

AGENDA ITEM NO. 15A

TO: Torrance Planning Commission

FROM: Development Review Division

SUBJECT: LUS12-00001/Alternative Fuels Information and Electric Vehicle Municipal Code Amendments

DATE: June 6th, 2012

Background

The 2008 Strategic Plan committee, in recommending the addition of the “Stewardship of the Environment” Strategic Priority, recognized the impact alternative fuels can have on the local environment. The committee included various goals, with sub-goals, to guide City operations in achieving them. For example, the Committee included a goal to “improve air quality”. This goal was accompanied with several sub-goals involving “Alternative Fuels”, which were correlated to Key Performance Indicators (KPIs) that were developed and approved by City Council to implement the overarching goal of improving air quality.

KPIs #153 and #154 are related to encouraging the development, and facilitating the development of, alternative fuels and energy sources. Torrance based businesses have supported such efforts such as the Toyota/Shell Hydrogen Station located at the northwest corner of 190th and Gramercy. Some gasoline stations have also converted some conventional gasoline re-fueling pumps to E-85 flex fuel. The City of Torrance has long incorporated hybrid and alternative fuel vehicles in the municipal and transit fleets. According to the General Services Department Fleet Division, of the 353 non-safety vehicles, 87 are alternative fuel vehicles. These electric, CNG, propane, Bio-diesel and hybrid vehicles comprise 25% of the City’s non-safety fleet. Fleet also notes that this percentage will continue to grow when the replacement of existing fleet vehicles with alternative fuel vehicles is operationally and fiscally feasible.

Incorporating greener vehicles into the fleet, however, is only the first step toward facilitating the development and use of alternative fuels. Providing a supportive and facilitative environment to support such efforts is equally as important. Alternative fuel Infrastructure needs to be in place to allow for alternative fuel vehicles to have access to the energy sources they require. KPI 153 directed staff to support accommodating at least three types of alternative fueling/charging locations for City and Public Use by 2012. The City Yard is currently home to a Bio-diesel cooperative station, a CNG station, and a propane fueling station. An additional CNG station is also envisioned to accommodate the new Transit buses that run on CNG. The latter two, however, are and will be limited to City use only because of safety and operational constraints. As such, staff has been pursuing grant opportunities to help facilitate the development of a third type of alternative fueling that is both integrated into the municipal fleet and accessible to the public.

In 2011, the City Council approved an agreement with ClipperCreek, Incorporated, an Electric Vehicle Supply Equipment (EVSE) manufacturer and retailer, to take advantage of the California Energy Commission's (CEC) Re-Connect grant to upgrade the outdated "legacy" charging unit located at City Hall. ClipperCreek, Inc., also discounted the purchase price for an additional charging unit to allow the City to dual-mount the second unit to the grant funded unit. This allows the Civic Center to offer two charging stations for municipal fleet vehicles at night but also for use by both Civic Center employees and the visiting public during Civic Center hours. The chargers have also provided the City with a third alternative fuel source on civic property available for both municipal and public use.

Now that KPI#153 has been successfully achieved, the City's focus now turns to expanding the accessibility of alternative fuel infrastructure throughout the City by increasing the number of sites and evolving our understanding of function, ideal placement and facilitation.

Honda Fit-EV Project

In 2010, the City was presented with opportunity to participate in the Honda Fit-EV pilot project. Honda developed an EV-Fit pilot program to further cross-sector collaboration with Google, Stanford University and the City of Torrance. Each participant has a unique focus within the collaborative. The City saw an excellent opportunity to implement KPI #154 by applying the supportive and facilitative mindset we have applied to alternative fuel infrastructures toward Electric Vehicle (EV) charging infrastructure.

City staff developed an exercise known as the "Plug-(p)in Maps" where members of the public can "plug-in" a pin into aerial maps of the city to reflect their preferred location for EV chargers. This exercise was completed at various environmental functions, such as the 2011 Torrance Environmental Fair and the 2011 Honda Employee Earth Day Fair, with much success. In an effort to expand public outreach, the exercise was formatted to the City's web-site to allow individuals to submit their suggestions beyond organized events. The suggestions received to date have been compiled on this map and are available for your review under the "Torrance EV Study" Highlight on the Community Development web-page or at <http://www.torranceca.gov/22841.htm>.

Through these exercises, the public was engaged directly as to the potential use and potential placement of charging locations. Staff discovered that the majority of those that participated were predominantly in support of Electric Vehicles, were willing to offer their suggested locations and the majority were comfortable with paying for the power associated with the charging. Staff also discovered that the public's enthusiasm was balanced with common concerns associated with the higher purchase price of the EVs and the need for additional equipment at their home or business and the upgrades that would be required to accommodate charging equipment install. Staff also notes that overwhelmingly, the largest concern held by survey participants was that of "Range Anxiety". This is a commonly used reference for a concern with the mileage an electric vehicle can travel before needing to be re-charged.

Publicly accessible EV-infrastructure, at least in the South Bay, is considerably limited given the number of EV vehicles on the road and available for sale. Through increased awareness on the part of the public, businesses and City staff, we currently have 12 Torrance sites with operational charging stations, some sites have multiple chargers, and 4 additional sites that are planned as a part of projects currently under construction (Attachment #?). We have also seen an increased awareness on behalf of homeowners who installed a total of 11 garage chargers in 2011 and 4 since the start of 2012. In meeting with representatives of Honda, *Toyota* and GM, they too expressed a concern of finding ways to overcome the three issues potential buyers may have that could prevent them from buying EVs. Without the facilitation of EV charging locations at multiple, highly visible and popular locations throughout the region, on both public and private facilities, drivers will not quickly overcome “Range Anxiety” and upgrade concerns. In addition to potentially limiting vehicle sale objectives, range anxiety may also slow the potential vehicle emission reductions that the South Bay could achieve.

The 2008 Strategic Plan Committee recognized the several factors that place Torrance in a Strategic and Leadership position when it comes to facilitating potential sustainable initiatives. Aside from being the largest City in the South Bay, Torrance is the business and commercial shopping “Hub” of the South Bay. Torrance also has the largest resident and day-time populations. This exposure to large segments of the local population place Torrance in a unique position from which to facilitate EV infrastructure and reduce “Range Anxiety” concerns.

