



Memo –

To: Cranston City Plan Commission
From: Joshua Berry, MURP, AICP - Senior Planner / Administrative Officer
Date: September 30, 2019
Re: Staff Memo for Ordinance #8-19-07 Entitled “Zoning” (Solar Energy Systems)
Ordinance & 8-19-08 Entitled “Zoning” (Schedule of Uses)

I. Introduction

The Planning Department and Plan Commission have been working on a comprehensive rewrite of the City’s solar regulations since the 270-day solar moratorium was unanimously approved by Council in January and subsequently signed by the Mayor on February 4th. A public forum, multiple workshops with the Plan Commission and a joint Council/ Plan Commission workshop have been held. Staff has presented information, analysis, maps, findings, and draft ordinances at numerous iterations throughout the process.

This memo attempts to evaluate whether solar energy systems (SES’s), under the regulatory scheme written into the proposed ordinances, can provide the City with a viable and responsible solution to strive towards sustainability with careful regard to the impacts of solar as a land use in the City.

Although this work product is based on previously presented ideas and materials, it will both synthesize and expand on the major findings and rationale behind the proposed ordinances. Staff is recommending one substantive but simple change to the Ordinance #8-19-07 as proposed, a reduction of the allowed Tree Disturbance Maximum for Principal SES’s in A-80 & S-1 zones from 60% to 30%. This change is intended to increase the protections for the residents, tree canopy and environment by further disincentivizing the loss of forest and habitat in Western Cranston. The proposed change is discussed in further detail on page 7 of this memo.

II. Proposal Summary

Ordinance #8-19-07 (Solar Energy Systems) and Ordinance #8-19-08 (Schedule of Uses) are the proposed solar ordinance rewrite ordinances as submitted by the Plan Commission and City Planning Department, sponsored by Mayor Fung, Council President Farina and Council Vice President Favicchio. These ordinances complete the charge of the solar moratorium (Ordinance 12-18-01) to study and recommend

regulations that comprehensively address solar energy as a legally permitted land use in the City.

The Ordinances seek to address the concerns raised by Cranston residents while also maintaining a pathway for the City to responsibly address renewable energy production and the City's carbon footprint. Ordinance #8-19-07 proposes and defines three categories (see page 3) of solar energy systems (SES's) so that it may apply performance standards and other requirements for each category respective to the zoning districts which they may be sited.

The overall approach of the ordinances is to be restrictive in proportion to any given SES's anticipated impacts. The regulations are largely permissive on rooftop, parking canopy, building integrated and self-supplying systems in order to maximize solar energy production on already disturbed sites. Ground-mounted systems accessory to a principle use are allowed in industrial, high intensity commercial and with highly restrictive regulations in A-80 (intended to be accessory to farms). All principal-use systems and those exceeding permitted accessory land area of a site are allowed in industrial zones, as well as with a special use permit in A-80 and S-1 zones under a strict regulatory framework. Consistent with Ordinance #8-19-07, Ordinance #8-19-08 proposes to amend the Use Table to by using the solar categories defined and regulated in Ordinance #8-19-07, and changes utility scale SES's (Principal SES's) from being an allowed use under the current ordinance in A-80 and S-1 to requiring a special use permit.

III. Planning Analysis

The Planning Department understands that there is substantial public opposition to the continuation of solar as a land use in A-80 and S-1, particularly utility-scale projects. Residents have been vocal on this issue, committed to the protection of Western Cranston, its inhabitants, and the environment. The City owes these dedicated Cranstonians a debt of gratitude as they have sacrificed countless hours to see that this issue is handled responsibly. Staff has found that many of its findings and values largely align with the findings and values expressed by public comment. The following is a non-exhaustive list of shared findings and values:

- The City needed a moratorium to reevaluate/improve its solar regulations;
- Utility-scale solar should not be a by-right use in A-80 and S-1 zones;
- The residents of Western Cranston should not have to fear that their properties will be devalued by solar development;
- The rural character of Western Cranston should be preserved;
- The City must protect its tree canopy, wetlands, topsoil, habitats and other natural resources;
- Screening of ground-mounted solar installations is absolutely critical and should involve neighborhood input;
- The screening of Hope Farms Solar is inadequate;
- Barbed-wire fencing around SES's should not be permitted in residential neighborhoods;

- The impacts caused by the interconnection for SSRE Gold Meadow Farm Solar were not properly anticipated and should be avoided;
- Topsoil should be undisturbed to the greatest extent possible and remain onsite;
- The City should responsibly pursue renewable energy production;
- Solar should be incentivized on rooftops, canopies, gravel pits and other previously disturbed sites.

For this ordinance to have the intended desired effect, it must reflect these values and findings among others that are important to the City. The regulations proposed in the ordinance were written to address comments, concerns, and values expressed by Cranston residents.

The first step in the regulatory approach was to categorize and define different SES's in a simple fashion which can be easily understood and regulated. SES's vary vastly in their size and impacts, so it is necessary to regulate each type respectively. Below are the three proposed types of SES.

1. **Minor Accessory SES**
 - Roof-mounted & building-integrated & Solar Canopies
 - Self-serving accessory ground-mounted (produce < 125% of site usage)
2. **Major Accessory SES**
 - Not a Minor Accessory SES
 - Must be accessory to a principal use
 - Solar Lot Coverage does not exceed the allotted amount in that zone
3. **Principal SES**
 - Not a Minor or Major Accessory SES and/or
 - Solar Lot Coverage exceeds the maximum allowed for a Major Accessory SES

Once the SES types had defined categories, the next step was to address where they would be permitted uses, not be allowed, or require a special use permit. This is, of course, the main point of controversy regarding solar in Cranston. The goal of siting SES's is to maximize clean energy generation *with careful consideration to minimizing impacts*. Rooftop, landfill, canopies, brownfield and other SES's on disturbed sites have largely received unanimous support, juxtaposed to utility-scale ground-mounted SES's which have generated opposition due to their impacts. This reality is not lost in the proposed ordinances.

