AIR QUALITY AND LIFE IN CALEDON APRIL 14/2022 [redacted]

INTRODUCTION:

This presentation is to address issues regarding Quality of Air in Caledon. This is a topic that has concerned me for close to 20 years, beginning with my volunteer work with and through BRAG, Bolton Residents' Association Group in the early 2000s. In raising this matter with you, I do so as a resident of Caledon since 1975. Air Quality is so important because it affects everyone's health. Today, I will focus on the effects related to large trucks fueled by diesel engines and the activities of aggregate production here in Caledon. These comments reflect my opinions as resident of Caledon of over 45 years.

REQUEST FOR SUPPORT FROM TOWN OF CALEDON:

In my opinion, we need science-based data which will measure the air quality here in Caledon in these areas:

Albion Townline Road in East Bolton at Queensgate & at King E.

Intersection of King St. and Queen St. in Village of Bolton

Highway 50 and Mayfield Intersection in South Bolton

Mayfield Road and Coleraine in South Bolton

Coleraine and Healey Road in South Bolton

Coleraine and King Road W. in North Bolton

Patterson Sideroad and Highway 50 in Palgrave

Mayfield Road and Highway 10/410 Extension-Valleywood Area

Highway 10 in Caledon Village

WHY THESE AREAS?

Over the last 20 years, Bolton has grown significantly. So has the traffic in and around the Village of Bolton. In particular, in South Bolton we have huge warehouses such as Canadian Tire approved in spite of community opposition in June, 2013; we also have Amazon approved in July, 2019 with no public input. Both of these establishments are facilities of over 1,000,000 square ft. These and other warehouses bring to and from Bolton, weekly, thousands of large trucks, many powered by diesel engines. Diesel engines emit cancer-producing emissions. The CTC facility brings between 700 to 800 trucks daily, 7 days a week, 52 weeks a year (Info from CTC consultant, August, 2012). That is at least 4,000 trucks a week. These warehouses are on Healey Road in South Bolton. The community of Valleyfield is affected by many trucks going north and south on Highway 10 and the 410 Extension. Most of these are trucks going to and from aggregate pits near/in Caledon Village and other locations in North Caledon. When these trucks brake or accelerate, harmful dust can be created from brakes and from the engines, dangerous emissions. Some people in Caledon Village and area, are very concerned about the ongoing production from aggregate pits in the area. In addition to the possible effects on surface waters/streams and water aquifers underground, such pits produce toxic clouds of dust that contain silica and other harmful by-products. Silica dust can cause lung cancers plus generally can affect

respiratory systems. The last air quality tests done in the Bolton area were undertaken by the Ministry of the Environment in 2010. At the time, the results of those tests were highly questionable due to the fact that test stations were not installed in high traffic areas and the timing of the tests were odd as for example during periods when the volume of traffic was low. Besides, the Ministry of the Environment said that our air quality was sufficiently acceptable just like Brampton and Newmarket. Such conclusions in my opinion were false since at the time Bolton was not the same size as Brampton nor Newmarket. In addition, no guidance from community members was sought or encouraged as to locations to assess and the timing. In January of 2020, the Region of Peel drafted a proposed motion to assess external air quality but since then, there has been no apparent action. Councillor Groves may wish to comment as inquiries to her have recently been made.

SCIENCE-BASED EVIDENCE OF HARMFUL/DEADLY SUBSTANCES AND EFFECTS:

The World Health Organization issued a press release on June 12th, 2012, titled "Diesel Engine Exhaust Carcinogenic". A copy of that press release was provided to all members of Council in May, 2012 at the Caledon Community Complex. Richard Thompson received a copy. So did Nick DeBoer along with all members of that Council. Copies are being provided again today. In addition, a newsletter from the Workers' Health and Safety Centre of 2013, "Diesel Exhaust: It takes your breath away" states, 'Exposure can ...lead to chronic health effects including respiratory illnesses...reduced lung function, chronic bronchitis, obstructive pulmonary disease..and asthma.' Reduced lung function can normally lead to negative effects on the heart and circulatory system. That document was provided to all Council members at that time. Copies are being provided again. I am also providing documents here noting important information regarding aggregate pits and related health limits and effects.