Staff plotted suggested locations from the “Plug-In” map exercise and found that there was interest for EV charging stations throughout the City that would have the potential for being effective in reducing emissions and/or to be highly visible. Several sites in town also exhibited numerous suggestions for installation of EV infrastructure. For instance, large employers (Automaker offices, Financial Center, Robinson Helicopter and the Civic Center) and various business park locations received numerous suggestions. These sites would likely be used by employees commuting to work and would likely experience longer charging periods throughout the day. This would be a more static exposure as those exposed to the EV charging units at the place of employment would come across them on a daily basis on a site they routinely drive to daily. Although there would be less exposure to larger segments of the population, those that do take advantage of the on-site charging can represent a continuous and steady reduction in emissions. Popular shopping destinations (Del Amo Mall, Torrance Town Center, Crossroads Shopping Center and Downtown Torrance), recreational (Torrance Beach, Columbia and Wilson parks) and other civic destinations (Civic Center and Madrona Marsh) will likely be used by local South Bay residents looking for a “top-off” charge to help extend their mileage range. These would be sites with a higher likelihood, and more fluid level of, exposure as they are visited by larger segments of the population. If additional grant opportunities present themselves, the public input we have received can be used to best allocate resources to achieve both exposure and emissions reductions.

Installation of EV charging amenities at appropriate locations, allows for EV infrastructure to become effective and highly visible throughout the City. Two critical elements to the creation of a "lily-pad" concept for local EV charging to be possible and a potential goal of never being more than one mile away from an accessible charging station anywhere in town. In addition to working internally toward the "1 Mile, 1 Charger" goal, staff has also discussed with the South Bay Environmental Services staff the concept and implementation measures. Walter Siembab, Reaseacrh Director with the South Bay Council of Governments, has met with staff and is in support of Torrance's progress in the matter and hopes to use lessons from the field as they complete their regional studies for South Bay. By coordinating such activities, staff hopes to provide recommendations for placement, use and operation of the charging units to installers, as well as coordinate functions such as permitting requirements and inspections to be standardized throughout the South Bay. This would also open the door to more regional funding opportunities for a local EV-hub to be created.

While engaging the public and automakers, staff also met with representatives of various City Departments to discuss operational issues that may arise from the installation of EVs, such as signage, permitting/inspection, enforcement and the preferred standards for publicly accessible EV-charging. Although there is hope for a broader EV-plan for the entire South Bay, staff did identify several suggested guidelines for EV equipment and Torrance Municipal Code sections that would need to be amended so as to provide better direction to the property owners. Staff also suggests criteria that would accommodate installation of said infrastructure at the most efficient cost point; new construction projects.

Environmental Commission

On November 1st, 2011, staff presented a series of Municipal Code definitions, development standard additions and updates to the Torrance Environmental Quality and Energy Conservation Commission. The Environmental Commission directed staff to include a definition for J1772, further investigate areas of concern with regards to Homeowners Associations (HOAs) opposing individual owner installations and revisiting recommended language on some of the development standards. On March 1st, 2012, the Environmental Commission held a second hearing on the EV related code updates. Staff developed a definition for J1772, addressed their concerns with language, and informed the Commission that the State legislature had addressed the issue with regards to HOAs by prohibiting "unreasonable burdens" in allowing the installation of EV infrastructure in common interest developments. The Commission then concurred with Staff recommendations with a few amendments, including the modification of the staff recommended requirement for one of every five new residential units to be provided with Level 2 EV capability in the garage to any new residential construction.

These items, listed below, will be presented and explained in a PowerPoint presentation the evening of the meeting to allow for discussion by the Commission. Staff notes that proposed Municipal Code modifications provided below reflect the Environmental Commissions position on the items and, if concurred with by the Planning Commission, would need to be forwarded to the City Council for consideration.

Code Definition Additions to:

-Division 9, Chapter 1, Article 2/ Definitions (Proposed TMC Sections 91.2.170 – 91.2.176):

- Electric Vehicle/ A vehicle that operates, either partially or exclusively, on electrical energy from the grid, or an off-board source, that is stored on board for motive purpose. Electrical Vehicle includes the following:
 - Battery Electric Vehicle (BEV)/ a vehicle that operates exclusively on electrical energy from an off-board source that is stored in the vehicle's batteries and produces zero tailpipe emissions or pollution when stationary or operating.
 - Plug-in hybrid electric vehicle (PHEV)/ a vehicle that (1) contains an internal combustion engine and also allows power to be delivered to drive wheels by an electric motor; (2) charges its battery primarily by connecting to the grid or other off-board electrical source; (3) may additionally be able to sustain battery charge using an on-board internal combustion-driven generator; and (4) has the ability to travel powered by electricity.
 - Neighborhood electric vehicle/ a self-propelled, electrically powered four-wheeled motor vehicle whose speed attainable in one mile is more than 20 miles per hours and not more than 25 miles per hour.
 - Medium-speed electric vehicle/ a self-propelled, electrically powered four-wheeled motor vehicle equipped with a roll cage or crush proof body design, whose speed attainable in one mile is more than 25 miles per hours but not more than 35 miles per hour.
 - Electric Scooters and Motorcycles/ any two-wheel vehicle that operates exclusively on electrical energy from an off-board source that is stored in the vehicle's batteries and produces aero emissions or pollution when stationary or operating.
- Electric Vehicle Charging Levels are the standardized indicators of electrical force, or voltage, at which an electrical vehicle's battery is recharged. The terms Level 1, 2, and 3 are the most common EV charging levels, and include the following specifications:
 - Level 1 is considered a "Slow Charging" station and typically requires a 15 or 20 amp breaker on a 110 or 120-volt AC circuit and standard outlet.
 - Level 2 is considered a "Medium Charging" station and typically requires a 40 to 100 amp breaker on a 220 or 240-volt AC circuit.
 - Level 3 is considered a "Fast or Rapid Charging" station and typically requires a 60 amp or higher dedicated breaker on a 480 volt or higher three-phase circuit with special grounding equipment. Level 3 charging

uses an off-board charger to provide the AC to DC conversion, delivering AC directly to the car battery.

