

CITY OF DUNEDIN, FLORIDA  
DEVELOPMENT REVIEW COMMITTEE MEETING  
REGULAR MEETING OF WEDNESDAY AUGUST 28, 2019  
8:30 A. M.

**FINAL NOTES**

These meetings are courtesy meetings, and are purely exploratory. They do not constitute a formal review, nor can any guarantees be made during the DRC meeting. Formal review by the various departments *and* by the boards and/or Commission is still required. ***\*\*Please share these notes with your architect, engineer, and contractor, once selected.***

**STAFF PRESENT**

- Chair Lael Giebel
- Greg Rice
- Bob Ironsmith
- Tai Truong
- Mike Handoga
- Craig Wilson
- Joseph DiPasqua
- Bill Pickrum
- Lucy Fuller
- Danny Craig
- Jorge Quintas
- Natalie Henley
- Paul Stanek arrived 8:50am
- Whitney Marsh arrived 9am
- Doug Hutchens arrived 9am, left 10:10am
- Jennifer Bramley arrived 11am

**ABSENT**

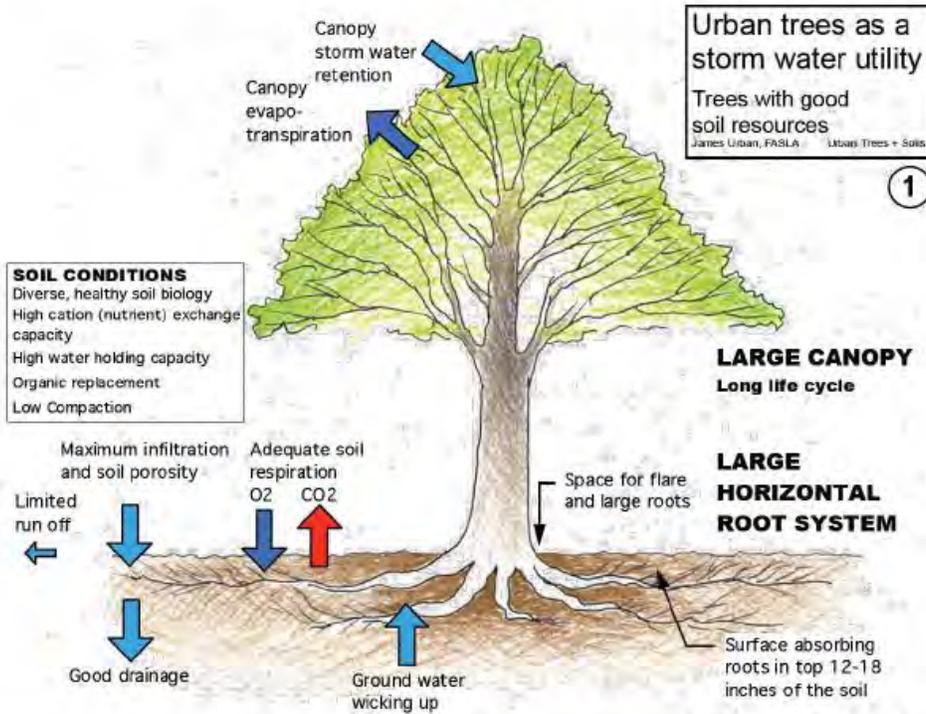
<b>AGENDA:</b>	♦ Internal discussion	8:30 – 9:00	pgs. 1-4
	♦ 737 Loudon (Govt Ctr)	9:00 – 10:10	pgs. 5-10
	♦ Biodigester Presentation	11:00 – 1:00	pgs. 10-14

