ELECTRIC VEHICLE CHARGING STATIONS
DOWNTOWN GAYLORD
PRE-CONFERENCE WORKSHOP – MME WINTER INSTITUTE

Electric Vehicle Charging Stations Downtown Gaylord
City of Gaylord
January 28, 2020

Joseph P. Duff, City Manager
Kim Awrey, Assistant City Manager/Clerk
Bethany Tabor, EV Grid Benefits Lead PowerMIDrive Program, Consumers Energy
IS THERE A NEED?

- Electric Vehicles will grow from 3 million to 125 million by 2030
- GMC expected to have 20 models by 2023
- Ford pledges development
- Mercedes Benz expected 50 EV of all models by 2022
- BMW expected to have 12 models by 2025
- Volkswagen anticipates $82 billion spending on electric and autonomous vehicles by 2022.

Source: Jazel Automotive
CITY’S INTEREST IN ELECTRIC VEHICLE (EV) CHARGING STATIONS

- Attendance at Michigan Agency for Energy (MAE) Engagement Meeting for EV Charging in Michigan, December of 2018
  - *Found that MSU/MAE Study did not designate Gaylord as Placement Area*

- Staff Initiated benefits to City & DDA District
  - Economic – Opportunity to put people into businesses, restaurants and retail
  - Showcase Downtown – renovations totaling $2.2 million in 2017
  - Provide stop whereby people are encouraged to return to when traveling north

- Awareness of Consumers Energy PowerMIDrive Program – Launched June 2019

- Began Discussions with POWERHOME Solar – Troy & Grand Rapids August 2019 on Solar Opportunities for the City.
  - EV Charging Stations
  - Solar Array at City Hall – Reduction of Energy Costs
  - Solar Array at WWTP – Reduction of Energy Costs
Focusing on EV Charging Stations
- Potential Funding from PowerMIDrive Program
- MAE Office – Potential Funding from Charge Up Michigan Program
- Local Interest expressed by:
  - Gaylord Area Tourism Bureau
  - Gaylord DDA
  - City Funded Component

Proceeded with funding application from PowerMIDrive and Charge Up Michigan – Submitted by POWERHOME Solar

Stakeholders Pitch to Tourism Bureau, DDA and City Council for additional funding
DETAILED PROJECT DESIRES

- Two level 2 Long Term Charging Stations
- Two Level 3 Fast Charging Stations
- Find Perfect Location
LOCATION MAP

[Map of the area showing locations such as Court House, Pavilion, Charging Stations, and Public Restrooms.]
LOCATION SELECTED DOWNTOWN BY PAVILION ON COURT

- Heart of Downtown – 0.7 miles from Exit 282 (I-75)
- At Events Area – one block south of M-32 Trunkline
- Vehicle Traffic numbers of 14,000 to 18,000 vehicles per day
- Public Restroom Location – Adjacent to site
COST SHEET - $184,089

### SCOPE OF WORK

In accordance with the terms of the Agreement, Contractor agrees to perform the following project on behalf of the Owner (the “Project”) and the Project shall consist of Contractor providing all materials (equipment, hardware, and supplies), labor (including administration, work oversight, and all testing, quality assurance, and all building permit/inspections required to be completed and put into service the Electric Vehicle (EV) Charging System as specified below collectively, the “System”).

**Approxiemate Start Date:** March 20, 2020  
**Approximate Completion Date:** April 20, 2020

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CONFIRMATION OF COMMITMENTS

- Consumers PowerMIDrive Approval – October 15, 2019
  - $70,000 Level 3 Fast Chargers
  - $10,000 Level 2 Chargers
  - $30,000 Power upgrades to site
- MAE Commitment – October / Firm commitment December 2019
  - $41,213
- Gaylord Area Tourism Bureau – October 2019
  - $10,000
- Gaylord DDA – October 2019
  - $10,000
- City of Gaylord – October 2019
  - $42,876 - Approximate
CHARGING STATION

Express 250 Station

- Outdoor-rated, IP54, 2S1P (Lithium Phosphate) battery
- Wall- or floor-mounted
- Single or 3-phase input, 400V/50Hz
- Full AC power management
- Self-contained AC to DC power conversion system
- Output range between 200kW and 1000kW DC
- canopy up to 37.5kW at a max current of 78A
- 360° view with 20/40/50 connections available
CHARGING STATION

CT4000 Family
ChargePoint Level 2 Commercial Charging Stations

The CT4000 family is the latest generation of ChargePoint commercial charging stations. Refined yet rugged, these stations set the industry standard for functionality and aesthetics.

The CT4000’s full-motion color LCD display instructs drivers and supports dynamic updates of custom-branded video and advertisements.