- Electric vehicle charging station/ a public or private parking space located together with a battery charging station which permits the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electrical vehicle.
 - Electric vehicle charging station – restricted/ an electric vehicle charging station that is (1) privately owned and restricted access (e.g., single-family home, executive parking, designated employee parking) or (2) publicly owned and restricted (e.g., fleet parking with no access to the general public).
 - Electric vehicle charging station – public/ an electric vehicle charging station that is (1) privately owned and accessible (e.g., shopping center, medical or office building) or (2) publicly owned and accessible (e.g., Civic Center or Park public parking with access to the general public).
- Electric vehicle infrastructure/ structures, machinery, and equipment necessary and integral to support an electric vehicle, including battery charging stations, rapid charging stations, and battery exchange stations
- Electric vehicle parking space/ any marked parking space that identifies the use to be exclusively for the parking of an electric vehicle and is equipped with an electric vehicle charging station.
- Non-electric vehicle/ any motor vehicle that does not meet the definition of “electric vehicle”
- J1772/ North American electrical connector standard that establishes a common vehicle inlet and mating connector for conductive charging of electric vehicles (*added by the Environmental Commission*).

Code Development Standards and Off-Street Use Restriction Additions to:

-Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: Restriction for only EV's to park in EV charging station parking spaces (Proposed TMC Section 93.4.27).

-Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: An EV Parking space requirement for new construction or properties significantly remodeled, as defined in TMC 231.1.2, and which provide 50 or more parking spaces, shall be required to provide and maintain at least 2% of available parking spaces as Electric Vehicle Parking Spaces equipped with either “Level 2” or “Level 3” charging infrastructure (Proposed TMC Section 93.4.27).

-Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: Required Signage specifications for Electric Vehicle Parking Spaces, to clearly mark space as

Electric Vehicle parking, Contact information for charging station (Proposed TMC Section 93.4.28).

-Division 9, Chapter 3, Article 5/ Development Standards for Residential Parking Areas: That charging units located within residentially developed properties, must either be provided within an enclosed structure, affixed to a permitted structure or located adjacent to a required parking space, provided exterior charging units do not encroach into any required setback by more than 12-inches.

-Division 8, Chapter 2, Article 2/ Amendments to the 2010 California Electrical Code and Administrative Code: That all new residential units shall be equipped with the required electrical conduit to accommodate at least one "Level 2" Electric Vehicle charging capability within designated parking areas for said unit(s) (added by the Environmental Commission).

Staff has recently been made aware that a similar EV capability provision exists in the July 1, 2012 CALGreen Code updates. Section A4.106.6 "Electric vehicle (EV) charging" sections allow the local jurisdiction to incorporate a local amendment that has been vetted through the California Building Standards Commission approval process. This section accomplishes the same intent envisioned by the Environmental Commission for all single and two-family, and multiple-family projects that have parking within a dedicated garage. It also requires that projects install to accommodate a dedicated branch circuit, a listed raceway that is fastened from main service or subpanel & terminates in close proximity to likely charger placement and that the area is posted with EV capable notice for future occupants.

For multiple-family projects that have common parking amenities, it requires that 3% of the parking spaces be EV capable with the same requirements as noted above. Although does not allow for "all" residential units to be EV capable, it does satisfy the majority of the Environmental Commission's intent of promoting readiness. It also achieves the majority of the objectives without requiring new findings, public noticing and additional local amendment proceedings by the Building Standards Commission. Due to limited resources, staff requests that the Planning Commission consider moving forward on incorporating A4.106.6 into the local code.

Conclusion

The City efforts with regards to alternative fuels and fuel efficiency are not to promote one-form of fuel over another. In fact, efforts illustrated above to facilitate the development of an EV charging infrastructure throughout the City is merely to ensure that the technology is available and accessible to those that have chosen to drive EVs. In addition, increasing accessibility to alternative fuels supports multiple corporate citizens that research, design, market and sell such products within Torrance. The Honda Fit-EV collaborative, and the relationship the City enjoys with both Toyota and GM, present an excellent opportunity to better comprehend the demands for EV cars and EV infrastructure, while supporting the efforts to reduce emissions and support Torrance's corporate citizens. In an effort to further City Council objectives to reduce both the Torrance Municipal and Community carbon footprints, Staff recommends

approval of the recommended code modifications and forwarding this matter to the City Council.

The Commission at this point has several options in which to direct Staff. The Planning Commission may:

- Direct Staff to conduct further research in a specified area;
- Direct Staff to modify, add, or eliminate sections of the discussed Municipal Code modifications and forward to the City Council; or
- Direct Staff to forward the above listed recommendations to the City Council with the Support/Denial of the Commission;

Prepared By,



Danny Santana
Senior Planning Associate

Respectfully Submitted,



Gregg D. Lodan, AICP
Planning and Environmental Manager

Attachments:

1. TEQECC 03/01/12 Meeting Minutes Excerpt
2. TEQECC 03/01/12 Agenda Item 7B
3. TEQECC 11/03/11 Agenda Item 7A includes:
 - (1) Torrance Strategic Plan 2008 Excerpt Action, "Stewardship of the Environment"
 - (2) Torrance Strategic Plan Action Plan 2010, "Stewardship of the Environment" Improve Air Quality KPI Excerpts

March 1, 2012**MINUTES OF A REGULAR MEETING OF
THE ENVIRONMENTAL QUALITY AND
ENERGY CONSERVATION COMMISSION****2. ROLL CALL:**

Present: Commissioners Chim, Gobble, Reilly,
Watson, and Chairperson Griffiths.

Absent: Commissioner Robbins.

Also Present: Deputy Community Development Director Cessna and
Senior Planning Associate Santana.

MOTION: Commissioner Watson moved to grant Commissioner Robbins an excused absence for the March 1, 2012 Commission meeting. Commissioner Gobble seconded the motion; a voice vote reflected unanimous approval.