**1. 8:30 – 9:00 Internal discussion**

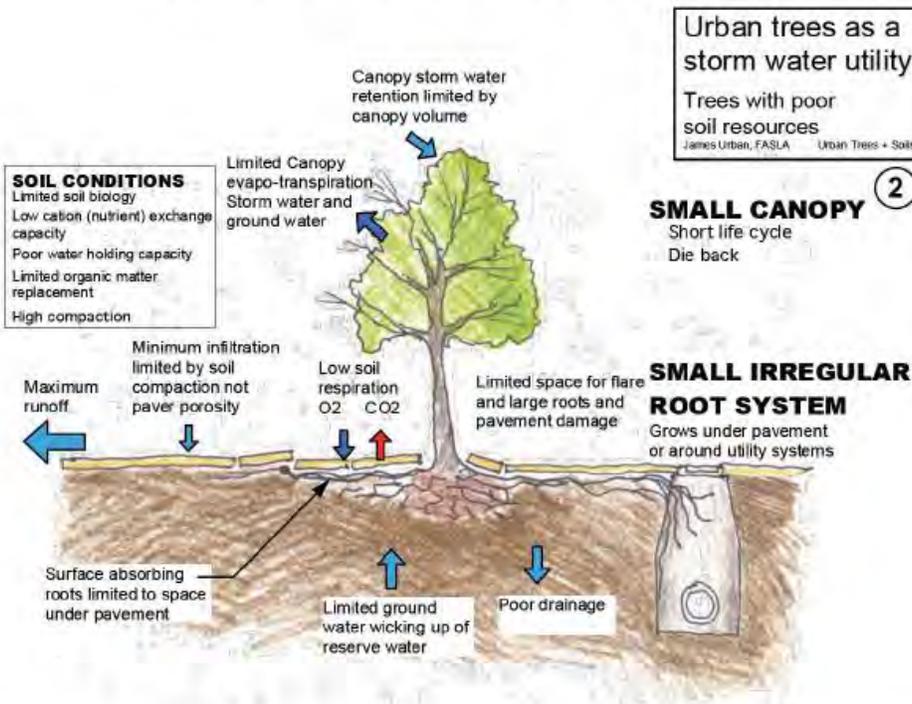
**Staff present:** Lael Giebel, Greg Rice, Jorge Quintas, Tai Truong, Bob Ironsmith, Joseph DiPasqua, Mike Handoga, Bill Pickrum, Craig Wilson, Lucy Fuller, Whitney Marsh, Paul Stanek, Danny Craig, Natalie Henley

**Topic:** Presentation by Craig Wilson regarding Structural Cells

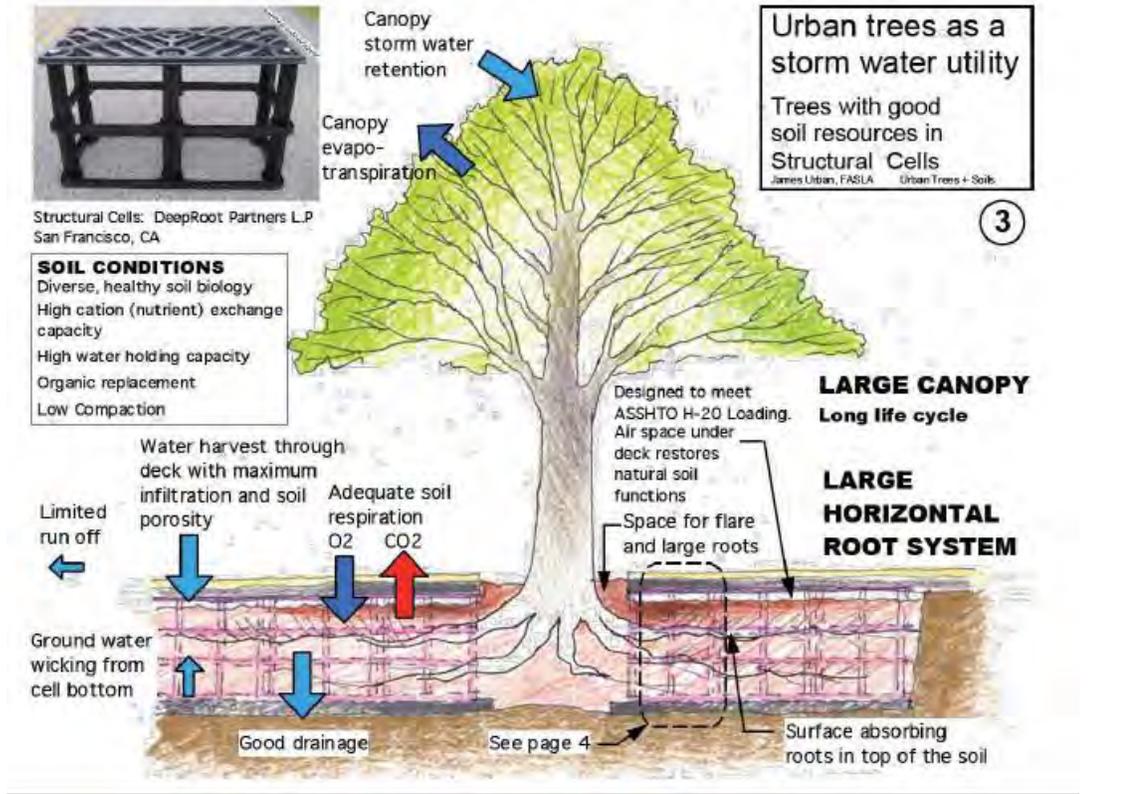
## Trees Naturally Occurring



## Trees & Poor Soil Resources



# Trees With Good Soil Resources



## Suspended Pavement & Sidewalks

Suspended pavement (also known as cantilevered sidewalks) is a general term for any technology that supports the weight of paving and creates a subsurface void space that is filled with soil for root growth. The soil that is used to fill the system can either be native, from the excavation area itself (if appropriate), or a specified mix.

