

## CURRICULUM VITAE

DONALD BRIAN MILLAR, B.Sc., D.C., F.R.C.C.S.S.(C). Doctor of Chiropractic, Sports Specialist (Retired)

Address: London, Ontario, N6G 5S1.

Languages: English (fluent - written & oral), French (fluent - written & oral), Spanish (working knowledge).

### Education:

Masonville Public School, London Ontario, Grades K - 6, 1957 - 1964.

Orchard Park Public School, Grades 7 - 8, 1964 - 1966.

Oakridge Secondary School, Grades 9 - 13, 1966 - 1971.

University of Toronto, Toronto, Ontario, Architecture, Year 1, 1971 - 72.

Western University, London, Ontario, Chemistry, Years 1 & 2, 1972 - 74.

University of Guelph, Guelph Ontario, Honours B.Sc., Food Science, 1976

Canadian Memorial Chiropractic College, Toronto, Ontario, Doctor of Chiropractic, 1984 (Cum Laude)

Canadian Memorial Chiropractic College, Toronto, Ontario, Fellow of the Royal College of Chiropractic Sports Sciences, Canada (F.R.C.C.S.S.(C)) 1996

Awards: Clinic Proficiency Award (C.M.C.C.), 1984

### Work Experience:

General Foods Research, Cobourg Ontario - Research Chemist, 1976 - 1980 (4 years).

Lyndhurst Paraplegic Hospital, Toronto Ontario - Orderly, Summer 1981.

Wellesley Hospital, Toronto, Ontario - Orderly, Porter, 1982 - 1984. (3 years)

Paramed, London Ontario - Orderly, Home Care, Summer 1984.

Millar Sports Chiropractic (Owner), London Ontario - Chiropractic Sports Specialist, 1984 to 2020 (36 years)

### Community Sports Involvement in London & District:

Canada Summer Games, London, Ontario - Supervisor of Chiropractic Services, 2001.

Womens' World Hockey Championships London/Mississauga - Medical Volunteer, 2000

Canadian National Rowing Team - Team Chiropractor, 1995 - 2015 (20 years).

London City Soccer Team - Team Chiropractor, 2005 - 2015 (11 seasons). Now Hamilton City in Hamilton.

London Majors Baseball Team - Team Chiropractor, 2007 - 2019 (13 seasons).

London Knights Hockey Team - Team Chiropractor, 2015 - 2016 (1 season). 2016 Memorial Cup Winning Team.

Freedom 55 CPGA Tour Championship of Canada, - Chiropractic Volunteer, 2012 - 2019 (8 Tournaments).

Canadian Women's Open, London Ontario - Charge Chiropractor, 2006 & 2014.

Scott Tournament of Hearts (Canadian Womens Curling Champ's), London Ontario - Director of Medical, 2006.

Brier (Canadian Mens Curling Champ's), London Ontario - Director of Medical, 2011.

Canadian Diving Championships, London Ontario, - Medical Volunteer, 2003.

London Devilettes Womens' Hockey Tournament - Medical Director, 1997 - 2002 (5 years).

London Triathlon - Medical Volunteer, 1986 - 88.

Ontario Winter Games - Medical Volunteer, London 1987.

Western Ontario Sectional Figure Skating Championships, Woodstock Ontario - Medical Volunteer, 1999.

Ontario Festival Synchronized Skating Championships, Woodstock Ontario 2000.

Western University Invitational Figure Skating Competition - Medical Volunteer, 2000.

London Marathon, London Ontario - Medical Volunteer, 1998, 2000.

London Aquatic Club - Medical Volunteer at Tournaments, 2001 - 2002.

### International Sports Involvement

Olympic Games, Sydney Australia - Team Chiropractor for Nicaragua, 2000.

World Figure Skating Championships, Vancouver B.C. - Chiropractic Volunteer, 2001.

Pan American Games, - Chiropractic Volunteer - Winnipeg Manitoba, 1999; Toronto, Ontario 2015.

### Sports Organizations

London Sports Council (Organizing Committee prior to retirement)

## NON-SPORTS COMMUNITY INVOLVEMENT

### **Non-Sports Community Involvement in London & District:**

London Electric Vehicle Association, London, Ontario - Founding Member 2014 - Present; President 2019 - 2022.  
Board of Directors of Junior Achievement of London (Administration and Fundraising for JA Youth Programs)  
- Member, 1986 - 1990 (4 years); President, 1988 - 1990.  
London Chiropractic Society - Member, 1984 - 2019 (35 years); Treasurer 1992 - 1996; Vice-President 1996 - 1998;  
President 1998 - 2000.  
London Executives' Association, London Ontario - Member, 1986 - 1996. (10 years).  
London Chamber of Commerce - Member 1984 - 1990 (6 years); Education Committee - 1985 - 1990.  
London Central Lions Club, London Ontario - Member 1984 - 1990 (6 years). Board Member 1988 - 1990.  
Fanshawe Optimist Club, London Ontario - Member 1993 - 2003 (10 years). Board Member 2000 - 2003.  
Look Out Local (LOL), London Ontario - Member 2015 - Present (7 years). Event organizer 2016 - 2018.