7. ENVIRONMENTAL MATTERS**7B. ALTERNATE FUELS AND ELECTRIC VEHICLE CODE AMENDMENTS**

Senior Planning Associate Santana provided background on the November 3, 2011 Commission meeting that addressed amendments to the Torrance Municipal Code (TMC) as well as issues related to EVs and the infrastructure necessary for charging them. With the aid of a slide presentation, he presented proposed changes to the TMC and recommended that the Commission approve as amended and forward the amendments to City Council for adoption.

He reported that one area of concern at the November meeting was with condominium or shared housing parking and proposed requirements. He was pleased to announce that this issue has since been addressed at the State level, prohibiting "unreasonable burdens" in allowing the installation of EV infrastructure in common interest developments. He noted that staff feels that this State law will be sufficient to address the issue and that Section 93.5.10 - Restriction on Use - has been amended to reflect that.

Senior Planning Associate Santana presented the recommended list of definitions, noting that the definition for J1772 has been added. Referring to Section 93.4.26 – EV Parking Infrastructure Requirements, he proposed new TMC requirements for commercial/industrial developments with 50 or more parking spaces to provide sufficient infrastructure to accommodate EV charging stations at minimum 2% of total parking spaces. He noted that the TMC has to be finite and give specific standards; however, developments may exceed the 2% if they choose.

He presented proposed new TMC requirements for EV Only parking restrictions and signage. He stated that staff's recommendation is that "EV Only" parking be for the sole use of EVs, not adding on that they have to be charging. He reported that State law allows local agencies the flexibility to be able to choose if they want to enforce parking restrictions. He stated that there is no adopted universal standard regarding signage and that it is commonplace throughout the industry to use stickers or signs on

charging units. He noted that previous proposals for Hours of Operation and Towing Information have been removed because most commercial sites already post this information.

Referring to Section 93.5.17 – Residential EV Parking Accommodation, Senior Planning Associate Santana presented staff's recommendation that charging units must be within an enclosed structure, affixed to a permitted structure, or located adjacent to a required parking space. He recommended that charging units be allowed to encroach into certain setbacks up to 12", adding that most require only 8-9". He presented a proposed requirement for new residential construction, involving five or more units, to provide 20% of units with infrastructure to accommodate Level 2 EV charging units.

Discussion centered on whether the residential requirement should include electrical current, just the conduit installed, and for how many units. It was the consensus of Commissioners that all new residential construction be required to provide per unit, at a minimum, electrical conduit to accommodate a Level 2/220 volt EV charging unit(s).

Deputy Director Cessna stated that they would take the Commission's recommendation to Building staff to work on the exact verbiage.

MOTION: Commissioner Gobble moved to approve staff recommendation as presented and amended. Commissioner Watson seconded the motion; a voice vote reflected unanimous approval (absent Commissioner Robbins).

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TORRANCE ENVIRONMENTAL QUALITY COMMISSION

March 1, 2012

To: Chairman Griffith and Members
of the Torrance Environmental Quality Commission

Subject: Alternate Fuels and Electric Vehicle Municipal Code Amendments
Update

Attached are the report and minutes from the November 3 TEQECC meeting discussing amendments to the Torrance Municipal Code (TMC) addressing issues related to Electric Vehicles (EV) and the infrastructure necessary for charging EVs.

As discussed at the November meeting, the biggest area of concern was with condominium or shared housing parking and proposed requirements for either installation of infrastructure and/or requirements that would prohibit unreasonable denial of installation of infrastructure. This issue has since been addressed at the State level, prohibiting "unreasonable burdens" in allowing the installation of EV infrastructure in common interest developments. At this time, staff feels that this will be sufficient to address the issue.

Other questions were raised regarding the need to reassess the proposed requirements at a later point in time. This will best be accomplished by either placing additional requirements on developments during the entitlement process or revising the TMC to reflect the changed conditions.

Staff recommends that the TEQECC approve the proposed changes to the TMC regarding EV infrastructure and forward them to the City Council for adoption.

Respectfully Submitted,

Linda Cessna
Deputy Community Development Director

Attachments:

A. Excerpt of Minutes November 3, 2011

ITEM 7B
TEQECC MARCH 1, 2012

November 3, 2011

**MINUTES OF A REGULAR MEETING OF
THE ENVIRONMENTAL QUALITY AND
ENERGY CONSERVATION COMMISSION****1. CALL TO ORDER**

The Torrance Environmental Quality and Energy Conservation Commission convened in a regular session at 7:00 p.m. on Thursday, November 3, 2011 in the West Annex meeting room at Torrance City Hall.

2. ROLL CALL:

Present: Commissioners Chim*, Gobble, Reilly,
Robbins, Watson, and Chairperson Griffiths.

Absent: Commissioner Cunningham.

Also Present: Deputy Community Development Director Cessna and
Senior Planning Associate Santana.

MOTION: Commissioner Robbins moved to grant Commissioner Cunningham an excused absence for the November 3, 2011 Commission meeting. Commissioner Reilly seconded the motion; a voice vote reflected unanimous approval.

*Commissioner Chim arrived at 7:08 p.m.

7. ENVIRONMENTAL MATTERS**7A. ALTERNATIVE FUELS UPDATE AND ELECTRIC VEHICLE MUNICIPAL CODE AMENDMENTS**

With the aid of slides, Senior Planning Associate Santana provided background on the 2008 Strategic Plan and Key Performance Indicators (KPIs) that were developed to implement the goal of improving air quality: KPI #150 – Green Fleet; KPI #153 – Alternative Fueling; and KPI #154 – Facilitate Infrastructure. He reported that the Torrance Transit fleet will be 100% green by 2015. He stated that there is a bio-diesel cooperative station and a propane fueling station at the City Yard, and noted that the City is working with Honda, ClipperCreek, and the California Energy Commission to obtain a grant to upgrade the outdated unit located at City Hall. Referring to KPI #154, he discussed the Honda Fit-EV Project and the “Plug-(p)in Maps” where community members “plugged in” pins into aerial maps of the City to reflect their preferred locations for EV chargers, adding that the exercise was also replicated online. Identified locations include the Mall and regional shopping centers, large employment centers, business parks, hospitals, Torrance Beach, Wilson Park, and the Civic Center complex.