Staff believes that **the critical issue is whether the City can responsibly address its carbon footprint and sustainable energy issues without *any* impacts to undisturbed sites**. Many believe that the City has ample rooftops, parking lots, landfills, brownfields, gravel pits, and vacant and underused developed space that solar panels could occupy to meet the City's renewable energy needs. If found to be true, staff would support the idea that the trade-offs of utility-scale ground-mounted SES's are not justified. This matter had not yet been comprehensively studied, with much of the debate relying on conjecture (with all due respect to everyone – it's completely understandable in the absence of a reliable study). Staff is pleased to report that the Rhode Island Office of Energy Resources have contracted Synapse to conduct a *statewide* capacity analysis on this particular issue. The kickoff meeting with stakeholders was held on 9/24/19 with

a final report anticipated to be submitted in March of 2020. However, due to the time limitations of the moratorium, the City could not wait for the study to be released and so staff undertook a capacity and mapping analysis to illuminate the current status of Cranston's electrical energy profile. The findings, images and parcel level analysis can be found in the *Solar Ordinance July 18th Joint Workshop Staff Presentation* file found [here](#). The following is a summary of the findings:

- Rooftops – Current MW = 2.87 Anticipated MW = 1-10
- Solar Canopies – Current MW = 0 Anticipated MW = 0-3
- M-1 & M-2 zones – Current MW = 3.1 Anticipated MW = 12.5*
- S-1 zone – Current MW = 0 Anticipated MW = 0
- A-80 zone – Current MW = 42.1 Anticipated MW = ?
- Total – Current MW = 48.07 Anticipated MW = ?

**Figure represents the unlikely scenario that ALL potential sites in the City were fully developed.*

Ultimately, **staff finds that the City does not have the capacity to responsibly strive towards a sustainable carbon footprint fully relying on rooftops, canopies, brownfields, and industrial zones.** The only gravel pit in Cranston is in A-80, which staff recommends as a viable site, and would be eliminated as a potential site if solar is banned in A-80.

Further corroborating staff's finding, National Grid provided data received on 9/24/19 which indicates that the entirety of **the City of Cranston used 473,757 MWh of electric energy in 2018**, up from 464,533 MWh in 2017. To better understand the City's electrical energy profile, staff offers the following calculation:

- 48 MW = total solar energy with Master Plan approval in Cranston
- 473,757 MWh = Cranston's consumed electricity in 2018
- Ground-mounted solar produces energy at 13% of its approved capacity (OER, <http://www.energy.ri.gov/renewable-energy/solar/learn-about-solar.php>)
- 48 MW of approved solar production capacity = 54,662 MWh
[Approved generating capacity (48MW) x conversion rate (13%) x 365 days/year x 24 hours/day]
- 54,662 MWh is **11.54%** of 473,757 MWh

Therefore, the City of Cranston currently generates or has master plan approval to be 11.54% sustainable in terms of its electrical energy. The City would need approximately **416 MW** of approved solar production to be have a 100% sustainable electricity profile **which would mean an additional 368 MW** from where it stands today. To put this in perspective, the average residential rooftop solar installation is sized for 5kw (U.S. EIA, <https://www.eia.gov/todayinenergy/detail.php?id=31452>) and generates 5,694 kwh (or 5.69 MWh). Cranston currently has a total of 2.87 MW on rooftops in all zones, the equivalent of roughly 574 residential rooftop systems. Whereas the state signed up **733** residential rooftop systems under the Solarize program, **67** from

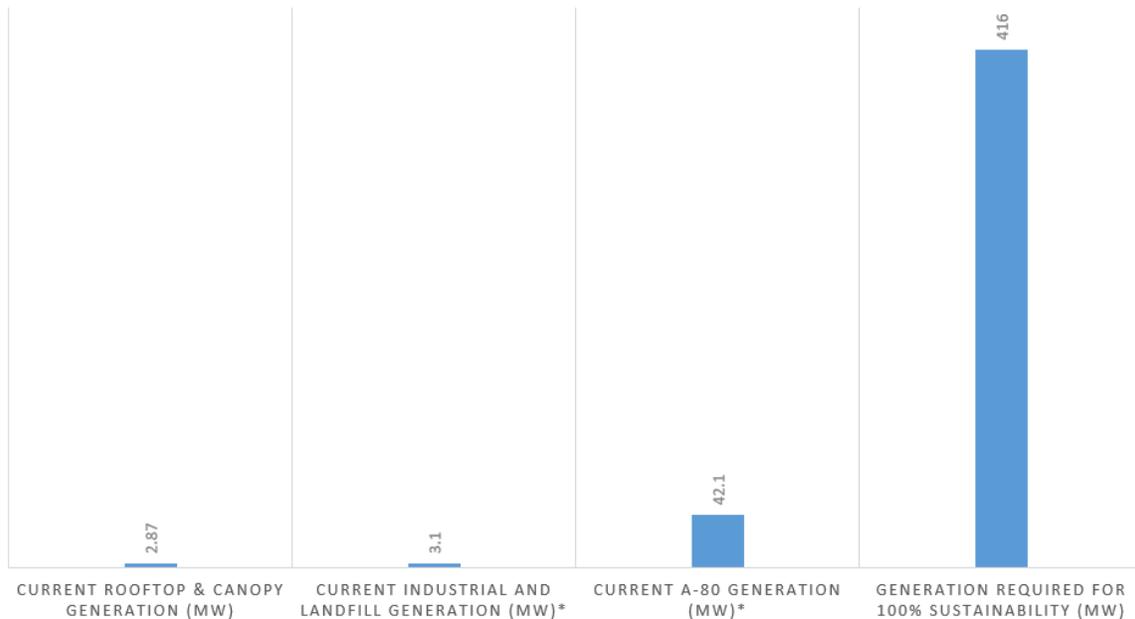
Cranston, the City would conservatively need to install an additional **73,655 residential rooftop installations to bridge the gap** between the clean electricity that is currently generated on all rooftops

Residential Rooftop SES's in Cranston

574 approx. # current rooftop SES's
73,655 approx. # rooftop SES's needed to offset electric consumption

and the amount of electricity consumed by the City in 2018 (this assumes “optimal” orientation of each installation and does not take into account commercial or industrial rooftop solar production, which of course would be a factor – but staff was unable to find an average for commercial or industrial rooftops). There are approximately 31,000 households in in the City of Cranston, many of the City’s 81,000 inhabitants living in multifamily structures. It would be reasonable to doubt the solar industry’s capacity to install the number of small projects required to move the needle in a significant manner. Therefore, **it should not be lost that economies of scale are going to be required to effectively close the massive gap in reducing our carbon footprint.** Of course, staff is not suggesting that 100% clean electricity is the City’s *current* target, but we need to be moving in the right direction with a sense of urgency.

