



SIERRA CLUB

LONE STAR CHAPTER

August 21, 2023

Transportation., Technology, and Infrastructure (TTI) Committee, Houston City Council
Re: City of Houston Construction Modernization Code Project
From: Cyrus Reed, Conservation Director, Lone Star Chapter, Sierra Club,
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We support the code adoption, though Council should consider making EV-ready options mandatory

The Lone Star Chapter, as well as the local Houston Regional Group of the Sierra Club is pleased to offer our support for adoption of the suite of 2021 ICC and UPC codes that is being presented by city officials to the committee on August 24th. The Sierra Club was an active participant in the community development process, participating in both a technical committee on energy codes and a member of the overall community oversight committee. While not all of our proposals were ultimately accepted, we are extremely pleased with the open and democratic process, and believe that this set of codes will make Houston more resilient, save consumers money through gas, electric and water savings, and better prepare Houston for new technologies and the climate extremes we are already facing. The City of Houston should be proud of the long hours put in by staff and stakeholders, as well as the collaborative approach by staff with stakeholders to make this code one of the leading codes in the state.

Houston has a tremendous opportunity to be a leader on new resilient construction codes that will assure that new buildings are energy efficient, water efficient, and flood-resilient. We are supportive of adoption of the base 2021 IBC, IRC, IECC, UPC, Mechanical Code, and other codes. Building residential and commercial buildings to these codes will save energy and water, make buildings more resilient to floods.

Adoption of the ASCE-7-22 to the base 2021 residential code is historic

One of the proposed amendments being considered is adoption of the ASCE 7-22 Update to the 2021 Residential Code. The City of Houston could have considered the ASCE 2016, but those standards are already five years old and are not as protective as the ASCE 7-22 version. This American Society of Civil Engineers code is specifically designed to make new residential construction more resilient to extreme weather such as high winds, tornadoes and rain loads and Houston would be the very first city in Texas to adopt this. This should also help Houston better be able to take advantage of federal funding opportunities by showing the city not only adopted the latest 2021 codes - but also the ACSE 2022-7-22 adoption. This will better protect roofs, windows and other physical attributes of buildings, which should also help with rising insurance rates in the Houston area.

Adopting latest plumbing code is also positive

The Adoption of the 2021 UPC (Uniform Plumbing Code) is also supported by the Sierra Club, including the important local amendment to only allow high efficiency toilets and toilets that use an average of 1.28 gallons per flush (as opposed to current 1.6 gallons of water per flush requirement) Every drop counts! The city has proposed to adopt the latest code and appreciate the attempt to make sure the 2021 UPC is better aligned with the other IPC codes, such as the insulation standards for the energy code.

Sierra Club supports adoption of the 2021 IECC and Chapter 11 of the 2021 IRC for More Energy Efficient buildings

Many cities, including Austin and San Antonio, have already adopted the 2021 energy codes, while Dallas recently adopted them this summer. The 2021 IECC residential code includes some required extra energy efficiency savings that would be of tremendous benefit to Houstonians who are facing increasing utility costs. While the state itself through SECO has yet to adopt the 2021 code, due in part to a statutory conflict, making sure our major cities do will help spur other cities to do the same and also put Houston in line for competitive grants from the DOE available through the IRA and IIJA. Both DOE-supported national laboratory and the Energy Systems Laboratory at Texas A & M have conducted analysis and found that adoption of the 2021 energy codes are significantly more energy efficient than the 2015 and 2018 codes. As an example, an

analysis¹ conducted by the Pacific National Laboratory found that a home built to the 2021 IECC would be 10% more energy efficient measured in Energy Unit Intensity and save 8.93% in energy costs in the Houston area (Climate Zone 2). A similar analysis by the ESL found that an average sized home complying with the 2021 IECC would also use about 10 percent less energy than the same sized home built to the 2015 IECC.² ESL has in fact recommended to the State Energy Conservation Office that the state adopt the 2021 standard as a way to save energy, improve air quality and save money. Importantly, the 2021 energy code includes a required 5% energy savings reduction add-on - builders have a choice of several option on how to reach this reduction and the code before you today include that required addition.

Sierra Club does not object to a more flexible sampling approach for multi-family housing

Representatives of the building community have proposed some slight modifications to the 2021 IECC and energy chapter of the 2021 IRC that will continue to allow sampling of certain multi-family properties to assure compliance with energy provisions. The Sierra Club agrees that these slight modifications do not impact the energy efficiency requirements, but will reduce cost and red-tape. The city should assess whether the sampling requirements are effective as the new code is implemented and can always change the approach should compliance issues be observed.

Sierra Club supports ERI alternative compliance path for single-family homes

We are also supportive of adoption of a separate ERI (Energy Rating Index) compliance path that is not only more flexible for builders, but incorporates consistency with state law on allowing ERI compliance. Under this provision, builders that could meet a 59 ERI would comply with the provisions of the 2021 IECC through August of 2025, but then buildings would have to meet a more robust ERI that would be ratcheted down over time to 55. ***We think some language should be added to make it clear that builders choosing the ERI path still must meet basic building envelope requirements, as required by HB 3215 from the 87th Legislative session. We believe this is implicit in the code but believe that adding a sentence to the code would make this clearer. Specifically, the language in the bill states that the alternative compliance path to the energy codes still required developers to assure that:***

¹ Available here -

https://www.energycodes.gov/sites/default/files/2021-07/2021_IECC_Final_Determination_AnalysisTSD.pdf, See Table ES-1 on page iii.