He reported that from the data staff determined two major concentrations of facilitation--residential community and commercial community. He stated that the residential sector wants easy permitting and an efficient inspection process while the commercial sector is looking for guidelines for EV parking stall standards for new developments and monetary assistance. He discussed municipal challenges and provided information regarding partners that include

Federal and State, Southern California Edison, and the automobile industry. He provided definitions offered in the staff report: electric vehicle, EV charging levels 1, 2, and 3, EV charging station (restricted and public), EV infrastructure, EV parking space, and non-electric vehicle. He presented proposed Municipal Code modifications to provide better direction to property owners and prevent obstructions to individual homeowners from installing EV infrastructure.

Discussion centered on Code amendments to prevent homeowners associations from restricting installation of EV parking infrastructure as well as the ability for homeowners associations to recover expenses associated with power usage and maintenance of the units.

Commissioner Gobble expressed concern about capacity limitations in multi-family homes and suggested using the verbiage “encourage” rather than “shall not prohibit.”

Commissioners Reilly and Chim voiced support for using “shall not prohibit” in the event that homeowners associations put in hurdles to make it difficult for homeowners to install charging units.

Chairperson Griffiths recommended that staff speak with homeowners associations to get their feedback and staff pointed out that proposed modifications would need to be forwarded to the Planning Commission for review and direction prior to being presented to City Council for consideration.

Commissioner Watson discussed the need for public access points. Responding to her inquiry about condominium complexes, Senior Planning Associate Santana explained that a charger could be mounted on a wall, with a cable running to an assigned parking space.

Commissioner Reilly received clarification from staff that cables are 10-15 feet long and can cover multiple stalls. In response to her inquiry, Commissioner Gobble stated that currently EVs run 2-3 cents per mile and there is no tax on electricity, noting that Level 3 is very expensive charging.

Commissioner Gobble questioned how many registered EVs there are in Torrance and Commissioner Gobble responded that there are 380 to 420 in the entire South Bay area.

Senior Planning Associate Santana provided information on new Municipal Code requirements for new developments, with 50 or more parking spaces, to provide and maintain at least 2% of available spaces as EV parking spaces. He asked for direction from the Commission if 50 or more spaces and at least 2% were reasonable requirements.

Commissioner Robbins expressed concern that 2% might be sufficient today but that more may be needed in the future. He suggested adding “subject to periodic review” but staff explained that retroactive requirements are not possible once a development has completed its installation. It was pointed out that there is no limit on the maximum number of EV spaces and that some may install more than 2% voluntarily.

Commissioner Chim initiated a brief discussion about making it a requirement for new developers to install the capacity for infrastructure.

Deputy Director Cessna stated that it would be preferable to add additional conditions during the entitlement process rather than mandating it in the Municipal Code.

Commissioner Gobble suggested having new developments just install the conduit systems for potential additional EVs and recommended that charging stations not be placed in premium parking places.

Commissioner Watson received clarification from staff that the Municipal Code is frequently updated and modified at City Council's direction.

Responding to Commissioner Reilly's inquiry, Senior Planning Associate Santana stated that staff's recommendation is not to mandate location of parking spaces or charging stations, but to leave it up to the property owner.

Senior Planning Associate Santana presented new Municipal Code requirements for restriction on use of EV parking for EVs only and required signage of "EV Only" parking.

Commissioner Gobble initiated a brief discussion centered on placing a two or three hour time restriction for parking in commercial and public locations.

Senior Planning Associate Santana provided proposed restrictions regarding placement of charging stations in R1 zones. He stated that stations would need to be placed in an enclosed structure or affixed to a permitted structure, noting that allowing them to be placed along the curb would degrade the requirement for the required parking space and could lead to problems with neighbors. He also stated that staff is considering adding that new residential construction involving at least five units would be required to provide sufficient electrical supply to support a Level 2 charger within designated parking areas of at least 20% of the units.

Commissioner Reilly stated that she concurs with the restrictions in R1 zones, noting that allowing charging stations along the curb would degrade the neighborhood aesthetically. She also voiced support for the proposed requirement for new home construction.

Commissioner Gobble expressed his support for restrictions on where charging stations can be placed at single-family residences. Referring to new home construction of five or more units, he suggested that they be required to install a charging unit, not just the capacity.

Commissioners Griffiths and Watson agreed with Commissioner Gobble, noting that it would be a small cost of the overall development and support what the City is trying to do.

Commissioner Gobble suggested putting locations of public charging stations and information about alternative fuels on the City's website.

Chairperson Griffiths commended staff for a job well done and expressed hope that implementation moves forward quickly.

MOTION: Commissioner Gobble moved to direct staff to conduct further research and refine those areas discussed at this meeting. Commissioner Watson seconded the motion; a roll call vote reflected unanimous approval (absent Commissioner Cunningham).

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AGENDA ITEM NO. 7A

TO: Torrance Environmental Quality and Energy Conservation Commission

FROM: Development Review Division

SUBJECT: Alternative Fuels Update and Electric Vehicle Municipal Code Amendments

DATE: November 3rd, 2011

Background

The 2008 Strategic Plan committee, in recommending the addition of the "Stewardship of the Environment" Strategic Priority, recognized the impact alternative fuels can have on the local environment. The committee included various goals, with sub-goals, to guide City operations in achieving them. For example, the Committee included a goal to "improve air quality". This goal was accompanied with several sub-goals involving "Alternative Fuels" and was correlated to Key Performance Indicators (KPIs) that were developed and approved by Council to implement the overarching goal of improving air quality.

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Recently, the City Council approved an agreement with ClipperCreek, Incorporated, an Electric Vehicle Supply Equipment (EVSE) manufacturer and retailer, to take advantage of the California Energy Commission's (CEC) Re-Connect grant to upgrade the outdated "legacy" unit located at City Hall. This would give the City a third alternative fuel source that would be accessible to the public. ClipperCreek, Inc., has also discounted the purchase price for an additional charging unit to allow the City to dual-

mount the second unit to the already grant funded unit. This allows the Civic Center to offer two charging stations for employee and public use during City Hall hours.

