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Villa Borghese - 828	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Villa Paradiso Cres. - 848	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09

TABLE B.6-2: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2015

	Hazard Quotients for 1,3-Butadiene - Year 2015									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Bellwood Estates - 58	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
Bellwood Estates - 403	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grand Marais Roads - 74	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 186	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heritage Estates - 910	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 944	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 945	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Huron Estates - 295	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Huron Estates - 410	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Kendleton Court - 781	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 858	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 1997	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Reddock - 423	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Residential - 2478	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Southwood Lakes - 867	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Spring Garden - 1513	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Spring Garden - 1644	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
St. Clair College - 2480	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Borghese - 828	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Paradiso Cres. - 848	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

TABLE B.6-3: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2015

	Hazard Quotients for Formaldehyde - Year 2015									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	44.7	24.6	18.6	13.7	10.9	44.6	24.6	18.6	13.7	10.8
Bellwood Estates - 58	46.1	25.4	19.2	14.2	11.2	45.3	25.0	18.9	13.9	11.0
Bellwood Estates - 403	44.6	24.6	18.6	13.7	10.8	44.5	24.6	18.5	13.7	10.8
Grand Marais Roads - 74	45.8	25.2	19.1	14.1	11.1	45.2	24.9	18.8	13.9	11.0
Grand Marais Roads - 186	45.2	24.9	18.8	13.9	11.0	44.8	24.7	18.7	13.8	10.9
Heritage Estates - 910	44.3	24.4	18.5	13.6	10.8	44.4	24.5	18.5	13.6	10.8
Home for Aged LaSalle - 944	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.6	10.8
Home for Aged LaSalle - 945	44.5	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.7	10.8
Huron Estates - 295	44.7	24.6	18.6	13.7	10.9	44.6	24.6	18.6	13.7	10.9
Huron Estates - 410	44.5	24.6	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Kendleton Court - 781	44.7	24.7	18.6	13.7	10.9	44.8	24.7	18.6	13.8	10.9
Oliver Estates - 858	44.4	24.5	18.5	13.7	10.8	44.8	24.7	18.6	13.8	10.9
Oliver Estates - 1997	44.5	24.6	18.6	13.7	10.8	44.9	24.7	18.7	13.8	10.9
Reddock - 423	44.5	24.5	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Residential - 2478	44.4	24.5	18.5	13.6	10.8	44.4	24.5	18.5	13.6	10.8
Southwood Lakes - 867	44.4	24.5	18.5	13.7	10.8	44.5	24.6	18.5	13.7	10.8
Spring Garden - 1513	44.5	24.5	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.9
Spring Garden - 1644	44.5	24.5	18.5	13.7	10.8	44.5	24.6	18.5	13.7	10.8
St. Clair College - 2480	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.6	10.8
Villa Borghese - 828	44.5	24.6	18.6	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Villa Paradiso Cres. - 848	44.4	24.5	18.5	13.7	10.8	44.5	24.6	18.5	13.7	10.8

TABLE B.6-4: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2015

	Hazard Quotients for Acetaldehyde - Year 2015									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Bellwood Estates - 58	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Bellwood Estates - 403	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Grand Marais Roads - 74	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Grand Marais Roads - 186	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.26
Heritage Estates - 910	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 944	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 945	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Huron Estates - 295	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Huron Estates - 410	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Kendleton Court - 781	0.27	0.27	0.27	0.27	0.26	0.27	0.27	0.27	0.27	0.26
Oliver Estates - 858	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.26
Oliver Estates - 1997	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.27
Reddock - 423	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Residential - 2478	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Southwood Lakes - 867	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Spring Garden - 1513	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Spring Garden - 1644	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
St. Clair College - 2480	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Villa Borghese - 828	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Villa Paradiso Cres. - 848	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26