Intelligent power management options double the number of parking spaces served by allowing two charging ports to share a single circuit. Sites with single port EV solutions can upgrade to dual-port stations without requiring additional electrical services.

The CT4000 is the first ENERGY STAR-certified EV charger, because it charges efficiently and conserves energy when not charging. As an ENERGY STAR-certified EV charger, the CT4000 uses significantly less energy than a standard EV charger when in standby mode to help you save money on your utility bill.

All CT4000 models offer one or two standard SAE J1772® Level 2 charging ports with locking features, each port supporting up to 32.6kW. With this standard connector, ChargePoint Level 2 stations can charge any EV.

Stations are available in boomed and wall mount configurations for easy installation anywhere. All stations are fully software upgradable remotely over the air.

Stations come in both 9’ and 12’ tall models with 9’ and 12’ cords, respectively. With multiple options for 30A and 50A cord reach, your station can service up to four parking spots, each at a rate regardless of parking style or CP 5050 and increase the usability of your EV ports.

Driver Friendly User Interface
• Instructional video shows how to use the station
• Multi-language: English, French, Spanish
• Touch button interface works in rain, ice, and with gloves

Backed by ChargePoint’s world class 24/7 driver support.

Easily Communicate with Your Drivers
Whether you’re a retail establishment wanting to advertise your latest product, a workplace looking to communicate with employees, or a municipality wanting to welcome visitors, ChargePoint’s cloud-based LCD screen makes it easy to reach EV drivers.

• Daylight readable, with auto-brightness control
• 640 x 480 resolution active matrix
• Full motion 30fps video support
• Updated up to 90 seconds of high-quality video on a color LCD screen
to individual stations as often as desired
• Brand your charging stations to communicate with drivers

Instructional video in English, Spanish or French

The First ENERGY STAR® Certified EV Charger
PROJECT POSSIBLE BY

- Consumers Energy PowerMIDrive Program
  - Bethany Tabor (517) 374-2158 Bethany.tabor@cmsenergy.com

- MAE Office

- Local Funding – Gaylord Area Tourism Bureau, DDA, City of Gaylord

- POWERHOME Solar
  - Larry Knight (248) 564-3428 lknight@powerhome.com

- Currently project in Design - March/April Start – May Completion
LAUNCHED JUNE 5, 2019

1. Charging when it benefits the grid and potential for managed charging
2. Increased public charging infrastructure
3. Public education
Three-year program to make it easier for electric vehicles (EV) owners to charge their EVs, and to ensure the electric grid is prepared to capture the benefits for our customers from the growing EV market.

Includes:

- **Rate options** to help EV owners maximize the value of their vehicle by charging off peak and at night.
- **Education campaign** to build awareness and understanding.

$500 for customers who install an approved Level 2 Charger at their residence, and sign up for our EV rate. *Additional savings available to low-income customers.*

**Up to $5,000** for commercial customers who install an approved Level 2 Charger in public location. *Total number of rebates limited.*

**Up to $70,000** for commercial customers who install an approved DC Fast Charger in public location. *Total number of rebates limited.*
NON-TESLA DC FAST CHARGERS & THE NEED FOR PUBLIC INFRASTRUCTURE
DC FAST & LEVEL 2 CHARGING COMING SOON TO GAYLORD!

Participating in the PowerMIDrive Program:
- Rebate Application
- Choosing Great Site Host Candidates
- Electrical Upgrade Assessment
- Total Project Cost & Rebate Incentives
- Ongoing Operation of Chargers

MSU/MAE Fast Charger Placement Study
Gaylord Fast Charger Site
MI EV FORECAST

- GM committed to a 100% EV future
- Ford going “all in” in the Mustang Mach-E
- Tesla sales continue to increase
- New players emerging (e.g. Rivian)
CLEAN TRANSPORTATION FUELED BY CLEAN ENERGY


Emissions in million metric tons of carbon dioxide equivalents

- Transportation (29.1%)
- Electricity generation (27.7%)
- Industry (22.4%)
- Agriculture (9.1%)
- Commercial (6.5%)
- Residential (5.2%)

CONSUMERS ENERGY GENERATION MIX

2019
10% Customer Efficiency Programs
9% Renewable
11% Coal
8% Natural Gas
31% Nuclear
20% Energy Storage
11% Oil and Natural Gas Peaking Plants

2030
20% Customer Efficiency Programs
6% Renewable
8% Coal
14% Natural Gas
10% Nuclear
42% Energy Storage
10% Oil and Natural Gas Peaking Plants

2040
22% Customer Efficiency Programs
12% Renewable
10% Coal
78% Natural Gas
56% Nuclear

Legend:
- Renewable
- Coal
- Natural Gas
- Nuclear
- Energy Storage
- Oil and Natural Gas Peaking Plants
THANK YOU!