Honda Fit-EV Project

In 2010, the City was presented with another opportunity to facilitate the development of EV infrastructure. Honda developed an EV-Fit pilot program to further cross-sector collaboration with Google, Stanford University and the City of Torrance. Each partner has a unique focus within the collaborative. The City saw an excellent opportunity to implement KPI #154 by applying the supportive and facilitative mindset we have applied to alternative fuel infrastructures toward Electric Vehicle (EV) charging infrastructure by engaging the public as to use and potential placement of charging locations.

City staff developed an exercise known as the "Plug-(p)in Maps" where members of the public can "plug-in" a pin into aerial maps of the city to reflect their preferred location for EV chargers. This exercise was completed at various environmental functions, such as the 2011 Torrance Environmental Fair and the 2011 Honda Employee Earth Day Fair, with much success. In an effort to expand public outreach, the exercise was formatted to the City's web-site to allow individuals to submit their suggestions beyond organized events. The suggestions received to date have been compiled on this map and are available for your review at <http://www.torranceca.gov/22841.htm>.

Through these exercises, staff discovered that the largest concern held by survey participants has been that of "Range Anxiety"; which is a commonly used reference for a concern over mileage an EV vehicle can sustain before needing to be re-charged. Publicly accessible EV-infrastructure, at least in the South Bay, is considerably limited given the number of EV vehicles on the road and available for sale. In meeting with representatives of Honda, Toyota and GM, they too expressed a concern of finding ways to overcome such issues potential buyers may have that could prevent them from buying EVs. The matter, in the judgment of staff, reduces to the fact that without the facilitation of EV charging locations at multiple, highly visible and popular locations throughout the region, on both public and private facilities, drivers will not quickly overcome "Range Anxiety" concerns, automakers will not reach their sales objectives and the South Bay will not achieve the vehicle emission reductions the City is hoping to achieve.

Several factors, such as being the Business and Commercial "Hub" of the South Bay and having the largest resident and day-time populations, place Torrance in a unique position from which to facilitate EV infrastructure and reduce "Range Anxiety" concerns. Staff plotted suggested locations from the "Plug-In" map exercise and found that there was interest for EV charging stations throughout the City. Several sites in town had numerous suggestions for placement of EV infrastructure that gave key insight as to how the chargers may be used and by whom. Large employers (Automaker offices, Financial Center, Robinson Helicopter and the Civic Center) and various business park locations would likely be used by employees commuting in to work and would likely experience longer charging periods throughout the day. Popular shopping (Del Amo Mall, Torrance Town Center, and Downtown Torrance), recreational (Torrance Beach, Columbia and Wilson parks) and civic destinations (Civic Center and Madrona Marsh)

will likely be used by local South Bay residents looking for a “top-off” charge to help extend their mileage range. Installation of appropriate charging facilities at such locations, allows for EV infrastructure to become highly visible and available throughout the City, allowing for a “lily-pad” like concept of EV charging to be possible and a potential goal of never being more than one mile away from an accessible charging station anywhere in town. In addition to working internally toward the “1 Mile, 1 Charger” goal, staff has also discussed with the South Bay Environmental Services staff the concept. By coordinating such activities, staff hopes to provide recommendations for placement, use and operation of the charging units to installers, as well as coordinate functions such as permitting requirements and inspections to be standardized throughout the South Bay and allow for an EV hub to be created.

While engaging the public and automakers, staff also met with representatives of various City Departments to discuss operational issues that may arise from the installation of EVs, such as signage, permitting/inspection, enforcement and the preferred standards for publicly accessible EV-charging. Although there is hope for a broader EV-plan for the entire South Bay, staff did identify several suggested guidelines for EV equipment and Torrance Municipal Code sections that would need to be amended so as to provide better direction to the property owners. Staff also suggest criteria that would prevent obstructions to individual homeowner from installing EV-infrastructure and how to accommodate installation of said infrastructure at the most efficient cost point; new construction projects. These items, listed below, will be presented in a brief PowerPoint presentation the evening of the Commission meeting to allow for discussion by the Commission. Staff notes that proposed Municipal Code modifications would need to be forwarded to the Planning Commission for review and direction prior to ultimately being presented to the City Council for consideration.

Definitions

- Electric Vehicle/A vehicle that operates, either partially or exclusively, on electrical energy from the grid, or an off-board source, that is stored on board for motive purpose. Electrical Vehicle includes the following:
 - Battery Electric Vehicle (BEV)/a vehicle that operates exclusively on electrical energy from an off-board source that is stored in the vehicle's batteries and produces zero tailpipe emissions or pollution when stationary or operating.
 - Plug-in hybrid electric vehicle (PHEV)/a vehicle that (1) contains an internal combustion engine and also allows power to be delivered to drive wheels by an electric motor; (2) charges its battery primarily by connecting to the grid or other off-board electrical source; (3) may additionally be able to sustain battery charge using an on-board internal combustion-driven generator; and (4) has the ability to travel powered by electricity.
 - Neighborhood electric vehicle/a self-propelled, electrically powered four-wheeled motor vehicle whose speed attainable in one mile is more than 20 miles per hours and not more than 25 miles per hour.

- Medium-speed electric vehicle/ a self-propelled, electrically powered four-wheeled motor vehicle equipped with a roll cage or crush proof body design, whose speed attainable in one mile is more than 25 miles per hours but not more than 35 miles per hour.
- Electric Scooters and Motorcycles/any two-wheel vehicle that operates exclusively on electrical energy from an off-board source that is stored in the vehicle's batteries and produces zero emissions or pollution when stationary or operating.
- Electric Vehicle Charging Levels are the standardized indicators of electrical force, or voltage, at which an electrical vehicle's battery is recharged. The terms Level 1, 2, and 3 are the most common EV charging levels, and include the following specifications:
 - Level 1 is considered a "Slow Charging" station and typically requires a 15 or 20 amp breaker on a 110 or 120-volt AC circuit and standard outlet.
 - Level 2 is considered a "Medium Charging" station and typically requires a 40 to 100 amp breaker on a 220 or 240-volt AC circuit.
 - Level 3 is considered a "Fast or Rapid Charging" station and typically requires a 60 amp or higher dedicated breaker on a 480 volt or higher three-phase circuit with special grounding equipment. Level 3 charging uses an off-board charger to provide the AC to DC conversion, delivering AC directly to the car battery.
- Electric vehicle charging station/ a public or private parking space located together with a battery charging station which permits the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electrical vehicle.
 - Electric vehicle charging station – restricted/an electric vehicle charging station that is (1) privately owned and restricted access (e.g., single-family home, executive parking, designated employee parking) or (2) publicly owned and restricted (e.g., fleet parking with no access to the general public).
 - Electric vehicle charging station – public/an electric vehicle charging station that is (1) privately owned and restricted access (e.g., single-family home, executive parking, designated employee parking) or (2) publicly owned and restricted (e.g., fleet parking with no access to the general public).
- Electric vehicle infrastructure/structures, machinery, and equipment necessary and integral to support an electric vehicle, including battery charging stations, rapid charging stations, and battery exchange stations