In addition to these EXTERNAL EFFECTS, we must also need to comment on COVID-19 and INTERNAL EFFECTS. The key with respect to indoor air quality is the effectiveness of HVAC systems. Many older buildings of the Town and the Region have older HVAC systems that perhaps have not been properly maintained over the years as for example with respect to filters. This should not be a problem with newer facilities. At present there is a lot of speculation about the possibility of COVID 19 being communicated through droplets suspended in the air which can affect respiratory systems. The Region's Senior Medical officer of Health, Dr. LOH can possibly comment on this. Prior to Christmas, 2020 and 2021, this was a concern with the huge warehouses in north Brampton. I would request that Dr. Loh and others inquire as to whether the workplaces likely most affected have workplace inspections undertaken by members of the workplace joint occupational health and safety representatives who, under the Occupational Health and Safety Act are required to make monthly inspections. Workplace policies on health and safety are required under the Act to be posted in a public place for all entering or working there.

WHAT I EXPECT FROM THE TOWN OF CALEDON COUNCIL:

As elected representatives of your communities, I expect you to do your job in an accountable fashion as follows:

1/Support the need for EXTERNAL AIR QUALITY tests as suggested here;

2/To communicate with the Ontario Ministry of the Environment & request that such tests be undertaken immediately; &

Provide to the Palgrave community specific details as to why the Town of Caledon allowed operation of the Brock Aggregate Pit as well as Lions Demolitions because the community is concerned that their work endangers our Quality of Life;

3/Communicate with Peel's Medical Officer of Health and request a report on INTERNAL AIR QUALITY questions on droplets as possible carriers of the COVID virus;

4/Encourage the public's participation in such tests. There are qualified community members who want to provide needed advice and guidance;

5/Report to the public via a Town-based newsletter the steps being taken, especially the specific action plans developed;

6/Post on the website for the Town of Caledon this presentation and any reports prepared by the Town of Caledon in response;

7/Insist that the OPP enforce the requirements of the Highway Traffic Act and request the MTO to strictly enforce regulations covering legal truck loads;

8/Respond to this presentation in such a manner as to make Public Safety and protection of our natural environment a greater priority for the Town of Caledon.

Thank you for this opportunity and I will try to answer to the best of my ability any questions that you may have. Apologies to all for any typos herein.

Joe Grogan/ Cert. in Business, U of T, 1967; Graduate of Ontario College of Ed., 1969; B.A.,, York University,1972; M.Ed., Adult Ed., OISE/U of T., 1981, Cert. in Labour Studies, George Brown College, 1989; Resident of Bolton, 1975 to present>>268 Bell Air Drive, Bolton, Ontario, L7E2A1/905-857-2168

[redacted]

A BRIEF INCOMPLETE RECORD OF AN AGGREGATE PROPOSAL-BLUELAND FARMS

The following summary briefly outlines some correspondence between PitSense and Governmental bodies on matters related to a proposed pit project in Caledon, BLUELAND FARMS. People in the community affected had many specific questions among which were questions related to dust (microscopic particulate matter) associated with aggregate operations. Many of the concerns are related to general Air Quality since aggregate production creates toxic emissions and the aggregates are transported by huge trucks.

PitSense wrote to the Region of Peel, seeking some guidance, in a letter from Robert Shapton, Communications Coordinator, dated, FEBRUARY 25/2012 to Janette Smith, Commissioner of Health Services. In a letter dated MARCH 9, 2012, Mr. Kennedy Self, Manager of Development for the Region of Peel responded as follows:

"Particulate size (in dust) determines how far it can reach within the lungs when inhaled." His letter also indicates this about particulate: It, "irritates eyes, throat, nose and can cause coughing, breathing difficulties, reduced lung functioning, inflammation;.....long term exposure increased risk of early death, cardiovascular and respiratory effects, lung cancer and overall reduced life expectancy."

In trying to clarify responsible government agencies involved in matters related to aggregate production, the same letter states: "Dust as it relates to aggregate application is an issue that the Town addresses and the ultimate authority is the Ministry of the Environment."

Given the fact that aggregates are transported using trucks, PitSense was/is also concerned about truck emissions. In the same letter, Mr. Self states, "There is some evidence that DE (Diesel Exhaust) can affect immune function and worsen allergies. Most regulatory agencies around the world classify diesel as a probable human carcinogen by inhalation exposure.....".

