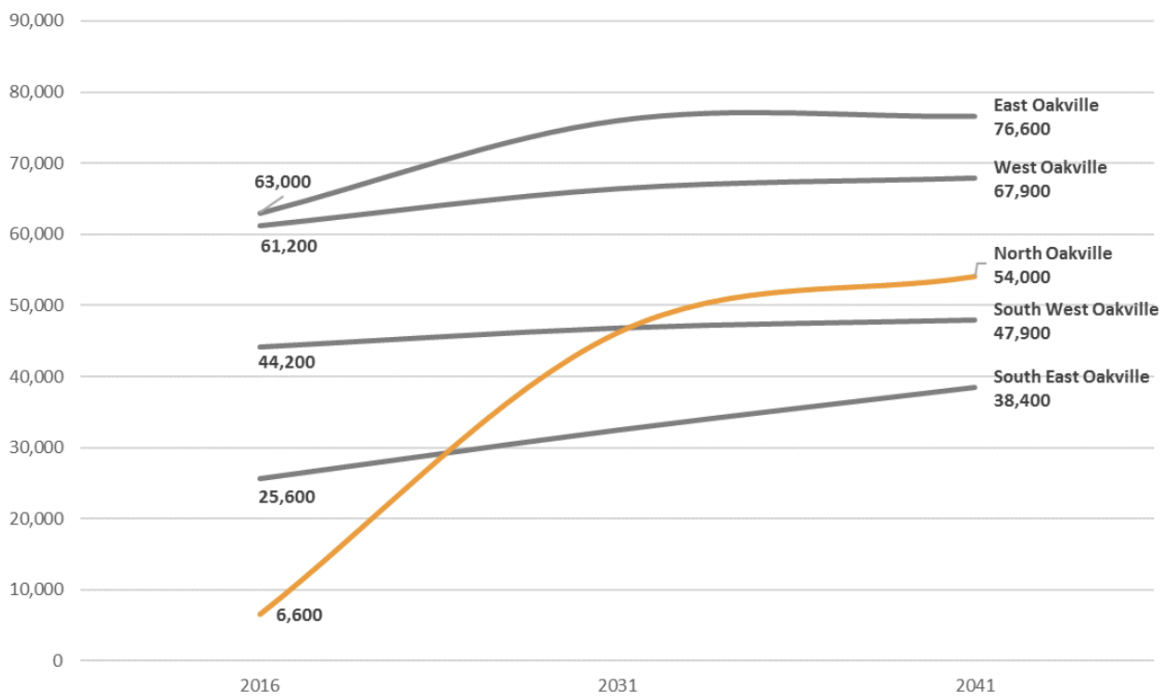


Air Pollution in Oakville, A Local Investigation

by Junhyeong Jason Kwak

Oakville is a rapidly growing metropolis near Toronto. As the population increases, it is facing challenges. Pollution is a serious issue here. It has a variety of negative effects on the health of its residents. This report examines the causes and offers solutions.

Figure 2-2: Forecast Population Growth



Graph of Oakville's historic and forecasted population growth (2015) [photo:Oakville]

Fifteen years ago, the Air Quality Index (AQI) was under fifteen for sixty days of the year. In 2015, it dropped to only 44 days. This confirms the steady increase in local pollution. There are several sources of it and transportation is the largest contributor. During the last five years vehicular traffic is up 10.3% according to Statistics Canada. Automobiles produce greenhouse gas emissions which damage air quality and cause respiratory conditions. The picture below shows a street in Oakville packed with cars on a typical day.

Vehicles emit nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter (PM). These harm local biodiversity and the health of plants and animals. Oakville's citizens suffer asthma, rhinosinusitis, chronic obstructive pulmonary disease (COPD) and respiratory tract infections. Additionally, they add to the formation of ground-level ozone, which further aggravates respiratory issues and causes chronic bronchitis, and emphysema.

Reducing emissions also contributes to four [Sustainable Development Goals](#) authored by the United Nations: good health and well-being; sustainable cities; climate action; and life above land.

Solution 1: Promote Electric Vehicles

One solution is to promote the use of electric vehicles (EVs) which have no emissions.

Comparatively, Seoul, in South Korea, is a developed city that encourages EV use. They offer incentives to citizens of up to \$7,200CAD depending on the brand of the vehicle; if they are more eco-friendly, owners receive larger subsidies. This is the kind of leadership Oakville needs to adopt.

Seoul also has a great infrastructure for EV users with more than 20,000 chargers. They plan to increase that number to more than 200,000 by 2026. Buildings are now required to have 5% of parking spaces equipped with power stations. Also, new high-speed chargers are available. They provide 70% charge in 18 minute charge. This is a great way to promote EVs since batteries need fast service. These plans are successful because PM rate reductions have added 30 days with less than $15\mu\text{g}/\text{m}^3$ according to AQI index improvements.

A Photo of Solar Powered EV station in Seoul [Photo: courtesy Seoul Metropolitan Government]



Oakville is encouraged to adopt similar strategies. This includes rebates and better infrastructures for charging stations. This is a crucial point to increase the numbers of EV consumers. Working with vehicle manufacturers to bring affordable EVs to all dealerships is a must. Decreasing the price is likely to attract more consumers. Also, EV stations must be

powered by renewable energy. The source of that kind of electricity must be eco-friendly as well. The result is going to be a decrease of oil-fueled transportation and pollution. It mitigates the amount of greenhouse gases and the air quality of the city improves.

Solution 2: Improve Public Transit



Picture of Oakville's Bus Fleet from [Photo: Oakville Transit]

“Today’s unveiling of Oakville Transit’s first-ever electric buses is an important milestone in advancing Council’s efforts to create a thriving and livable Oakville for today and future generations. Reducing the town’s greenhouse gas emissions and overall environmental footprint, while modernizing and expanding our transit services, is critical to the health and well-being of our community. Thanks to funding from the town and our federal and provincial

partners through the Investing in Canada Infrastructure Program, we're moving forward to provide innovative and environmentally friendly transit service for Oakville.”

-Mayor Rob Burton, February 23, 2023

Like the mayor says, public transit must be electrified to reduce pollution. They should be more accessible, affordable, and environmentally friendly. Fewer vehicles means lower emissions. Also, traffic jams are eased. This mitigates the amount of hours spent on the road. These all contribute to a healthier and more sustainable community.

Oakville plans to convert its buses to electric, from diesel, in five years. There are already multiple chargers in the transit facility. Then, the Ontario government must find a way to supply renewable electricity to the stations and support the city's innovations. As the Mayor said, it is a crucial decision. Electrified public transportation is a necessary leadership model for moving ahead.

Solution 3: Encourage Carpooling

Carpooling reduces pollution. It eases the number of vehicles on the roads, which decreases emissions. The government promotes it by promising preferential parking. Additionally, local companies encourage employees by offering lower parking fees for EVs. If workers carpool everyone benefits.

Conclusion

By promoting EVs, public transit, and carpooling, the climate in Oakville regenerates and the health of our citizens is protected. It promotes sustainability and the well-being of people and nature. Our municipal government must find an effective solution to this problem and be a model for other cities to follow. It is practical and the time to start these changes is now.

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