CRANSTON – SOLAR ENERGY & SUSTAINABILITY



*Figures include generation with master plan approval, not actual current supply to the grid.

Cranston’s available options for renewable energy solutions are limited, and even available options such as wind turbines may not be viable as their visual impacts *cannot* be mitigated, particularly in Cranston as its industrial zones abut residential zones. Purchasing renewable energy produced elsewhere is certainly an option that the City can and should explore. However, it is important to acknowledge that the City itself is only one consumer and only accounts for a fraction of the total energy consumption. Production of renewable energy directly cuts carbon emissions by reducing the

production of unsustainable alternatives whereas purchasing renewable energy, although it does support the renewable energy industry, does not directly reduce the amount of unsustainable energy being produced.

Unless Cranston begins to utilize other renewable energy sources or takes other significant actions (e.g. dramatically reducing energy consumption, which the City should certainly explore), Cranston's current percentage of sustainability in terms of electricity is anticipated to *decrease* from its current number as electrical consumption is anticipated to rise due to technological innovations, population rise, and other factors. **Due to staff seeing no other preferred alternatives, and acknowledging that all known energy solutions come with trade-offs, staff recommends that the City consider allowing a highly limited and regulated amount of utility-scale solar in A-80 with a special use permit.**

Although staff emphasizes the climate and sustainability issues as the main justification for its recommendation, there are also numerous and significant benefits to allowing solar in A-80. For example, they:

- Provide the City with a viable tool to offset permanent development such as low density residential sprawl;
- Provide the City with the opportunity to preserve the project site if/when the SES is decommissioned;
- Provide the City with additional tax revenue which helps balance the budget, relieve tax burden on citizens, and offers a potential funding stream for the Open Space Fund;
- Provide the City with an extremely low traffic-generating land use;
- Provide agricultural businesses an accessory income option.

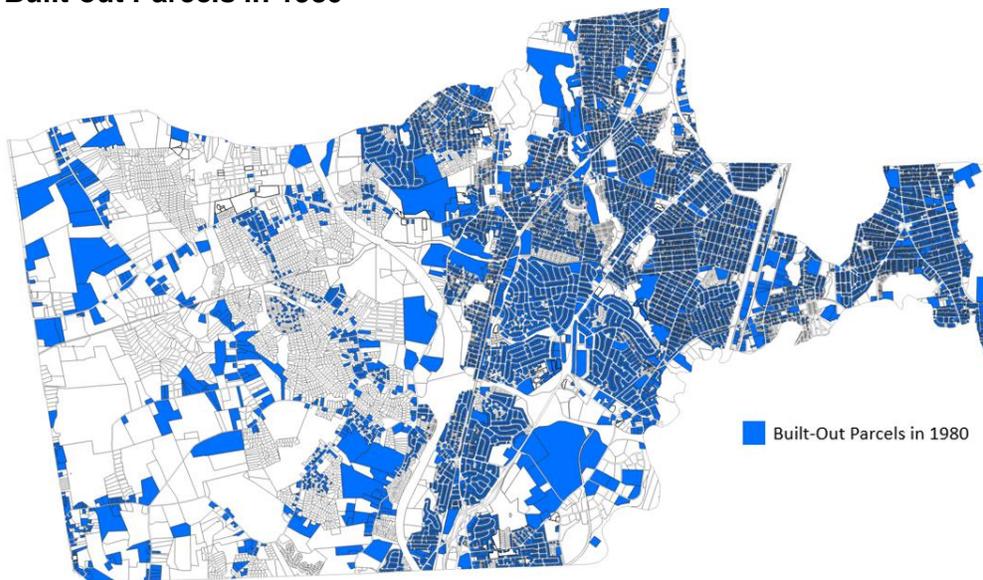
One of the primary goals of the City's comprehensive plan over the last several decades has been to manage residential sprawl in Western Cranston. The Comprehensive Plan's Land Use Element reads, "*A build-out analysis of Western Cranston revealed that at the then current building trends coupled with existing land use policies, would result in the consumption of large amounts of land for residential development, changes the area from rural to suburban character, and result in considerable loss of natural habitat*" (p.23). To combat sprawl, a renewable energy comprehensive plan amendment introduced a 'land banking' strategy founded on the basic idea to temporarily offset permanent (residential) development while simultaneously creating revenue which could be used to purchase land and/or development rights, hence providing the City the opportunity to offset residential sprawl permanently. The semantics and definition of "land banking" has been questioned, but ultimately, the City is the one who defines and/or interprets what it means in the context of its own Comprehensive Plan.

Examples of this policy include the solar projects at Hope Farm and Gold Meadow Farm (Lippitt Ave). Plans for 30 single-family lots for Farm House Lane subdivision and 39 single-family lots for Gold Meadow Estates subdivision had already been approved before the City reviewed and approved solar projects, thus validating and affirming the land banking strategy. Granted, these two projects are the most controversial existing solar projects in the City, but they are controversial because of their flaws which resulted from a poor solar ordinance, not for their failure to offset subdivisions. The solar