Later in an additional letter to PitSense, dated Dec. 3, 2012, Debbie Pella Keen of the Ministry of Natural Resources wrote this: "The responsibility for air quality legislation in Ontario is the Ministry of the Environment. Given the cross mandates when dealing with aggregates and matters related to air quality (eg. dust) the MNR and MOE work together to ensure that aggregate operations are carried out in a manner that is protective of human health and the environment."

This record of correspondence and the inquiries related to the Blueland Farms Application commenced in 2011/2012. In the meantime, now the company James Dick, which has an operating pit adjacent to Blueland property, has proposed to coordinate operations with Blueland by diverting the aggregate haulage from the Blueland property, westerly across the Dick pit on Kennedy Road, across the Dick pit on Hwy.10, and from there north, south, east and west through Caledon Village, further worsening air quality in the area.

All these concerns were raised by PitSense back in 2011 and 2012. However, the necessary rezoning for the proposed pit has not been approved and the air quality monitoring questions remain unaddressed.

JCG-APRIL 18,2022

World Health Organization

PRESS RELEASE
N° 213

12 June 2012

IARC: DIESEL ENGINE EXHAUST CARCINOGENIC

Lyon, France, June 12, 2012 – After a week-long meeting of international experts, the International Agency for Research on Cancer (IARC), which is part of the World Health Organization (WHO), today classified diesel engine exhaust as carcinogenic to humans (Group 1), based on sufficient evidence that exposure is associated with an increased risk for lung cancer.

Background
In 1988, IARC classified diesel exhaust as *probably carcinogenic to humans (Group 2A)*. An Advisory Group which reviews and recommends future priorities for the IARC Monographs Program had recommended diesel exhaust as a high priority for re-evaluation since 1998.

There has been mounting concern about the cancer-causing potential of diesel exhaust, particularly based on findings in epidemiological studies of workers exposed in various settings. This was re-emphasized by the publication in March 2012 of the results of a large US National Cancer Institute/National Institute for Occupational Safety and Health study of occupational exposure to such emissions in underground miners, which showed an increased risk of death from lung cancer in exposed workers (1).

Evaluation
The scientific evidence was reviewed thoroughly by the Working Group and overall it was concluded that there was *sufficient evidence* in humans for the carcinogenicity of diesel exhaust. The Working Group found that diesel exhaust is a cause of lung cancer (*sufficient evidence*) and also noted a positive association (*limited evidence*) with an increased risk of bladder cancer (Group 1).

The Working Group concluded that gasoline exhaust was possibly carcinogenic to humans (Group 2B), a finding unchanged from the previous evaluation in 1989.

Public health
Large populations are exposed to diesel exhaust in everyday life, whether through their occupation or through the ambient air. People are exposed not only to motor vehicle exhausts but also to exhausts from other diesel engines, including from other modes of transport (e.g. diesel trains and ships) and from power generators.

Given the Working Group's rigorous, independent assessment of the science, governments and other decision-makers have a valuable evidence-base on which to consider environmental standards for diesel exhaust emissions and to continue to work with the engine and fuel manufacturers towards those goals.

Increasing environmental concerns over the past two decades have resulted in regulatory action in North America, Europe and elsewhere with successively tighter emission standards for both diesel and gasoline engines. There is a strong interplay between standards and technology – standards drive technology and new technology enables more stringent standards. For diesel engines, this required changes in the fuel such as marked decreases in sulfur content, changes in engine design to burn diesel fuel more efficiently and reductions in emissions through exhaust control technology.

However, while the amount of particulates and chemicals are reduced with these changes, it is not yet clear how the quantitative and qualitative changes may translate into altered health effects; research into

See over

IARC: Diesel engines exhaust carcinogenic

this question is needed. In addition, existing fuels and vehicles without these modifications will take many years to be replaced, particularly in less developed countries, where regulatory measures are currently also less stringent. It is notable that many parts of the developing world lack regulatory standards, and data on the occurrence and impact of diesel exhaust are limited.

