



MEMORANDUM

Town of Nags Head

Planning & Development Department

To: Planning Board
From: Holly B. White, Principal Planner
Michael Zehner, Director of Planning & Development
Date: June 11, 2021
Subject: Updated- Discussion of Scope for Electric Vehicle Action Plan

Additions to this memo are shown in red, underlined text.

BACKGROUND

There has been ongoing discussion of the promotion and advancement of electric vehicles and infrastructure in the Town for some time. The Planning Board initiated discussion of electric vehicle charging stations in June 2019, and Staff prepared a detailed memo the following month to initiate discussion (available here [online](#) at page 51). These initial discussions led to the inclusion of an Electric Vehicle Action Plan as part of the Planning & Development Department and Septic Health FY2020-2021 Strategic Work Plan, with the general goal being to support the increasing prevalence of electric vehicles.

Since that time, the Town has pursued several avenues to promote and advance electric vehicle infrastructure. In 2020, Staff pursued research and grant opportunities for funding of [Level 2 charging stations](#) (page 1, VW Settlement Phase 1 - Level 2 Charging Program). After discussion at the Board of Commissioners meeting on [January 20, 2021](#), the Board directed Staff to work directly with potential vendors where the charger equipment is provided by the vendor at no up-front cost to the Town beyond installation of electrical service to the charger location. While a vendor arrangement has not been secured at this time, Staff continues to work towards the goal of securing the location of charging equipment on Town property.

Simultaneously, Staff determined that modifications to the UDO regulations would be necessary to accommodate charging infrastructure. The Planning Board considered these [text amendments at their March 15, 2021](#) meeting and recommended approval, and the Board of Commissioners approved the [text amendments at their May 5, 2021](#) meeting. The amendments allow electric vehicle charging stations as an accessory use to residential and commercial uses in all zoning districts.

The Planning Board was presented with a problem statement and project scope for an Electric Vehicle Action Plan at their May 18, 2021. There was no substantive discussion and staff recommended the Board continue their discussion at the June 2021 meeting.

PLANNING FOR ELECTRIC VEHICLES

While the discussion around electric vehicles and infrastructure has been ongoing, an Electric Vehicle Action Plan would allow the Town to undertake a proactive and holistic approach to electric vehicles and supporting infrastructure. In order to initiate the plan process, Staff developed an initial problem statement and project scope for the Board's consideration.

Problem Statement

With the numbers and use of electric vehicles increasing, is there sufficient charging and other supporting infrastructure in the community to accommodate this increase and Town, resident, business, and visitor needs? What steps can the Town take to improve any deficient or less than adequate conditions?

Project Scope

1. Conduct an assessment of existing conditions and identify community needs and goals;
2. Identify best practices related to charging and other supporting infrastructure needs for electric vehicles, as well as other related opportunities; and
3. Recommend specific actions.

Further, staff was contacted by representatives of Duke University Nicholas School of the Environment that are interested in developing this Plan for the Town, in collaboration with Planning staff. Dr. Timothy Johnson, Chair of the Master of Environmental Management Energy and Environmental Program, and Town staff virtually met to discuss the potential project. Dr. Johnson followed up the meeting with a proposed framework and goals for completion of an Electric Vehicle Action Plan by the Nicholas School as a Masters Project as outlined below.

Nicholas School Masters Projects

Students in the Nicholas School of the Environment's two-year professional Master of Environmental Management (MEM) program complete a capstone Masters Project (MP) in their second year of residence. Most MEMs work on team-based projects for external clients and devote 8 to 10 hours per week (the equivalent of a regular class) per person to their MP work. We will make MP group assignments for our spring 2022 graduates when our students return to campus mid-August, and the teams will be ready to meet with clients starting August 25th. The first task for each team will be to prepare a complete MP Work Plan, which will include background on their topic, a statement of project goals, a description of analytical methods, a detailed timeline with project milestones, and a list of information and other resources needed to complete the project. The Work Plan also describes interactions with the team's client. The project officially begins in early September once the team's faculty advisor and client approve the Work Plan, with work continuing through the following March. Students present their work at our public Masters Project Symposium in early April and final write-ups are due at the end of that month. Other deliverables are project dependent. If necessary, MP teams may work under a non-disclosure agreement to protect sensitive client information. Students complete client MP work pro bono.

Nags Head Electric Vehicle Action Plan

The memorandum's problem statement provides a clear motivation for the project:

"With the numbers and use of electric vehicles increasing, is there sufficient charging and other supporting infrastructure in the community to accommodate this increase and Town, resident, business, and visitor needs? What steps can the Town take to improve any deficient or less than adequate conditions?"

The deliverable for this project will be a written Electric Vehicle Action Plan for the Town of Nags Head documenting the following items related to the development and support of electric vehicle charging infrastructure:

1. Existing conditions
2. Town of Nags Head stakeholder needs and objectives
3. Best practices gleaned from similar cities
4. Stakeholder reactions the first three items listed here
5. Recommendations

As noted, the MP Work Plan will describe specific resource needs, which for this project will likely be limited to related information from the Town and access (or introductions) to relevant stakeholders in the community. The team will interact regularly with Staff and will be available to present to the Planning Board upon project completion. If useful, an intermediate presentation to the Board is feasible. Work for this project will necessarily be remote, though students will be able to visit Nags Head as needed.

Dr. Johnson will serve as faculty advisor for this project, upon approval, and expect the scope to support a team of 3 MEMs. In addition to serving as the Nicholas School's Associate Dean for Professional Programs Dr. Johnson also chairs the Energy and Environment concentration of the MEM program, teaches classes on transportation and energy system planning, and has been involved with a variety of electric vehicle projects over the last several years (including two stemming from Duke University's carbon neutrality planning).

The MEMs who will work on this project bring a background in transportation and power system planning, policy and economic analysis, geospatial modeling, stakeholder research, and survey design.

Staff requests the Board's feedback and direction on the scope and objectives of the Electric Vehicle Action Plan, as well as any related thoughts regarding stakeholder engagement and the timeline of the project. Staff will be available to answer any questions following the continued discussion by the Planning Board on the Electric Vehicle Action Plan.