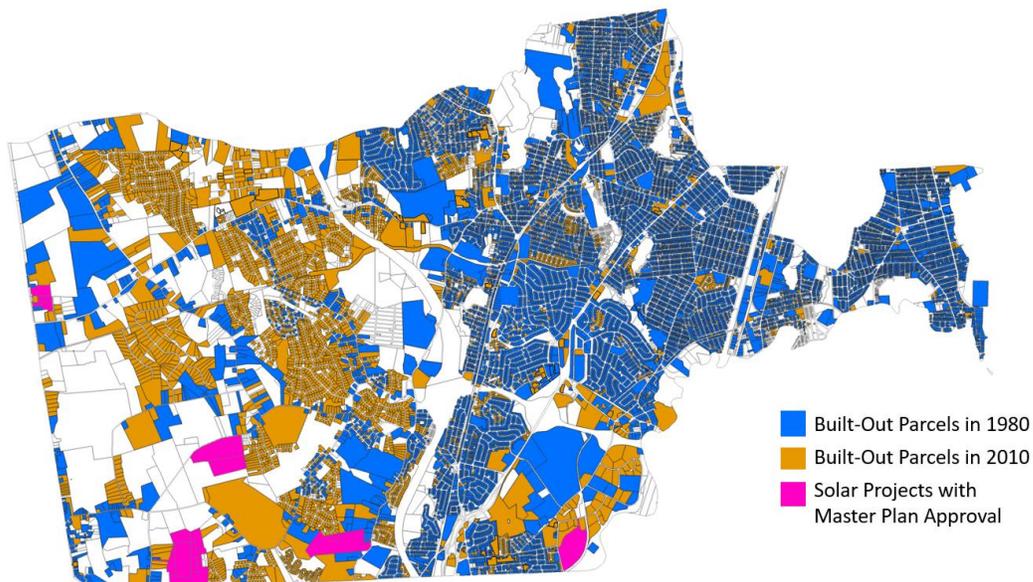
ordinance being put forth by the Planning Department and the Plan Commission, seeks to correct the many issues identified with these projects, so it is important to acknowledge that the strategy has worked in practice, and would continue to work under the additional robust protections offered by Ordinance #08-19-07.

In addition to offsetting all of the reasons above, opposing solar on vacant land in A-80 is counterproductive to its goal of preserving land in Western Cranston in the long-term. Banning a temporary use which prevents permanent residential sprawl is counterproductive to the City's ability to preserve land. Residential development has been and continues to be dominant development pattern in Western Cranston, and thereby largest threat to open space. The following images illustrate the buildout of Cranston in the years 1980 and 2010 to demonstrate the rate of development the City has experienced.

Built-out Parcels in 1980



Built-out Parcels in 1980, 2010 & Solar Projects With Master Plan Approval



Solar installations provide a viable tool to help the City acquire open space. First by offsetting permanent development, but also by creating tax revenue which It is important to know that the City currently has an available balance of only \$123,367.13 in its Open Space Fund, and \$4.5 million in remaining authority available to bond the next time the City goes to the bond mark (estimated to be two years from now unless Council votes to go sooner). Short of eminent domain, which also comes with significant cost issues, the City does not have any others tool at its disposal to prevent land owners from developing their property(s) so long as they comply with zoning and all applicable regulations. Solar development would prevent residential development for the life of the solar installation, buying the City time to raise funds and orchestrate potential land acquisition deals while collecting additional tax revenue. The City needs a plan to fund open space acquisition over the next two years and beyond, and should strongly consider creating a **municipal land trust** that is accountable to the people and has transparency requirements like all other government bodies. The Planning Department recommends that the Council pass a resolution to allocate tax revenue from solar projects into the Open Space Fund, not prohibit them from A-80 and S-1.

Ordinance #8-19-08 reflects the proposed changes to the Use Table, of which are summarized below:

- Minor Accessory:** Allowed by-right in every zoning district
- Major Accessory:** Allowed by-right in A-80, C-4, C-5, M-1, M-2, EI & G zones
- Principal:** Allowed by-right in M-1 & M-2 zones
Allowed with a special use permit in A-80 & S-1 zones

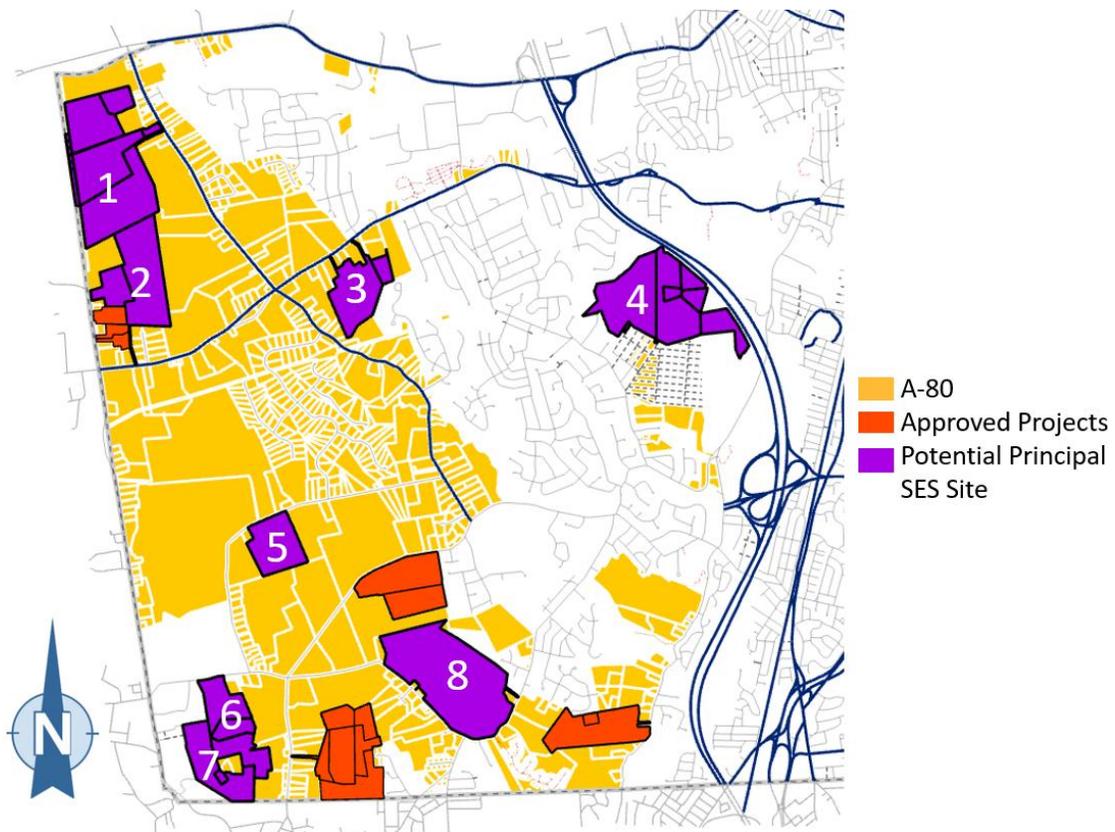
From this decision point forward, **nearly every provision in the ordinance was written to eliminate or mitigate the impacts of solar while trying to be as permissive as possible for solar on rooftops, parking lots and industrial zones.** Staff focused on the issues which it understood as the most important to the residents of Cranston, but also to the ordinance to great detail to try to cover every possible angle of protections that the residents deserve.