Conclusions

Dr Christopher Portier, Chairman of the IARC working Group, stated that "The scientific evidence was compelling and the Working Group's conclusion was unanimous: diesel engine exhaust causes lung cancer in humans." Dr Portier continued: "Given the additional health impacts from diesel particulates, exposure to this mixture of chemicals should be reduced worldwide."(2)

Dr Kurt Straif, Head of the IARC Monographs Program, indicated that "The main studies that led to this conclusion were in highly exposed workers. However, we have learned from other carcinogens, such as radon, that initial studies showing a risk in heavily exposed occupational groups were followed by positive findings for the general population. Therefore actions to reduce exposures should encompass workers and the general population."

Dr Christopher Wild, Director, IARC, said that "while IARC's remit is to establish the evidence-base for regulatory decisions at national and international level, today's conclusion sends a strong signal that public health action is warranted. This emphasis is needed globally, including among the more vulnerable populations in developing countries where new technology and protective measures may otherwise take many years to be adopted."

Summary evaluation

The summary of the evaluation will appear in The Lancet Oncology as an online publication ahead of print on June 15, 2012.

(1) JNCI J Natl Cancer Inst (2012) doi:10.1093/jnci/djs034
http://jnci.oxfordjournals.org/content/early/2012/03/05/jnci.djs034.abstract; and
JNCI J Natl Cancer Inst (2012) doi: 10.1093/jnci/djs035
http://jnci.oxfordjournals.org/content/early/2012/03/05/jnci.djs035.abstract

(2) Dr Portier is Director of the National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry at the Centers for Disease Control and Prevention (USA).

For more information, please contact
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Link to the **audio file** posted shortly after the media briefing:
http://terrance.who.int/mediacentre/audio/press_briefings/

About IARC

The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships.

Version 2.0

Diesel Exhaust:

it takes your breath away

Considered a significant threat to worker and public health, diesel exhaust can literally *take your breath away.* Coughing, wheezing and shortness of breath are just a few of the symptoms those exposed might experience.

Though, exposure can also lead to a range of chronic illnesses including cancer. In fact, the International Agency for Research on Cancer (IARC) has reclassified diesel engine exhaust from a probable human carcinogen (Group 2A) to a definite human carcinogen (Group 1)—a classification that includes asbestos, silica and tobacco smoke.

What is diesel exhaust?

Diesel powered trucks, buses, locomotives, ships and other heavy equipment are all major sources of diesel exhaust. Other sources can include stationary diesel engines such as generators as well as gas and oil production facilities and electrical utilities.

Diesel exhaust is a complex mixture of hundreds of different compounds found as particulates or gases. The specific chemical composition and particulate sizes of diesel exhaust differs depending on quality of fuel, engine type, fuel pump setting, workload demand, engine temperature and maintenance and emission control system.

Particulates:
The primary components of diesel particulate matter include elemental carbon, organic compounds including polycyclic aromatic hydrocarbons (PAHs), sulfate, nitrate and many other trace metals. Most diesel exhaust particles are tiny enough to be inhaled deep into the lungs where they pose significant risk to health.

Gases:
Gaseous compounds can include carbon monoxide, carbon dioxide, sulfur and nitrogen oxides, aldehydes (formaldehyde, acetaldehyde, acrolein), benzene and polyaromatic hydrocarbons (PAHs). Similar to diesel particulates, gases can be inhaled deep into the lungs.

Who is at risk?

According to CAREX Canada, 800,000 Canadians are exposed to diesel exhaust as a result of work. Here in Ontario, more than 275,000 workers are exposed including truckers, bus drivers, heavy equipment and farm tractor operators, miners, landscaping labourers and maintenance workers.

As mentioned, diesel exhaust is also a significant threat to public health. With vehicles being a major source of diesel exhaust, anyone living, playing, working and going to school near busy highways and roads is at risk.

For those already exposed at work, other environmental exposures add to the risk of developing both acute and chronic health impacts.

Children are also especially vulnerable to air polluted with diesel exhaust. They generally spend a lot of time outside actively playing and inhale proportionally more air than adults. Many are transported to school in diesel-fueled school buses adding to their exposure burden (and that of the bus drivers). With their organs and body systems still developing, they are particularly sensitive to diesel exhaust and other toxins. This can affect both their short and long term health.