- Electric vehicle parking space/any marked parking space that identifies the use to be exclusively for the parking of an electric vehicle and is equipped with an electric vehicle charging station.
- Non-electric vehicle/any motor vehicle that does not meet the definition of “electric vehicle”

Code Changes

- Division 9, Chapter 1, Article 2/Definitions: Insert Definitions above (Proposed TMC Sections 91.2.170 – 91.2.175).
- Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: Restriction for only EV's to park in EV charging station parking spaces (Proposed TMC Sections 93.4.27).
- Division 9, Chapter 3, Article 5/Development Standards for Residential Parking Areas: A prohibition on any restrictions which prevent the installation of EV parking infrastructure in residentially developed properties by a Home Owners Association. These amendments also include the ability for the HOA to recover expenses associated with power usage and maintenance of the units (Amendment to TMC Sections 93.5.10).
- Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: An EV Parking space requirement for new construction or properties significantly remodeled, as defined in TMC 231.1.2, and which provide 50 or more parking spaces, shall be required to provide and maintain at least 2% of available parking spaces as Electric Vehicle Parking Spaces equipped with either Level 2 or Level 3 charging infrastructure (Proposed TMC Sections 93.4.27).
- Division 9, Chapter 3, Article 4/Commercial Industrial parking regulations: Required Signage specifications for Electric Vehicle Parking Spaces, to clearly mark space for Electric Vehicle parking only, Contact information for charging station, Hours of Operation of the Charging Station, Charger Specifications and Towing information as required by the California Vehicle Code (Proposed TMC Sections 93.4.28).
- Division 9, Chapter 3, Article 5/Development Standards for Residential Parking Areas: A prohibition on any restrictions which prevent the installation of EV parking infrastructure in residentially developed properties by a Home Owners Association (Amendment to TMC Sections 93.5.10).
- Division 9, Chapter 3, Article 5/Development Standards for Residential Parking Areas: That new residential construction involving at least 5 units shall be required to be provide sufficient electrical supply to support a Level 2 charger within designated parking areas of at least 20% of the units. This section also restricts the placement of charging units within the R-1 Zone to be provided

either within the garage or affixed to permitted structures on the property (Proposed TMC Sections 93.5.17).

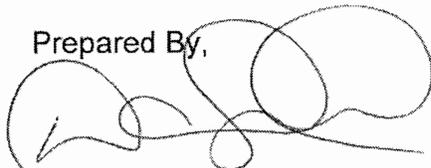
Conclusion

The City efforts with regards to alternative fuels and fuel efficiency are not to promote one-form of fuel over another. In fact, efforts illustrated above to facilitate the development of an EV charging infrastructure throughout the City is merely to ensure that the technology is available and accessible to those that have chosen to drive EVs. In addition, increasing accessibility to alternative fuels supports multiple corporate citizens that design, produce, market and sell such products within Torrance. The Honda partnership, and the relationship the City enjoys with both Toyota and GM, present an excellent opportunity to better comprehend the demands for EV cars and EV infrastructure, while supporting the efforts to reduce emissions and support our Torrance's corporate citizens. In an effort to further City Council objectives to reduce Torrance's Municipal, and overall community carbon footprint, Staff recommends approval of the recommended code modifications and forwarding to the Planning Commission and City Council.

The Commission at this point has several options in which to direct Staff. The Environmental Commission may:

- Direct Staff to conduct further research in a specified area;
- Direct Staff to modify, add, or eliminate sections of the discussed Municipal Code modifications and forward to the Planning Commission and the City Council; or
- Direct Staff to forward the above listed recommendations to the Planning Commission and City Council with the Support/Denial of the Commission;

Prepared By,



Danny Santana
Senior Planning Associate

Respectfully Submitted,



Linda Cessna
Deputy Community Development
Director

Attachments:

1. Torrance Strategic Plan 2008 Excerpt Action, "Stewardship of the Environment"
2. Torrance Strategic Plan Action Plan 2010, "Stewardship of the Environment"
Improve Air Quality KPI Excerpts



Stewardship of the Environment

In 2008, Stewardship of the Environment rose to the level of a Strategic Priority. This Strategic Priority addresses the need for Torrance to be aware of, and proactively respond to, a wide variety of issues concerning the physical environment, from the micro and local, to the macro and global. Understanding and addressing the cumulative impacts of individual, local, and regional activities assures that Torrance will be a leader in minimizing negative impacts on our environment. We see this Strategic Priority as both an important issue to address to preserve our quality of life, and an opportunity for Torrance to be a leader in encouraging and facilitating individual, local, regional, and commercial solutions for this emerging global issue.

- All of the data collection efforts for the 2008 Strategic Plan update indicated a growing awareness of the importance of issues relating to the environment. From local issues related to recycling efforts and storm water run-off, to regional air quality impacts from industry and transportation, to the effects of global climate change – all the data affirmed the wisdom of making Stewardship of the Environment a Strategic Priority for Torrance.
- Previous iterations of the Strategic Plan addressed various aspects of environmental issues in goals and sub-goals. These have been gathered under this new Strategic Priority or left to echo the interrelatedness of all the Strategic Priorities where appropriate.