### **Personal Sports Involvement:**

London Legion Track & Field Club - Masters Member, 2007 - 2011.

### **Awards:**

Junior Achievement of London - Entrepreneur of the Year, 1992.  
Fanshawe Optimist Club - Optimist of the year, 1994.  
Ontario Masters Track & Field Association  
- Provincial Championships - Silver medal in 100M & 200M races, 2011.  
- Canadian Championships - Bronze medal in 100M & 200M races, 2011.

### **Other Community Involvement Outside London**

Canadian Institute of Food Science and Technology, Toronto Chapter - Member 1976 - 1980 (4 years);  
Board Member, 1978 - 1980.  
Northumberland Players, Cobourg, Ontario - Cast Member in 'Cabaret', 1978;  
Cast Member in 'Don't Drink the Water' 1979.  
General Foods Employee Recreation Club, Cobourg Ontario - Organizer of trips to Toronto Maple Leafs Game  
and O'Keefe Center, 1980.  
Ontario Chiropractic Association, Toronto Ontario - Liason for London and District, 2003 - 2006.

### **Youth Involvement:**

Member of Junior Achievement of London, 1968-1970.  
Achievers' Association, London Ontario - Member 1968 - 1970 (2 years); President 1969-70.  
Oakridge Secondary School, London Ontario - Track & Field Team 1967, 1968.  
Oakridge Secondary School, London Ontario - Cast Member in the play 'Poor Richard' 1969.  
Oakridge Secondary School, London Ontario - Set Construction for the play 'Annie Get Your Gun', 1971.  
Heart Fund, London Ontario - Door-to-door canvassing 1968 - 1970.  
Canadian Cancer Society, London Ontario - Door-to-door canvassing, 1968 - 1970.

### **Youth Awards:**

Junior Achievement - President of the Company of the Year, 1969.  
Oakridge Secondary School, London Ontario - Grade 11 English Award, 1969.  
Oakridge Secondary School, London Ontario - Ontario Scholar, 1971.

**Youth Work Experience in London:**

Red Barn, Wellington & Grey London Ontario - Cashier, Summer 1968.

Simpson's Downtown, London Ontario - Sales, 1968 - 70.

Wolverine Tube Div. Great Lakes Copper, London Ontario - Production Line Worker, Summer 1971.

Haggarty Buist Architects, London Ontario - Office Assistant and Draftsman, Summer 1972.

Supertest Gas Station, Richmond & Piccadilly, London Ontario - Pump Jockey & Service Bay Assistant, Summer 1973.

Silverwoods Dairies Ice Cream Plant (now Nestle Canada), London Ontario, - Popsicle Machine Operator,  
Summer 1974.

Universite Laval, Quebec PQ, - Lab Technician in the Food Science Department, Summer 1975.

## **Everything You Wanted to Know About Electric Buses**

By: Don Millar, Past President, London Electric Vehicle Association

November 29, 2021, with revisions on October 17, 2022 to reflect higher diesel prices.

### **Electric Buses**

#### **Pro's**

- smooth
- quiet
- much lower cost of fuel - about 1/4 the cost of diesel per kilometer (see below).
- much lower cost of maintenance - about 1/6 the cost of a diesel bus
  - regenerative brakes are good for 150,000 km between brake jobs
  - motor is good for 500,000 km before maintenance is required (motor rewinding)
- cleaner air - No CO<sub>2</sub>, NO<sub>2</sub>, or black particulate matter
- fuel prices fixed by Ontario Government
- Air conditioner in summer has negligible effect on fuel economy
- Kelly Paleczny, General Manager of LTC is in favour (she was on a panel at the CUTRIC conference in 2020, discussing: "Future Zero! Canadian Transit Systems Going Electric")
- London Mayor Ed Holder is in favour - he mentioned electrification of the LTC in his "State of the City" address in 2020.