TABLE B.6-5: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACROLEIN (INCLUDING BACKGROUND) FOR YEAR 2015

	Hazard Quotients for Acrolein - Year 2015									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	8.0	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.7
Bellwood Estates - 58	8.4	8.2	8.2	8.2	8.2	8.2	8.0	8.0	8.0	8.0
Bellwood Estates - 403	7.9	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Grand Marais Roads - 74	8.3	8.1	8.1	8.1	8.1	8.1	8.0	8.0	7.9	7.9
Grand Marais Roads - 186	8.1	7.9	7.9	7.9	7.9	8.0	7.8	7.8	7.8	7.8
Heritage Estates - 910	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Home for Aged LaSalle - 944	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Home for Aged LaSalle - 945	7.9	7.7	7.7	7.7	7.7	7.8	7.7	7.7	7.6	7.6
Huron Estates - 295	7.9	7.8	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Huron Estates - 410	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Kendleton Court - 781	8.0	7.8	7.8	7.8	7.8	8.0	7.8	7.8	7.8	7.8
Oliver Estates - 858	7.9	7.7	7.7	7.7	7.7	8.0	7.8	7.8	7.8	7.8
Oliver Estates - 1997	7.9	7.8	7.8	7.7	7.7	8.0	7.8	7.8	7.8	7.8
Reddock - 423	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Residential - 2478	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Southwood Lakes - 867	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Spring Garden - 1513	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Spring Garden - 1644	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
St. Clair College - 2480	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Villa Borghese - 828	7.9	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Villa Paradiso Cres. - 848	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7

TABLE B.6-6: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2025

	Hazard Quotients for Benzene - Year 2025									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Bellwood Estates - 58	0.12	0.10	0.10	0.09	0.09	0.12	0.10	0.10	0.09	0.09
Bellwood Estates - 403	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Grand Marais Roads - 74	0.11	0.10	0.10	0.09	0.09	0.11	0.10	0.10	0.09	0.09
Grand Marais Roads - 186	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Heritage Estates - 910	0.11	0.09	0.09	0.09	0.08	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 944	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 945	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Huron Estates - 295	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Huron Estates - 410	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Kendleton Court - 781	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 858	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 1997	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Reddock - 423	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Residential - 2478	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Southwood Lakes - 867	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1513	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1644	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
St. Clair College - 2480	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Villa Borghese - 828	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Villa Paradiso Cres. - 848	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09

TABLE B.6-7: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2025

	Hazard Quotients for 1,3-Butadiene - Year 2025									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Bellwood Estates - 58	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
Bellwood Estates - 403	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grand Marais Roads - 74	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 186	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heritage Estates - 910	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 944	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 945	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Huron Estates - 295	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Huron Estates - 410	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Kendleton Court - 781	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 858	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 1997	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Reddock - 423	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Residential - 2478	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Southwood Lakes - 867	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Spring Garden - 1513	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Spring Garden - 1644	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
St. Clair College - 2480	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Borghese - 828	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Paradiso Cres. - 848	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

TABLE B.6-8: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2025

	Hazard Quotients for Formaldehyde - Year 2025									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	44.6	24.6	18.6	13.7	10.9	44.6	24.6	18.6	13.7	10.8
Bellwood Estates - 58	46.0	25.4	19.2	14.1	11.2	45.3	25.0	18.9	13.9	11.0
Bellwood Estates - 403	44.6	24.6	18.6	13.7	10.8	44.5	24.6	18.6	13.7	10.8
Grand Marais Roads - 74	45.7	25.2	19.0	14.1	11.1	45.2	24.9	18.8	13.9	11.0
Grand Marais Roads - 186	45.1	24.9	18.8	13.9	11.0	44.8	24.7	18.7	13.8	10.9
Heritage Estates - 910	44.3	24.4	18.5	13.6	10.8	44.4	24.5	18.5	13.6	10.8
Home for Aged LaSalle - 944	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.7	10.8
Home for Aged LaSalle - 945	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.7	10.8
Huron Estates - 295	44.6	24.6	18.6	13.7	10.9	44.7	24.6	18.6	13.7	10.9
Huron Estates - 410	44.5	24.5	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Kendleton Court - 781	44.7	24.6	18.6	13.7	10.9	44.8	24.7	18.7	13.8	10.9
Oliver Estates - 858	44.4	24.5	18.5	13.6	10.8	44.8	24.7	18.6	13.8	10.9
Oliver Estates - 1997	44.5	24.6	18.5	13.7	10.8	44.9	24.8	18.7	13.8	10.9
Reddock - 423	44.5	24.5	18.5	13.7	10.8	44.5	24.6	18.5	13.7	10.8
Residential - 2478	44.4	24.5	18.5	13.6	10.8	44.4	24.5	18.5	13.7	10.8
Southwood Lakes - 867	44.4	24.5	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Spring Garden - 1513	44.5	24.5	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.8
Spring Garden - 1644	44.5	24.5	18.5	13.7	10.8	44.5	24.6	18.6	13.7	10.8
St. Clair College - 2480	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.6	10.8
Villa Borghese - 828	44.5	24.6	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Villa Paradiso Cres. - 848	44.4	24.5	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.8