Staff took a regulative strategy to only allow Principal SES's on larger parcels in A-8 & S-1 zones. The rationale behind this strategy is

- 1). It drastically limits the number of allowed sites, removing the possibility that Principal SES's could be sited anywhere in A-80;
- 2.) Smaller sites are much more difficult to buffer as buffering may require significant land area;
- 3). Smaller sites are not viable to require significant percentages of open space to remain undisturbed;
- 4). Smaller sites are generally more integrated into existing neighborhoods;
- 5). Smaller sites do not allow for flexibility in site design to avoid sensitive areas; and
- 6). Projects on larger sites would potentially offset larger subdivisions.

In conjunction with the minimum parcel size requirements, the ordinance also requires all land area to be “Upland,” meaning that wetlands and land occupied by large utility easements cannot be used as part of the area calculation. The results are that instead of any given parcel being viable for solar, only very few parcels meet the criteria. Staff analysis concludes that only 8 sites *currently* meet the minimum size requirement (please be aware that the eight sites are comprised of more than 8 parcels because they are combined under common ownership) which are not restricted by other reasons (conservation easements, state ownership, etc.). Staff wants to be perfectly clear that its analysis is dependent on the GIS data, which may have flaws and limitations (e.g. wetland data may be different then when RIDEM certifies a surveyed wetland edge). Also, as a member of the public correctly pointed out, one could purchase various parcels of land and assemble them to make other viable lots in the future. If this were to happen, the goal is that the ordinance would establish a situation where the City would either get a desirable enough application to approve the special use permit, or have the necessary information and codified standards to deny the application. The following maps illustrative of staff’s analysis. The map below shows A-80 zones (where solar was permitted in the previous ordinance and would no longer be allowed) the solar project with a minimum of master plan approval, and the sites where Principal SES’s are considered viable.

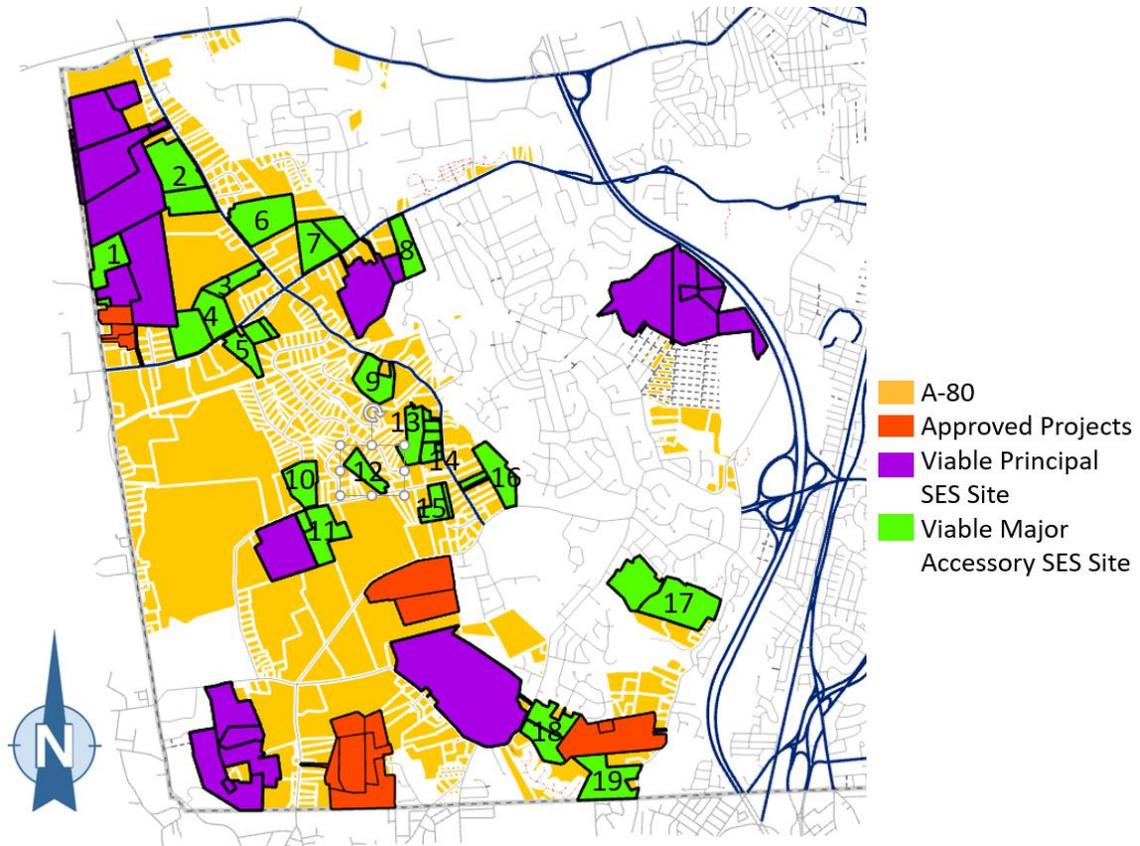
Western Cranston – A-80 Zones, Solar Projects & Potential Principal SES Sites



In a similar vein, the ordinance recommends a 10-acre minimum upland lot area for Major Accessory SES. The thinking is that as an accessory to a principal use, and limited to 25% of the land area of the project site, that the impacts Major Accessory

SES's could be mitigated on sites with 10 acres of upland area. In concert with the regulatory approach to lot size requirements, there are other restrictions imposed intended to target already cleared sites, screen the SES installation, and require the least impactful site design. The following map shows all of the same information as the previous map but includes the potential Major Accessory sites resulting from staff's GIS analysis. Please be aware that many of these sites may be limited by factors that were not part of staff's analysis, such as the lack of a principal use on site, the lack of compatibility with the existing use, or other factors. There are 19 sites (again – there are more than 19 parcels but they are combined under common ownership) staff found to meet the requirements, excluding the sites which also meet the requirements for Principal SES. The following map illustrates staff's GIS analysis for potential Major Accessory SES's sites.