#### **Con's**

- Greater initial Cost (\$1,000,000 vs \$640,000 For diesel)
- need snow tires (the rubber in low rolling resistance tires is too hard to get a good grip on packed snow and ice)
- lose range in winter, (fuel economy drops) due to:
  1. Snow tires
  2. Cabin Heater
  3. Slower chemical activity in the battery at lower temperatures
- High cost of charging stations (\$150,000 for overnight charger, \$300,000 for En Route Rapid Charger). See solution below for renting the charging stations from London Hydro.
- No En Route Rapid Charging during a power outage (see recommendation below that would give 3 - 6 hours of operation during a power outage when a model with a longer range is selected)

## **Diesel Buses**

### **Pro's**

- Lower Initial cost (\$640,000 vs \$1,000,000 for Electric)
- Don't need snow tires
- Heating runs on surplus heat from exhaust

### **Con's**

- Noisy
- Pollute the air (CO<sub>2</sub>, NO<sub>2</sub>, black particulate matter)
- much higher cost of fuel ( about 3x that of electric buses)
- fuel economy drops in winter
- higher cost of maintenance (brakes every 50,000 km, motor every 200,000 km (estimated))
- large drop in fuel economy with air conditioning in summer
- \*\*Fuel Prices Depend on OPEC\*\* and are out of our control (electricity prices regulated by Province of Ontario)

## **EXAMPLE: LTC ROUTE 12**

Length: 25 km

Duration : 60 minutes

Frequency: Every 20 minutes

No. Of Buses Needed: 60 min/20 min = 3

Hours of Operation: 6:30 AM - 11:59 PM = 17.5 hours

Per Bus Daily Kilometers: 25 km x 60 min per run/60 min per hour x 17.5 hours per day = 438 km/day

Per Bus Monthly Kilometers: 438 km/day x 30 days/mo = 13,140 km/month

Per Bus Yearly Kilometers: 13,140 km/mo x 12 mo/yr = 157,680 km/yr

Yearly Kilometers for the 3 buses on Route 12: 157,680 km/yr x 3 buses = 473,040 km

### **Yearly fuel cost for 3 buses:**

#### **Electric Bus**

473,040 km x 1.2 kW per km x \$0.20/kWh = **\$113,530** for 3 buses on Route 12

#### **Diesel Bus**

473,040 x 0.5 litres per km x \$1.85 per litre = **\$437,562** for 3 buses on Route 12

### **Yearly fuel savings for 3 electric buses on Route 12:**

\$437,562 - \$113,530 = **\$324,032**

### **Yearly Estimated Maintenance Costs for 473,040 km/year (three buses on LTC Route 12)**

#### **Electric**

0.95 engine rebuilds @ \$5,000 (every 500,000 km)	\$ 4,750	
3.2 brake jobs @ \$5,000 (every 150,000 km)	<u>\$16,000</u>	
TOTAL		<b>\$20,750</b>

#### **Diesel**

2.4 Engine rebuilds @ \$50,000 (every 200,000 km)	\$120,000	
9.5 Brake Jobs @ \$5,000 (every 50,000 km)	<u>\$ 47,500</u>	
TOTAL		<b>\$167,500</b>

#### **Yearly maintenance savings for 3 electric buses on Route 12:**

\$167,500 - \$20,750 = **\$146,750**.

#### **Total Yearly fuel and maintenance cost savings for 3 electric buses on LTC Route 12:**

\$324,032 + \$146,750 = **\$470,782** . This is half the cost of an electric bus yearly for one route.

### **What happens if there is a power outage on LTC Route 12?**

Asume: 40 ft Rapid Charge New Flyer Bus with 267 kWh battery

-use 25 km of range per circuit of route

-rapid charge 25 km of range (5 minutes) per circuit of route at rapid charger

-has 186 km of range (minus 25 km reserve = 161 km usable range)

-Route 12 is 25 km

-Therefore, on Route 12 during a power outage, you have

161 km /25 km per hour = 6.44 hours of reserve operation during a power outage before you have to shut down.

- due to the range decrease by 60% of in winter, this reserve operation will be decreased to 3.48 hours in winter before you have to shut down.

### **How to Finance the Charging Stations:**

#### **Form an alliance with London Hydro**

-London Hydro installs the chargers at their cost

-London Hydro charges the LTC a surcharge of \$0.27 per kWh (\$0.20 +\$0.27 = \$0.41 per kwh) for 5 years to cover the cost of the chargers:

473,040 km x1.2 kW per km x \$0.27 per kWh surcharge x 5 years = \$766,325 to cover the cost of the chargers

-London Hydro maintains the chargers

-after 5 years, the surcharge ends, and the cost of fuel (electricity) reverts to the going rate (currently

\$0.20/kWh), and ownership of the chargers reverts to the LTC.

**MY RECOMMENDATION TO START:**

4 x New Flyer Xcelsior Charge Electric Buses,

- Rapid Charge Model  
with 267 kWh battery @  
\$1,000,000  
\$4,000,000

3 x 146 kWh overnight chargers @ \$150,000

\$450,000

1 x 450 kWh En Route Rapid Charger @ \$300,000

\$300,000

TOTAL

\$4,750,000

NOTE: The chargers could be supplied by London Hydro in exchange for a \$0.27 per kWh surcharge for 5 years, as stated above.

Don Millar, Past President, London Electric Vehicle Association