TABLE B.6-9: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2025

	Hazard Quotients for Acetaldehyde - Year 2025									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Bellwood Estates - 58	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Bellwood Estates - 403	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Grand Marais Roads - 74	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Grand Marais Roads - 186	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Heritage Estates - 910	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 944	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 945	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Huron Estates - 295	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Huron Estates - 410	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Kendleton Court - 781	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.26
Oliver Estates - 858	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.26
Oliver Estates - 1997	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.27
Reddock - 423	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Residential - 2478	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Southwood Lakes - 867	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Spring Garden - 1513	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Spring Garden - 1644	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
St. Clair College - 2480	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Villa Borghese - 828	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Villa Paradiso Cres. - 848	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26

TABLE B.6-10: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACROLEIN (INCLUDING BACKGROUND) FOR YEAR 2025

	Hazard Quotients for Acrolein - Year 2025									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	8.0	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.7
Bellwood Estates - 58	8.3	8.2	8.2	8.1	8.1	8.1	8.0	8.0	7.9	7.9
Bellwood Estates - 403	7.9	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Grand Marais Roads - 74	8.3	8.1	8.1	8.1	8.1	8.1	7.9	7.9	7.9	7.9
Grand Marais Roads - 186	8.1	7.9	7.9	7.9	7.9	8.0	7.8	7.8	7.8	7.8
Heritage Estates - 910	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Home for Aged LaSalle - 944	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Home for Aged LaSalle - 945	7.9	7.7	7.7	7.7	7.7	7.8	7.7	7.7	7.6	7.6
Huron Estates - 295	7.9	7.8	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Huron Estates - 410	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Kendleton Court - 781	8.0	7.8	7.8	7.8	7.8	8.0	7.8	7.8	7.8	7.8
Oliver Estates - 858	7.9	7.7	7.7	7.7	7.7	8.0	7.8	7.8	7.8	7.8
Oliver Estates - 1997	7.9	7.8	7.8	7.7	7.7	8.0	7.9	7.9	7.8	7.8
Reddock - 423	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Residential - 2478	7.8	7.7	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.6
Southwood Lakes - 867	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Spring Garden - 1513	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Spring Garden - 1644	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7
St. Clair College - 2480	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Villa Borghese - 828	7.9	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Villa Paradiso Cres. - 848	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7

TABLE B.6-11: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO BENZENE (INCLUDING BACKGROUND) FOR YEAR 2035

	Hazard Quotients for Benzene - Year 2035									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Bellwood Estates - 58	0.12	0.10	0.10	0.09	0.09	0.12	0.10	0.10	0.09	0.09
Bellwood Estates - 403	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Grand Marais Roads - 74	0.11	0.10	0.10	0.09	0.09	0.11	0.10	0.10	0.09	0.09
Grand Marais Roads - 186	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Heritage Estates - 910	0.11	0.09	0.09	0.09	0.08	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 944	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Home for Aged LaSalle - 945	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Huron Estates - 295	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Huron Estates - 410	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Kendleton Court - 781	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 858	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Oliver Estates - 1997	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Reddock - 423	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Residential - 2478	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Southwood Lakes - 867	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1513	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Spring Garden - 1644	0.11	0.10	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
St. Clair College - 2480	0.11	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
Villa Borghese - 828	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09
Villa Paradiso Cres. - 848	0.11	0.09	0.09	0.09	0.09	0.11	0.10	0.09	0.09	0.09