Western Cranston – A-80 Zones, Solar Projects, Potential Principal & Major Accessory SES Sites



Staff acknowledges that limiting SES's to these sites would mean almost nothing without appropriate codified performance standards and regulations.

Perhaps the most significant and novel (at least in the City of Cranston) regulatory approach taken by the ordinance is to introduce and impose the concept of a **Tree Disturbance Maximum**. 'Tree Disturbance' is defined in the ordinance as the removal or topping of trees with a 3" caliper or greater, including all disturbance within 5 years preceding the submittal of a SES application and allows for minor exemptions such as

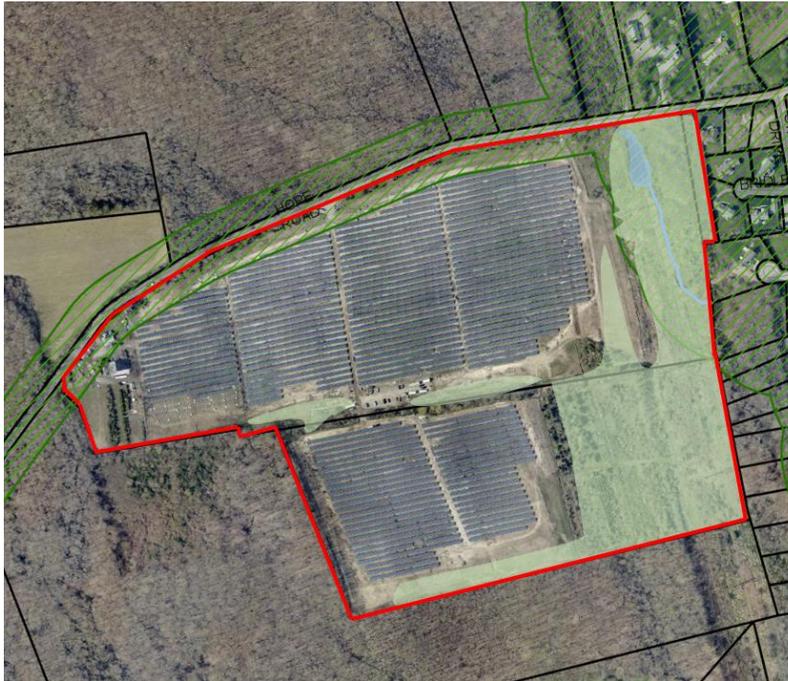
forest management or agricultural purposes (which are of course already allowed). The Tree Disturbance Maximum establishes the total amount of Upland Area on which Tree Disturbance shall be permitted for the development of an SES. This restriction does not apply so SES's in any zones other than A-80 and S-1, disincentivizing the loss of trees and habitats in these zones. The ordinance currently proposes a 60% Tree Disturbance Maximum Principal SES's and a 10% maximum for Major Accessory SES's in A-80 & S-1 zones. The 10% figure for Major Accessory SES's was intentionally meant to be highly restrictive in an effort to effectively rule out the feasibility of significant tree-clearing and thereby targeting farms which have already been cleared for agriculture.

Staff has reconsidered the Tree Disturbance Maximum for Principal SES's in A-80 and S-1, and recommends that it be reduced to 30%. The main reason for this change is that the ordinance did not go to great enough lengths to protect the City's tree canopy and encourage solar developers to utilize already cleared sites. This change would effectively protect the natural resources and rural character of Western Cranston and add an extra measure of protection for the community. Although reduction of fossil fuels and other non-sustainable energy sources is absolutely critical to fight climate change, so too is the protection of our natural resources; the ordinance should strike to balance both. Out of the 8 potentially viable Principal SES sites identified by staff's analysis, site #2, #3 and #7 are entirely or almost entirely forested, whereas the other sites are not entirely forested due to their existing uses. Staff finds it in the best interest of the environment, residents and character of Western Cranston, and City as a whole to incorporate this proposed change to the ordinance.

Not only does the Ordinance include Tree Disturbance Maximums, but it also proposes **Tree Disturbance Setbacks**. Where Tree Disturbance Maximums are tailored to restrict the amount of tree disturbed on a particular site, Tree Disturbance Setbacks are aimed specifically at the locations where trees are most critical. The ordinance proposes a 100' Tree Disturbance Setback measured from the right-of way and all parcels with residential land use codes according to the City Tax Assessor. Additionally, the ordinance requires a 400' Tree Disturbance Setback measured from primary residential structures. Staff understands that buffers from residential properties, residential structures and the right of way are essential, so maintaining the existing trees in these areas is an important element of the regulatory strategy. These regulations do not apply to industrial zones.

Another level of regulations imposed on SES's is **Solar Lot Coverage**, defined as the area on a SES project site which can be host to panels, inclusive of inter-panel spacing. Limiting the amount of area which the panels can cover is important to ensuring a desired percentage of any given site is undeveloped. The ordinance intentionally restricts Tree Disturbance more than it does Solar Lot Coverage because if a site is heavily vegetated, the Tree Disturbance Maximum will act as the prohibiting factor for the area of the project. The Tree Disturbance Maximum may not come into play on a cleared or mostly cleared site, in which case the Solar Lot Coverage Maximum will limit the area of the project. Solar Lot Coverage is defined separately and is not to be confused with Building Lot Coverage, which has other purposes like restricting stormwater impacts and bulk/massing. Staff utilized Solar Lot Coverage as a tool to incentivize solar on industrial land, allowing 85% for Principal SES's in M-1 & M-2 zones and 60% in A-80 & S-1 zones. Low percentages (25% for A-80 and 30% for M-1 & M-2 zones) were set for Major Accessory SES to ensure they remain accessory not only in terms of use, but also in terms of land area.