² See stringency analysis here -

<http://esl01.wpengine.com/wp-content/themes/ESL2016/docs/Stringency%20Residential%202021.pdf>

(1) the building meets the mandatory requirements of Section R406.2 of the 2018 International Energy Conservation Code; and

(2) the building thermal envelope is equal to or greater than the levels of efficiency and solar heat gain coefficient in Table R402.1.2 or Table R402.1.4 of the 2018 International Energy Conservation Code.

Air Barrier/Insulation Requirement is Good

We support an amendment offered in the code (R402.2.13 Air barrier requirement) to required insulation to be in substantial contact with an air barrier on all sides, which have been shown to increase energy savings in residential properties. We are supportive.

Solar-Ready Codes

The City of Houston has been a leader on requiring solar-ready codes, being along with Austin, one of the first cities to require some solar-ready provisions as part of the energy code.

We are pleased that the 2021 IECC proposed to be adopted includes mandated residential solar-ready provisions. New homes and townhouse developments will have to have some space on the panel, some minimum conduit and areas on the roof for future solar, making it easier for consumers to add solar provisions.

While we pushed for inclusion of the solar-ready code for commercial buildings, there did not appear to be support from other stakeholders for including a required solar-ready provision for commercial buildings. ***While the Sierra Club would support making this a mandatory requirement***, we do appreciate the commercial solar-ready code being included as an option for builders.

Assuming that the commercial solar-ready provisions are not made mandatory, Houston could consider ways to encourage commercial builders to make their buildings solar-ready (or actually add solar). Thus, expedited permitting, lower permit fees, or direct incentives are all ways the City of Houston could consider encouraging developers to make buildings solar or solar-ready. Making buildings solar-ready at the front ends will lead to more solar development which will ultimately save money for consumers.

EV-Ready

We believe there is a real opportunity to move Houston forward by also adopting EV-ready provisions. Electric vehicles are increasing in popularity and projections suggest that within the next 10 years, fifty percent of all new vehicles will be electric.

Unfortunately, there was not support among stakeholders for making new buildings be EV-ready. Again, while a proposal to add more robust EV-ready requirements supported by the Sierra Club, including for both residential and commercial buildings, was not supported by stakeholders, we are very appreciative that the City has included an EV-ready commercial provision amendment and an EV-ready residential provision as an option for builders. Stakeholders from the building community did agree that publishing these appendices could help spur more developers to build buildings that can easily incorporate EV charging and spaces for EV-parking. Again, the City could help promote the development of EV-ready commercial and residential properties as part of its ongoing process as well as in training for the code implementation process.

The Sierra Club would support making these EV-ready provisions mandatory, but do appreciate the codes including the EV-ready appendix as an option for builders. As an example, we could provide expedited permitting or reduced fees for such buildings. Thus, we would not be opposed to incentives or regulatory flexibility to help promote EV-ready buildings.

Electric-Ready

There was not support for assuring that new residential buildings would also be electric-ready, easily able to add electric appliances and heat pumps. While builders will continue to have the option to make all-electric buildings, or indeed building that continue to utilize gas heating and appliances, we thought it would be worth it to encourage builders to make buildings that would require the addition of nearby outlets to dryers and stoves so that future residents could easily take advantage of all electric-appliances.

Looking forward - set up a pathway for quicker adoption of 2024 codes

Our understanding is that the 2024 ICC codes including the 2024 IECC will be published this fall. These new codes do include more robust EV-ready, Solar-Ready and Electric-ready provisions, as well as additional energy savings, and the City of Houston should consider a relatively fast process for consideration and adoption of the 2024 codes. The process that was put in for the 2021 adoption took roughly a year, and has been extremely positive, so we think it might be possible to get the 2024 adoption process in a similar time frame. Putting in an expectation now for fast adoption and implementation will help prepare Houston for a changing climate and new technologies

like EVs, solar and storage and heat-pumps. We also believe that future codes could address issues like smart thermostats, and required demand response provisions that were not advanced in these codes.

The Sierra Club appreciates the opportunity to make these brief comments on the proposed 2021 codes. We are very supportive of the process that was implemented, and are pleased with the results of the collaboration with city staff and stakeholders. We support all provisions being considered, including the more resilient provisions of the ASCE-7-22 for residential construction, flexibility on sampling of apartments, an ERI compliance option, improved toilet efficiency and required air barriers for improved energy efficiency. We very much support the inclusion of a required solar-ready provision for homes, but would also support mandatory solar-ready provisions for commercial buildings, and EV-ready codes for residential and commercial buildings. We do appreciate publishing the appendices as part of the codes so that even if it not made mandatory, we hope that as part of the training, incentives or regulatory flexibility, EV-ready and solar-ready buildings can be prioritized going forward.

We would also ask the city to begin a review of the 2024 codes once published later this fall, and to have a quick implementation timeline with a process similar to the one that was implemented for this adoption process.