TABLE B.6-12: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO 1,3-BUTADIENE (INCLUDING BACKGROUND) FOR YEAR 2035

	Hazard Quotients for 1,3-Butadiene - Year 2035									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Bellwood Estates - 58	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Bellwood Estates - 403	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 74	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Grand Marais Roads - 186	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heritage Estates - 910	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 944	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Home for Aged LaSalle - 945	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Huron Estates - 295	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Huron Estates - 410	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Kendleton Court - 781	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 858	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Oliver Estates - 1997	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Reddock - 423	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Residential - 2478	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Southwood Lakes - 867	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Spring Garden - 1513	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
Spring Garden - 1644	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09
St. Clair College - 2480	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Borghese - 828	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Villa Paradiso Cres. - 848	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

TABLE B.6-13: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO FORMALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2035

	Hazard Quotients for Formaldehyde - Year 2035									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	44.7	24.7	18.6	13.8	10.9	44.7	24.6	18.6	13.7	10.9
Bellwood Estates - 58	46.2	25.5	19.2	14.2	11.2	45.5	25.1	19.0	14.0	11.1
Bellwood Estates - 403	44.6	24.6	18.6	13.7	10.9	44.6	24.6	18.6	13.7	10.9
Grand Marais Roads - 74	45.9	25.3	19.1	14.1	11.2	45.3	25.0	18.9	13.9	11.0
Grand Marais Roads - 186	45.3	25.0	18.9	13.9	11.0	44.9	24.8	18.7	13.8	10.9
Heritage Estates - 910	44.4	24.5	18.5	13.6	10.8	44.4	24.5	18.5	13.7	10.8
Home for Aged LaSalle - 944	44.4	24.5	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Home for Aged LaSalle - 945	44.5	24.5	18.5	13.7	10.8	44.5	24.5	18.5	13.7	10.8
Huron Estates - 295	44.7	24.7	18.6	13.7	10.9	44.7	24.7	18.6	13.8	10.9
Huron Estates - 410	44.5	24.6	18.6	13.7	10.8	44.5	24.6	18.6	13.7	10.8
Kendleton Court - 781	44.8	24.7	18.6	13.8	10.9	44.9	24.8	18.7	13.8	10.9
Oliver Estates - 858	44.4	24.5	18.5	13.7	10.8	44.9	24.7	18.7	13.8	10.9
Oliver Estates - 1997	44.6	24.6	18.6	13.7	10.8	45.0	24.8	18.7	13.8	10.9
Reddock - 423	44.5	24.6	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.8
Residential - 2478	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.7	10.8
Southwood Lakes - 867	44.4	24.5	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.8
Spring Garden - 1513	44.5	24.5	18.5	13.7	10.8	44.8	24.7	18.6	13.8	10.9
Spring Garden - 1644	44.5	24.5	18.5	13.7	10.8	44.7	24.6	18.6	13.7	10.9
St. Clair College - 2480	44.4	24.5	18.5	13.7	10.8	44.4	24.5	18.5	13.7	10.8
Villa Borghese - 828	44.6	24.6	18.6	13.7	10.8	44.5	24.6	18.5	13.7	10.8
Villa Paradiso Cres. - 848	44.5	24.5	18.5	13.7	10.8	44.6	24.6	18.6	13.7	10.9