GOAL	Improve air quality.
✓ Sub-goal:	Reduce airborne particulate matter through efforts such as regulation of “leaf blowers,” construction site control, and elimination of unnecessary idling of diesel and other engines.
✓ Sub-goal:	Synchronize traffic signals to reduce commuter idling.
✓ Sub-goal:	Continue to convert vehicle fleets to alternative fuels.
✓ Sub-goal:	Buy locally to minimize transportation pollution, and buy locally produced products when possible.
✓ Sub-goal:	Reduce carbon dioxide and greenhouse gas emissions.
✓ Sub-goal:	Increase green space / belts and tree planting where appropriate.
✓ Sub-goal:	Encourage the development and use of alternative fuels and energy sources.
✓ Sub-goal:	Promote the use and accessibility of public transportation.
✓ Sub-goal:	Enhance enforcement of local air quality regulations, and assist / cooperate with regional AQMD enforcement efforts.

GOAL	Sustain high quality beach and ocean areas.
✓ Sub-goal:	Identify and mark all storm drains.
✓ Sub-goal:	Promote education on the importance of reducing and controlling run-off.
✓ Sub-goal:	Cooperate / coordinate with regional organizations for clean water (e.g. Heal the Bay, Surfrider Foundation, Water Quality Board, National Resource Defense Council).
✓ Sub-goal:	Cooperate / coordinate with Los Angeles County for a safe, accessible, clean and litter free beach.

Goal #3	Sub-Goal	KPIs (Santana)																
Improve Air Quality	7. Encourage the development and use of Alternative Fuels and Energy Sources	<p data-bbox="212 653 245 1472">Indicator: Incentives for the incorporation of Green Parking stalls</p> <p data-bbox="253 884 293 1472">Measure: Parking ordinance proposed revision</p> <p data-bbox="310 1367 342 1472">Target:</p> <table data-bbox="358 968 488 1461"> <tr> <td></td> <td><u>2010</u></td> <td><u>2011</u></td> <td><u>2012</u></td> </tr> <tr> <td>Draft ordinance</td> <td>Q2</td> <td>Q4</td> <td>--</td> </tr> <tr> <td>Council policy action</td> <td></td> <td></td> <td>--</td> </tr> <tr> <td>KPI development</td> <td></td> <td></td> <td>Q1</td> </tr> </table> <p data-bbox="513 149 748 1472">Narrative: Green Parking stalls are those reserved for vehicles that are either hybrid, alternative fuel or used for carpooling (herein 'Green Cars'). The intent of a modified parking ordinance is to closely study whether the use of 'Green Cars' can be promoted to developments with incentives. Rather than monetary in nature, the incentives would be built into the project's parking requirements. Examples of potential incentives would be establishing preferred parking for 'Green Cars', parking credits for projects within a certain distance of bus stops and/or minimum bike rack and changing room to building square footage ratios for new developments.</p>		<u>2010</u>	<u>2011</u>	<u>2012</u>	Draft ordinance	Q2	Q4	--	Council policy action			--	KPI development			Q1
	<u>2010</u>	<u>2011</u>	<u>2012</u>															
Draft ordinance	Q2	Q4	--															
Council policy action			--															
KPI development			Q1															

Indicator: Provide alternative vehicle fueling/charging infrastructure at City Facilities for City & Public Use (when feasible)
(154)

Measure: Number of alternative fueling options available

Target: Have at least 3 alternative fueling/charging City facilities for City & Public Use by 2012

City Facilities	Base			
	2009	2010	2011	2012
Bio-Diesel Fueling Station	1	1	1	1
Electric Car Charging Station	--	--	--	X
Propane Fueling Station	1*	1*	1*	1*
Compressed Natural Gas	--	--	1	1

*Currently available for City Use only

Narrative: A critical element to the future expansion of the alternative fuel market is the infrastructure required to sustain the fueling needs. In the 1990s, the city participated in an Electric Vehicle program through a grant with the Air Quality Management District. This program included the installation of a Charging Station and designated parking spaces at both the Civic Center and the City Yard. These stations are no longer in service as the vehicles they were intended to serve were returned at the termination of the program. With renewed market interest in electric vehicles the City may look at replacing the outdated stations with units that can accommodate new electric cars for public use.

Similar to the existing Bio-Diesel Cooperative already in operation at the City Yard, the City is currently pursuing a Compressed Natural Gas (CNG) station that will be open to the public along the City Yard frontage to add to the CNG infrastructure currently available at both Toyota and Honda Head Quarters, as well as the currently under construction Shell project at the northwest corner of 190th Street and Gramercy Avenue. The City also has Propane fueling within the City Yard that is currently limited to City fleet operations due to location of the fueling station, operational safety and access concerns.

<p>Indicator: Facilitate the entitlement and permitting of Alternative fueling stations and infrastructure improvements⁽¹⁵⁵⁾</p> <p>Measure: Turnaround from Land Use Submittal to Public Hearing, and Building Permit Submittal to Issuance</p> <p>Target: Reduce Land Use/Building Permit Processing* timeframe by 50% from 2009 baseline (*when not involving environmental review)</p>																													
<p style="text-align: center;">Base</p> <table border="1"> <thead> <tr> <th></th> <th><u>2009</u></th> <th><u>2010</u></th> <th><u>2011</u></th> <th><u>2012</u></th> <th><u>2013</u></th> <th><u>2014</u></th> </tr> </thead> <tbody> <tr> <td>Land use process time (months)</td> <td>1.5</td> <td>#</td> <td>#</td> <td>#</td> <td>#</td> <td>#</td> </tr> <tr> <td>Building permit process time (months)</td> <td>4</td> <td>#</td> <td>#</td> <td>#</td> <td>#</td> <td>#</td> </tr> <tr> <td>Summed average (months)</td> <td>2.75</td> <td>-10%</td> <td>-20%</td> <td>-30%</td> <td>-40%</td> <td>-50%</td> </tr> </tbody> </table>		<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	Land use process time (months)	1.5	#	#	#	#	#	Building permit process time (months)	4	#	#	#	#	#	Summed average (months)	2.75	-10%	-20%	-30%	-40%	-50%	<p>Narrative: An expanded use of alternative fuel vehicles can not take root in the South Bay without the convenient ability to access the alternative fuel itself. Expediting the review of such developments, while still maintaining proper environmental oversight, can ensure that such sources and infrastructure can be centered in Torrance for Torrance residents and companies.</p>
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>																							
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