Staff has drafted two mock site plans in order to visually demonstrate the difference between the Hope Farm Solar & SSRE Gold Meadow Farm Solar projects as they were constructed under the previous regulations with how they would (roughly) would look under the proposed regulations. Please understand that these mock site plans are for illustrative purposes only, are geometric approximations, and do not take into account the full level of details of the sites and surroundings which would be required by the ordinance to address potential impacts.



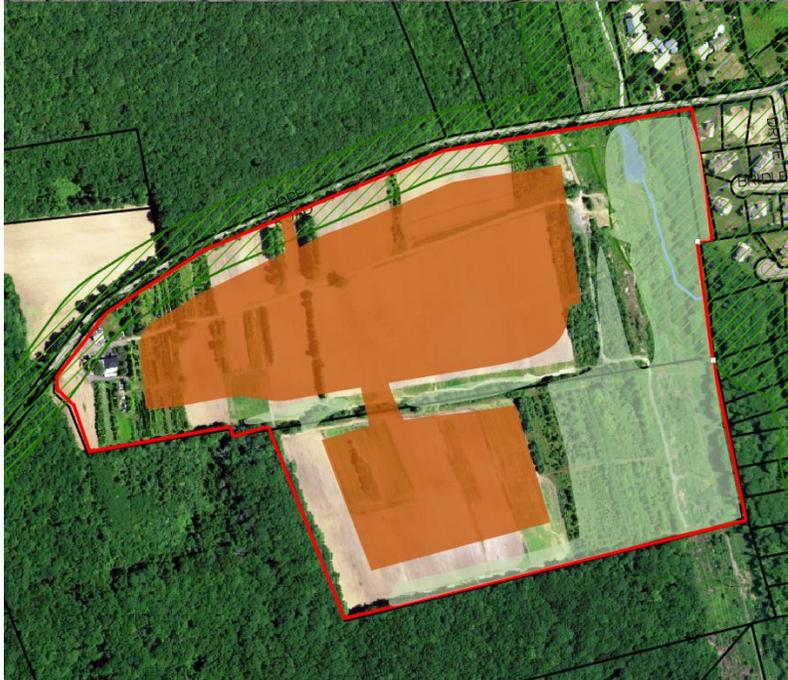
Hope Farm Solar Now

Legend

- Site —
- Water —
- Wetland —

**All data is approximate and for demonstration purposes only*

Total Site Area:	76.97 Acres	100%
Wetland Area:	20.37 Acres	26.5%
Upland Area:	56.6 Acres	73.5%
Solar Lot Coverage:	37.09	65.5%



Hope Farm Solar Under Proposed Ordinance

Legend

- Site —
- Water —
- Wetland —
- Developable Area —

**All data is approximate and for demonstration purposes only*

Total Site Area:	76.97 Acres	100%
Wetland Area:	20.37 Acres	26.5%
Upland Area:	56.6 Acres	73.5%
Solar Lot Coverage:	33.96	60%



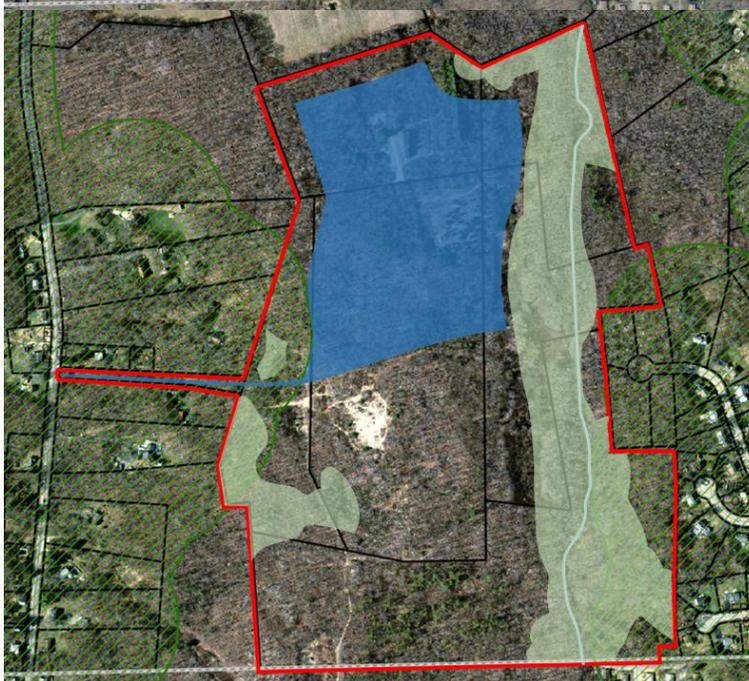
Gold Meadow Solar Now

Legend

- Site —
- Water —
- Wetland —

**All data is approximate and for demonstration purposes only*

Total Site Area: 108.27 Acres	100%
Wetland Area: 29.01 Acres	26.8%
Upland Area: 79.26 Acres	73.2%
Solar Lot Coverage: 60.53	76.4%



Gold Meadow Solar Under Proposed Ordinance

Legend

- Site —
- Water —
- Wetland —
- Max Tree Disturbance —

**All data is approximate and for demonstration purposes only*

Total Site Area: 108.27 Acres	100%
Wetland Area: 29.01 Acres	26.8%
Upland Area: 79.26 Acres	73.2%
Tree Disturbance: 23.78 Acres	30%

Without taking into consideration many of the other regulations written into the ordinance, these illustrations show the impacts of the ordinance would have on a cleared site (Hope Farms) and a forested site (SSRE Gold Meadow Farm Solar). The ordinance has a significantly more impact to the forested site than the farmland because of the Tree Disturbance Maximum. The SSRE Gold Meadow Farm Solar project would have been limited to disturb tree on 30% of its Upland area, meaning that with separation for shade cast, the Solar Lot Coverage % would be in the 20's. The ordinance would not have as drastic an effect on the Hope Farms Solar project, but would have reduced the

footprint by several acres, ensured better buffers and explicitly have restricted barbed wire fencing and would have required stockade fencing where visible from the right-of-way or abutting properties.