TABLE B.6-14: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACETALDEHYDE (INCLUDING BACKGROUND) FOR YEAR 2035

	Hazard Quotients for Acetaldehyde - Year 2035									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	0.27	0.27	0.27	0.27	0.26	0.27	0.27	0.27	0.26	0.26
Bellwood Estates - 58	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Bellwood Estates - 403	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Grand Marais Roads - 74	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Grand Marais Roads - 186	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Heritage Estates - 910	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 944	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Home for Aged LaSalle - 945	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Huron Estates - 295	0.27	0.27	0.27	0.27	0.26	0.27	0.27	0.27	0.27	0.26
Huron Estates - 410	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Kendleton Court - 781	0.27	0.27	0.27	0.27	0.26	0.27	0.27	0.27	0.27	0.27
Oliver Estates - 858	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27
Oliver Estates - 1997	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.27
Reddock - 423	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Residential - 2478	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Southwood Lakes - 867	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Spring Garden - 1513	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.26
Spring Garden - 1644	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26
St. Clair College - 2480	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.26
Villa Borghese - 828	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.26	0.26
Villa Paradiso Cres. - 848	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27	0.26	0.26

TABLE B.6-15: HAZARD QUOTIENTS ASSOCIATED WITH EXPOSURE TO ACROLEIN (INCLUDING BACKGROUND) FOR YEAR 2035

	Hazard Quotients for Acrolein - Year 2035									
	No Build					Parkway				
Receptor Location	Infant	Toddler	Child	Teen	Adult	Infant	Toddler	Child	Teen	Adult
Ball Field - 2479	8.0	7.8	7.8	7.8	7.8	8.0	7.8	7.8	7.8	7.8
Bellwood Estates - 58	8.4	8.3	8.3	8.2	8.2	8.2	8.0	8.0	8.0	8.0
Bellwood Estates - 403	7.9	7.8	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Grand Marais Roads - 74	8.3	8.2	8.2	8.1	8.1	8.1	8.0	8.0	7.9	7.9
Grand Marais Roads - 186	8.1	8.0	8.0	7.9	7.9	8.0	7.9	7.9	7.8	7.8
Heritage Estates - 910	7.8	7.7	7.7	7.6	7.6	7.9	7.7	7.7	7.7	7.7
Home for Aged LaSalle - 944	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Home for Aged LaSalle - 945	7.9	7.7	7.7	7.7	7.7	7.8	7.7	7.7	7.6	7.6
Huron Estates - 295	8.0	7.8	7.8	7.8	7.8	8.0	7.8	7.8	7.8	7.8
Huron Estates - 410	7.9	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Kendleton Court - 781	8.0	7.8	7.8	7.8	7.8	8.0	7.9	7.9	7.8	7.8
Oliver Estates - 858	7.9	7.7	7.7	7.7	7.7	8.0	7.8	7.8	7.8	7.8
Oliver Estates - 1997	7.9	7.8	7.8	7.7	7.7	8.0	7.9	7.9	7.8	7.8
Reddock - 423	7.9	7.8	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Residential - 2478	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Southwood Lakes - 867	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Spring Garden - 1513	7.9	7.7	7.7	7.7	7.7	8.0	7.8	7.8	7.8	7.8
Spring Garden - 1644	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7
St. Clair College - 2480	7.9	7.7	7.7	7.7	7.7	7.9	7.7	7.7	7.7	7.7
Villa Borghese - 828	7.9	7.8	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.7
Villa Paradiso Cres. - 848	7.9	7.7	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.7

APPENDIX C

SAMPLE CALCULATION

Appendix C: Sample Calculations

This appendix includes a worked calculation for one chemical at the maximum concentration location. The equations in Appendix A form the basis for these calculations.

C.1 Sample Calculation – Ball Field (TEPA Scenario) for Year 2015

Following is a worked calculation for risks associated with benzene exposure for resident receptors at the ball field (Receptor No. 2479) location. The receptor characteristics and the fixed values and assumptions used in the calculations are summarized in Table C.1-1 and Table C.1-2 respectively.