The elderly and those already suffering with compromised immune systems and other pre-existing medical conditions are also vulnerable.

What are the health effects?

According to CAREX Canada and many other experts there is no safe level of exposure for diesel exhaust.

Those exposed can suffer acute health effects including irritation of the eyes, nose, throat and lungs. Coughing, phlegm production, wheezing, chest tightness, nausea and headache are just a few of the symptoms they may experience.

Exposure can also lead to chronic health effects including respiratory illnesses. Examples include reduced lung function, chronic bronchitis, respiratory infection, chronic obstructive pulmonary disease (COPD), emphysema and asthma.

Diesel exhaust has also been found to aggravate existing respiratory and cardiovascular (heart and blood circulation) diseases. For asthma, even short periods of exposure can increase the severity and duration of attacks. This is of particular concern with more than three million Canadians suffering with this illness.

There is evidence diesel exhaust can damage the immune system. And as discussed IARC has determined there is sufficient evidence linking exposure with both an increased risk for lung and bladder cancer.

Researchers and public health authorities report thousands of Canadians will suffer premature death annually because of exposure to diesel exhaust.

Are there regulations governing exposure?

Ontario and other jurisdictions in Canada have no legal occupational exposure limits for whole diesel exhaust or diesel particulate matter.

Though, Ontario has established allowable exposure limits for many of the gaseous compounds in diesel exhaust including carbon monoxide, carbon dioxide, benzene, and PAHs. These limits are outlined in the regulation respecting the Control of Exposure to Chemical and Biological Agents (O. Reg. 833).

Ontario Regulation 854 governing mines and mining plants mandate some requirements relating to the control of diesel exhaust. For instance, Section 183 of the *Mines and Mining Plants Regulation* outlines requirements for air flow in order to reduce the concentrations of toxic substances in diesel exhaust emissions. Regulations governing construction projects (O. Reg. 213), industrial establishments (O. Reg. 851) and health care and residential facilities (O. Reg. 67) rely on general requirements for vehicle emissions and/or ventilation as it relates to vehicle emissions.

Many communities have or plan to undertake anti-idling public awareness campaigns as they seek to reduce harmful vehicle emissions, including diesel exhaust. Others have taken efforts even further by introducing idling control by-laws.

Toronto, for instance, passed the first stand-alone idling by-law in 1996. This by-law now prohibits idling for more than one minute in any 60-minute period. More than 20 Ontario communities now have some form of idling control by-law.

Regulations under the *Canadian Environmental Protection Act* are also in place aimed at limiting harmful emissions relating to diesel fuel and diesel engines. These include:

- *Sulphur in Diesel Fuel Regulations*
- *On-Road Vehicle and Engine Emission Regulations*
- *Off-Road Small Spark-Ignition Engine Emission Regulations*
- *Off-Road Compression-Ignition Engine Emission Regulations*
- *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations.*

Workers Health & Safety Centre

Information Bulletins for health, safety and environmental representatives

RESOURCE LINES

Ontario's Environmental Protection Act prohibits the alteration or removal of emission control equipment. The *Act* also prohibits excessive visible exhaust emissions. All vehicles on provincial highways are subject to this *Act* whether they are registered in Ontario or not.

Ontario's *Occupational Health & Safety Act* also imposes a duty on Ontario employers to take every precaution reasonable in the circumstances for the protection of a worker. The following are just some examples of reasonable precautions workplaces can implement to eliminate and/or reduce exposure.

How can exposure be eliminated or controlled?

Cleaner Burning Diesel Engines

The Canadian government regulates emissions for most diesel engines including those in heavy-duty trucks, buses, marine vessels along with "off-road" engines. In part to meet these standards, diesel engine technology continues to improve leading to new low-emission engines that burn fuel more efficiently. Emission control systems are thus also making important advances.

When purchasing new vehicles, generators or other diesel-fueled equipment many workplaces are ensuring they are equipped with the most advanced emission control system(s). Meantime, some workplaces have purchased or are exploring the option of buses, street sweepers, garbage trucks and many other heavy and light duty vehicles powered by cleaner fuels.