Visual screening/buffers are critically important to Western Cranston and are an essential element of the ordinance. Especially with the proposed minimum lot size requirements, staff sees no reason why SES's can't be fully screened. If topography or other factors prevent screening from being feasible, the Zoning Board would be well within its rights to deny a special use permit application. The ordinance provides discretionary buffer depths, "as wide as necessary to effectively screen the solar panels and equipment." Having heard the public's desire to be included in buffering plans which would directly affect them, staff included a requirement for an Inclusive Approach to ensure compatibility with the community's needs. The ordinance explicitly gives the Plan Commission discretion to require the applicant pay for an independent review by a Rhode Island registered Landscape Architect. There are provisions to take the absence of existing vegetation into account as to not penalize SES's on already cleared sites, while of course still creating effective visual screens.

Also an aesthetic issue is that of the **interconnection**. The Ordinance requires that the applicant to provide the greatest amount of interconnection related information available at each application phase. Onsite cables must be underground unless non-monetary obstacles render it infeasible. Furthermore, the ordinance clearly states that the Approving Body may deny a project based on the aesthetic impacts of aboveground utilities. This measure takes the pressure off of the Plan Commission to approve by-right solar applications where a particular site or other aspects of an application may not be in the best interest of the City.

Every potential site and every application is different, so each should be evaluated on its own merits. For this reason, the ordinance provides **discretionary clauses** which allow flexibility as long as outcomes are not sacrificed. For example, Principal SES's in A-80 are required to be setback 100' from all property lines, *or the distance required for an effective visual screen*, whichever is greater. Another significant example is the location of the panels; the ordinance reads:

"SES panels and equipment shall, to the greatest extent possible, be sited within the project site in the area(s) which are anticipated to minimize potentially adverse impacts to nearby properties, communities and natural resources with reasonable considerations to site conditions and other use(s) on site as applicable."

This provision will put the burden on the applicant to site panels in a sensitive and conscious manner. The Tree Disturbance and Solar Lot Coverage maximums will ensure that sites will not have panels from lot line to lot line, so there will be flexibility to site panels in accordance with this requirement.

IV. Taxation / Revenue

One separate but related issue raised by Councilmember Brady at the joint Council/Plan Commission workshop held on July 18th is that of the tax revenues from solar installations. Essentially, how much money does the City tax solar projects? Before offering an explanation, staff wants to emphasize that taxation is not and cannot be a

part of the ordinances for which this memo is focusing. Amendment to the taxation scheme would require other City staff, and would be an entirely separate ordinance. That being said, City Code section 3.16.060 establishes the tax scheme. *Commercial* renewable energy systems pay a Tangible Tax of \$5 per kW (a 2MW facility would pay \$10k per year). They also pay a Real Estate Tax at the rate of \$2 per kW (a 2MW facility would pay \$4k per year). Section 3.16.060 (E) provides exemptions for systems that are not selling their power, but are merely installed to offset the energy used at that site. Because the City may want to consider imposing a higher Real Estate tax \$5, staff recommends looking into this issue further to explore a more beneficial return.

V. Findings

The Planning Department makes the following findings, supported by the analysis in this memo:

1. More than **88%** of the City's electric energy sources are not sustainable, damage the environment, and may not be the most cost-effective or fiscally responsible pathway for the City and its constituents moving forward;
2. The City does not have the capacity to responsibly strive towards a sustainable carbon footprint fully relying on rooftops, canopies, brownfields, and industrial zones;
3. Per City Code Section 17.120 *Amendments*, the Plan Commission is required to include a demonstration of recognition and consideration of each of the applicable purposes of zoning as presented in City Code Section 17.04.010. Without a viable alternative plan to responsibly address its carbon footprint, denial of the ordinances would be inconsistent with the stated intent of Zoning in City Code Section 17.04.010.B. "Providing for a range of uses and intensities of use appropriate to the character of the city and reflecting current *and expected future needs*" (emphasis added);
4. The ordinances are consistent with the City's Comprehensive Plan, 2010, as amended, particularly the Comprehensive Plan Amendment *Solar Performance Standards Ordinance#1-17-11*;
5. Solar projects can and do temporarily offset residential subdivisions which has many benefits to the City;
6. Solar installations provide a viable tool to assist the City in acquiring open space.

VI. Conclusion

Staff believes recommends the Plan Commission and City Council consider the extensive research that has been done on this matter as charged by the moratorium and adopt an ordinance which addresses the complexities of solar energy systems with appropriate detail instead of a broad brush ban as recommended by Ordinance #6-19-09 & #6-19-10. As difficult as it may be, ***it is important for the City to move forward – not backwards.***

Ordinances #8-19-07 & #8-19-08 were written to find a reasonable and balanced approach to the needs of Cranston residents and environment both now and for generations to come. **The City of Cranston, like every other municipality, needs to address its carbon footprint** - not only for the climate and environment, but also because the City has an ethical and fiscal responsibility to strive towards sustainability. Staff calculates that **more than 88% of the City's electric energy sources are not sustainable, damage the environment, and may not be the most cost-effective or fiscally responsible pathway for the City and its constituents moving forward.** City Code requires that all zoning amendments must be found to be consistent with the stated intents of zoning, including Section 17.04.010 B. "Providing for a range of uses and intensities of use appropriate to the character of the city and reflecting current *and expected future needs*" [emphasis added]. **If the City determines that solar power is not going to be a significant part of its strategy, then staff would strongly encourage that the City articulate an alternative strategy as to avoid leaving the City without any plan at all.**

VII. Recommendations

Based on the reasons and findings stated in this memo, staff recommends that the Plan Commission forward a **positive recommendation** on Ordinances #08-19-07 to the Ordinance Committee with the following amendments/corrections:

1. Amend the table in line 153 by striking ", S-1" from the second column of the Major Accessory row.
2. Amend the table in line 230 by striking "& S-1" from the second column and creating a new column entitled "S-1" and entering "N/A" in the Major Accessory row and "60%" in the Principal row.
3. Amend line 251 by striking the word "all."
4. Amend line 265 by striking "60%" and replacing it with "30%."

Based on the reasons and findings stated in this memo, staff recommends that the Plan Commission forward a **positive recommendation** on Ordinances #08-19-08 to the Ordinance Committee