TABLE C.1-1: RECEPTOR CHARACTERISTICS

Parameter	Symbol	Units	Infant	Toddler	Child	Teen	Adult	Source
Soil Ingestion Rate	$R_{ing\text{-}soil}$	(mg/d)	20	80	20	20	20	Richardson 1997
Vegetation Ingestion Rate	$R_{ing\text{-}veg}$	(g/d)	155	172	259	347	325	Richardson 1997
Body Weight	B_w	(kg)	8.2	16.5	32.9	59.7	70.7	Richardson 1997
Fraction of soil and air from site	F_{soil}	(-)	1	1	1	1	1	Assumed
Fraction of veg from site	F_{veg}	(-)	0.075	0.075	0.075	0.075	0.075	Assumed
Exposure Frequency	EF	(days/yr)	365.25	365.25	365.25	365.25	365.25	Assumed
Exposure Duration	ED	(yr)	0.5	3.5	7	8	56	Assumed
Averaging Time – Carcinogen	AT_C	(days)	27393.75	27393.75	27393.75	27393.75	27393.75	Assumed 75 years
Averaging Time – Non Carcinogen	AT_{NC}	(days)	182.625	1278.375	2556.75	2922	20454	Assumed same as ED

TABLE C.1-2: STARTING VALUES AND ASSUMPTIONS

	Parameter	Symbol	Value	Units	Source
Chemical Specific	Soil-water partition coefficient	Kd_s	0.37	(cm^3/g)	U.S. EPA (2001) Reg. 9
	Diffusivity in air	D_a	0.088	(cm^2/s)	Burton 1997
	Fraction of air in the vapour phase	F_v	1	(-)	Burton 1997
	Henry's Law constant	H	$5.43x10^{-3}$	($(atm\ m^3)/mol$)	Howard 1990
	Air-to-plant biotransfer factor	B_v	$1.90x10^{-3}$	(µg/g plant)/(µg/g air)	UDEQ (2000)
	Soil-to-plant biotransfer factor (leafy)	$B_{r\ leafy}$	2.3	(µg/g plant)/(µg/g soil)	UDEQ (2000)
	Soil-to-plant biotransfer factor (forage)	$B_{r\ forage}$	2.3		UDEQ (2000)
Location Specific	Concentration in air	C_a	2.387	($µg/m^3$)	Modelled
	Settling velocity	V_{settle}	3153.6	(m/yr)	Assumed
Toxicity Data	Slope Factor – oral	SF_o	$3.1x10^{-1}$	mg/(kg-day)	Health Canada 2004b
	Unit Risk – inhalation	UR_i	$3.3x10^{-3}$	$(mg/m^3)^{-1}$	Health Canada 2004b
	Reference Dose – oral	RfD_o	$4.0x10^{-3}$	mg/(kg-day)	IRIS, U.S. EPA 2006
	Reference Concentration - inhalation	RfC_i	$3.0x10^{-2}$	mg/m^3	IRIS, U.S. EPA 2006

Table C.1-3 shows the calculations used to obtain the inhalation dose and risk due to the carcinogenic properties of benzene. Table C.1-4 shows the calculation of the hazard quotient related to the non-characteristics of benzene and its impact through the inhalation pathway.

TABLE C.1-3: AIR CONCENTRATION AND INHALATION DOSE AND RISK CALCULATION

Equation #	Parameter	Equation	Units	Infant	Toddler	Child	Teen	Adult	Composite *
(A-1)	$Dose_{inhalation}$	$\frac{EF \times ED \times C_a}{AT_C} \times \frac{1}{1000}$	mg/m^3	$1.6x10^{-5}$	$1.1x10^{-4}$	$2.2x10^{-4}$	$2.5x10^{-4}$	$1.8x10^{-3}$	$2.4x10^{-3}$
(5-2)	$Risk_{inhalation}$	$Dose_{inhalation} \times UR_i$	(-)	n/a	n/a	n/a	n/a	$5.9x10^{-6}$	$7.9x10^{-6}$