Cleaner Fuel and Power Sources

Canada's *Sulphur in Diesel Fuel Regulations* mandates the use of cleaner burning diesel fuel in on- and off-road vehicles, vessels, locomotives and both large and small stationary diesel engines. The point of this regulation is to ensure the effective operation of advanced emission control technologies installed on vehicles and engines (post 2007 models) which will lead to lower harmful emissions and improved air quality for all Canadians. Much of this Regulation is now in force including the use of ultra-low-sulphur diesel (ULSD) in on-road vehicles and off-road engines.

Many other options exist to replace or limit the use of diesel. This includes the replacement of older diesel engine buses and other heavy and light duty trucks and equipment with those powered by compressed natural gas, diesel-electric hybrid engines and engines powered with biodiesel and reformulated diesel. The City of Ottawa uses more than 150 diesel-electric hybrid buses. Diesel-electric hybrid engines use less diesel fuel as they rely on electric power generated by the braking system.

Blending biodiesel fuels with ULSD fuel can lead to less particulate emission, carbon monoxide and hydrocarbons (though, it can increase the production of nitrogen oxides). The City of Brampton was the first municipality in Canada to use biodiesel fuel in its fleet of vehicles and equipment in 2003-04. According to the City, cost savings can be as high as 25 per cent per litre.

Compressed natural gas (CNG) powered heavy-duty vehicles and buses can be purchased new or older technology diesel engines can be converted to run on CNG. The City of Hamilton has more than 90 CNG buses in its fleet.

Hydrogen fuel cell technology is also a clean(er) option. British Columbia Transit in Vancouver has acquired and is operating the 20 hydrogen fuel cell buses (and fueling systems) used in Whistler during the 2010 Olympic and Paralympic Games.

The use of diesel-powered trains is also a significant source of harmful emissions. Since 2001, Calgary Transit's light rail line has been powered entirely by electricity generated from 12 wind turbines. Passenger rail service is set to expand in Toronto soon including a new Pearson Airport rail service. The agency overseeing this expansion is proposing the use of diesel powered trains. Citizens, community coalitions and others are pressing for the cleaner option—an electric train system.

Cleaner energy sources can also be tapped to replace stationary diesel engines, including generators. Solar, wind and hydroelectric power are a few examples. Hybrid battery banks are another option. They are used to capture and store excess energy produced by diesel generators. Depending on the energy needs, this excess can then be used without the operation of a diesel generator.

Retrofit Technology

Diesel engines are designed to last. For this reason many older engines remain in use on our roads, in our workplaces and in our communities. The following are examples of available retrofits aimed at reducing emissions from these older engines into the environment and/or directly into the vehicle, cab or direct vicinity of workers.

- diesel oxidation catalyst
- diesel particulate filters
- closed crankcase filters (helps prevent emissions from entering the vehicle)
- diesel multi-stage filters
- exhaust extenders that re-direct emissions away from workers and others
- use of idle stop technology

Workplace policies and practices

When the elimination of diesel exhaust cannot be achieved, safe work practices and policies can help limit emissions in the workplace and community. Training workers, supervisors, joint health and safety committee members and representatives to understand the hazardous potential of diesel exhaust and the safe work practices and policies is essential.

The following are just a few exposure prevention strategies:

- turn off engine when not in use
- use of auxiliary power units and generator sets
- operation of diesel engines outdoors when possible and away from air intake for nearby buildings
- both general and local exhaust ventilation where operation required indoors
- climate-controlled pressurized cab equipped with HEPA filters
- regular inspection and testing to ensure operators and other workers aren't being exposed
- regular inspection and maintenance of engines and vehicles (must include particulate filters and other retrofits)
- respirators used as a temporary control measure only (and must follow an effective respiratory protection program including fit-testing and worker training)

Exposure to diesel exhaust at work and in the community is leading to the premature death of thousands of Canadians annually. Though many have committed to the efforts needed to eliminate or reduce this preventable exposure, much work remains. With prevention efforts in your workplace and/or community, workers, children and others will breathe a little easier.

NOTE: CAREX Canada is a multi-institution research project that combines academic expertise and government resources to generate an evidence-based national carcinogen surveillance program. Visit CAREX Canada at www.carexcanada.ca

Workers Health & Safety Centre

RESOURCE LINES

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