Notes: n/a – not assessed
* - dose for composite receptor was calculated as the sum of dose for all life stages (infant, toddler, child, teen and adult)

TABLE C.1-4: INHALATION HAZARD QUOTIENT CALCULATION

Equation #	Parameter	Equation	Units	Infant	Toddler	Child	Teen	Adult
(A-1)	$Dose_{inhalation}$	$\frac{EF \times ED \times C_a}{AT_{NC}} \times \frac{1}{1000}$	mg/m^3	$2.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$	$2.4x10^{-3}$
(5-3)	$HQ_{inhalation}$	$\frac{Dose_{inhalation}}{RfC_i}$	(-)	$8.0x10^{-2}$	$8.0x10^{-2}$	$8.0x10^{-2}$	$8.0x10^{-2}$	$8.0x10^{-2}$

The soil concentrations at the maximum concentration location are obtained from the equations shown in Table C.1-5. Default values for the parameters are provided in the equations in Appendix A.

TABLE C.1-5 : SOIL CONCENTRATION CALCULATION

Eqn #	Parameter	Equation	Value	Units
(A-9)	ksv	$\left[\frac{3.1536\times10^{7}\times H}{Z\times Kd_s\times R\times T\times BD}\right]\times\left(\frac{D_a}{Z}\right)\times\left[1-\left(\frac{BD}{\rho_{soil}}\right)-\Theta_s\right]$	70919 (forage), 709 (tilled)	(1/yr)
(A-8)	ksr	$\frac{R}{\Theta_s\times z}\times\left(\frac{1}{1+\left(\frac{BD\times Kd_s}{\Theta_s}\right)}\right)$	1.66 (forage), 0.166 (tilled)	(1/yr)
	kse	Assumed to be zero	0	(1/yr)
	ksg	Assumed to be zero	0	(1/yr)
(A-7)	ksl	$\frac{q}{\Theta_s\times z\times\left[1+\left(\frac{BD\times Kd_s}{\Theta_s}\right)\right]}$	3.3 (forage), 0.33 (tilled)	(1/yr)
(A-6)	ks	$ksl+kse+ksr+ksg+ksv$	70924 (forage), 710 (tilled)	(1/yr)
(A-4)	Ds	$\frac{100}{z\times BD}\times\frac{V_{settle}\times C_a}{1000}$	251 (forage), 25.1 (tilled)	(mg/(kg yr))
(A-5)	Sc_{Tc}	$\frac{Ds\times\left(1-e^{(-ks\times Tc)}\right)}{ks}$	$3.5\text{x}10^{-3}$ (forage), $3.5\text{x}10^{-2}$ (tilled)	(mg/kg)
(A-3)	C_{soil}	$\frac{Ds}{ks\times(T_c-T_1)}\times\left[\left(T_c+\frac{e^{-ks\times T_c}}{ks}\right)-\left(T_1+\frac{e^{-ks\times T_1}}{ks}\right)\right]$	$3.5\text{x}10^{-3}$ (forage), $3.5\text{x}10^{-2}$ (tilled)	(mg/kg)

The vegetation concentration calculations are shown in Table C.1-6. Parameters needed for the equations are given in Table C.1-2 or provided in the equations in Appendix A.

TABLE C.1-6 : VEGETATION CONCENTRATION CALCULATION

Eqn #	Para-meter	Equation	Value	Units
(A-13)	C_v	$F_v \times \frac{C_a \times Bv \times VG_{ag}}{\rho_s}$	3.8×10^{-6}(veg), 3.8×10^{-6} (forage), 1.9×10^{-6} (silage)	(mg/kg DW)
(A-12)	C_d	$\frac{(1-F_v)\times Fw\times V_{settle}\times C_a\times Rp\times\left[\left(1-e^{(-kp\times Tp)}\right)\right]}{Yp\times kp\times 1000}$	0	(mg/kg DW)
(A-11)	C_r	$C_{soil}\times Br$	8.1×10^{-2} (veg), 8.1×10^{-3} (forage), 8.1×10^{-2} (silage)	(mg/kg DW)
(A-10)	C_{veg}	$C_r + C_d + C_v$	8.1×10^{-2} (veg), 8.1×10^{-3} (forage), 8.1×10^{-2} (silage)	(mg/kg DW)

The calculations shown in Table C.1-7 are for the ingestion dose and risk associated with the carcinogenic properties of benzene. Table C.1-8 gives the ingestion dose and hazard quotient calculations for the non-carcinogenic characteristics of benzene. For non-carcinogens, the ScTc is used for the Csoil.

TABLE C.1-7 : CARCINOGEN INGESTION DOSE AND RISK CALCULATION

Equation #	Parameter	Equation	Units	Infant	Toddler	Child	Teen	Adult	Composite *
(A-2)	$Dose_{soil}$	$\frac{R_{ing-soil} \times C_{soil} \times EF \times ED}{AT_C \times B_w} \times F_{soil} \times \frac{1}{1000000}$	(mg/(kg d))	5.8×10^{-11}	8.0×10^{-10}	2.0×10^{-10}	1.3×10^{-10}	7.5×10^{-10}	1.9×10^{-9}
(A-2)	$Dose_{veg}$	$\frac{R_{ing-veg} \times C_{veg} \times EF \times ED}{AT_C \times B_w} \times F_{veg} \times \frac{1}{1000}$	(mg/(kg d))	7.7×10^{-7}	3.0×10^{-6}	4.5×10^{-6}	3.8×10^{-6}	2.1×10^{-5}	3.3×10^{-5}
	$Dose_{ingestion}$	$Dose_{soil} + Dose_{veg}$	(mg/(kg d))	7.7×10^{-7}	3.0×10^{-6}	4.5×10^{-6}	3.8×10^{-6}	2.1×10^{-5}	3.3×10^{-5}
(5-2)	$Risk_{ingestion}$	$Dose_{ingestion}\left(\frac{mg}{kg\,d}\right) \times SF_o\left(\frac{mg}{kg\,d}\right)^{-1}$	(-)	n/a	n/a	n/a	n/a	6.5×10^{-6}	1.0×10^{-5}

Notes: n/a – not assessed

* - dose for composite receptor was calculated as the sum of dose for all life stages (infant, toddler, child, teen and adult)

TABLE C.1-8: NON-CARCINOGEN INGESTION DOSE AND HAZARD QUOTIENT CALCULATION

Equation #	Parameter	Equation	Units	Infant	Toddler	Child	Teen	Adult
(A-2)	$Dose_{soil}$	$\frac{R_{ing-soil} \times Sc_{Tc} \times EF \times ED}{AT_{NC} \times B_w} \times F_{soil} \times \frac{1}{1000000}$	(mg/(kg d))	8.6×10^{-9}	1.7×10^{-8}	2.2×10^{-9}	1.2×10^{-9}	1.0×10^{-9}
(A-2)	$Dose_{veg}$	$\frac{R_{ing-veg} \times C_{veg} \times EF \times ED}{AT_{NC} \times B_w} \times F_{veg} \times \frac{1}{1000}$	(mg/(kg d))	1.2×10^{-4}	6.4×10^{-5}	4.8×10^{-5}	3.5×10^{-5}	2.8×10^{-5}
	$Dose_{ingestion}$	$Dose_{soil} + Dose_{veg}$	(mg/(kg d))	1.2×10^{-4}	6.4×10^{-5}	4.8×10^{-5}	3.5×10^{-5}	2.8×10^{-5}
(5-3)	$HQ_{ingestion}$	$\frac{Dose_{ingestion}\left(\frac{mg}{kg\,d}\right)}{RfD_o\left(\frac{mg}{kg\,d}\right)}$	(-)	2.9×10^{-2}	1.6×10^{-2}	1.2×10^{-2}	8.9×10^{-3}	7.0×10^{-3}