### Benefits of Trees Growing in Suspended Pavement

Suspended pavements facilitate the growth of healthy trees in urban spaces. Healthy trees have high social and ecological value, including:

- Offering cooling effects via shading and evapotranspiration from the canopy
- Improving air quality by mitigating carbon emissions
- Improving aesthetics and quality of place
- Improving health and well-being
- Encouraging biodiversity due to provision of habitats.

## Structural Cells & Stormwater Management

### Stormwater Management:

Healthy, **mature trees** provide significant **stormwater benefits**, and suspended pavement systems provide opportunities for integrated stormwater/soil benefits.

If **suspended pavement systems** are filled with a **bioretention soil mix**, about **20 percent** of their **volume** can be used for **stormwater storage** (in **1,000 cubic feet**, **200 cubic feet of water can be stored**).

Rain water can be directed in to suspended pavement systems in order to keep it on-site, making it available for plant growth and preventing it from overflowing sewer systems or polluting nearby watersheds. There are many ways to direct water in to the system, including pervious pavers, curb cuts, catch basins, slot drains, and more. A typical tree in this amount of soil can hold a significant amount of rainwater, preventing overflow into the impervious surface area, not just under the tree canopy but far beyond the canopy's edge as well.

## What is Suspended Pavement?



Traditional planting



Design for maturity

**2. 9:00 – 10:10 Meeting regarding 737 Loudon Ave (New Government Center) - attendees:**

- Chris Bridges, George F Young
- Jim Clees, Harvard Jolly (landscape architect)
- Amy Webber, Harvard Jolly (architect)
- Matt Walker, George F Young (engineer)
- Ward Friszolowski, Harvard Jolly (architect)

**Staff present: Lael Giebel, Greg Rice, Jorge Quintas, Tai Truong, Bob Ironsmith, Joseph DiPasqua, Mike Handoga, Bill Pickrum, Craig Wilson, Lucy Fuller, Whitney Marsh, Paul Stanek, Danny Craig, Doug Hutchens, Natalie Henley; also in attendance, Public Relations Advisory Action Committee (PRAAC) liaison Stephanie Joines**

Ward – this is still just a schematic design, we will be getting our final report from Driggers.

Greg - on parking garage side of the property, that is zoned DC; we want to change that zoning to MPL so that it matches the government center parcel, and so that the Commission has more flexibility.

Doug - timing on that?

Greg - recommend doing it as soon as possible. If we leave it DC, it would trigger design review, among other things. We would zone all to MPL, then as you sell off out-parcels, rezone to DC.

Lael – as you know we have a required art component; the Arts & Culture Committee will be putting together an RFQ to get an artist on board now, rather than later down the road, so that the art can be integrated as much as possible.

Bob – we have started our relocation, we have space on Pinehurst; we are excited about this project. We are waiting to hear about the demo party. Will there be pictures with a drone?

Ward - typical for contractors; we can list that as a requirement.

Bob – are we still using 2 year time period, still on track? (Yes)

Doug - April 2020 plans should be done and go out for bid – then the project should be complete by October 2021.

Greg – you can work on infrastructure concurrently with rezoning - rezoning shouldn't hold that up.

Bob – we would like a separate cost for brick sidewalks and angled parking. Looking to pay for that outside budget.

Doug - if the bathroom stays in parking project, it comes from this budget.

Joey - already working together, always here to help.

Bob - timing wise, garage first or second?

Ward – we are leaving that up to the contractor.

Doug - we'd like to leave that open unless there is a need to do garage first. The contractors may want to use the parking garage area to stage.

Bob - Blue Jays?

Jorge – you can also use future TH section as the lay down area.

Bob – we might need space there for parking fleet cars.

Whitney – you may want to consider safety - if you open the garage first, it could be a safety issue with the open construction site.

Tai – provided the infrastructure packet and atlas sheets, parking dimensions, etc. Building to the east will need less of storm water, treatment only. The parking garage and townhomes will require more treatment and attenuation.

Matt - you are correct; eastern block impervious goes down, the western block impervious goes up; so the net is 15,000 square feet of additional impervious area. We are proposing this as one project with SWFWMD. We also have a ramp area in the parking garage to use as a separate chamber. If you want us to separate these out and permit as two separate blocks we can. We thought one was better.

Jorge - to go uphill is quite costly. I think you need to provide something in the parking garage portion of the project.

Matt – we assumed a maximum impervious area of 70% when doing our estimates.

Bob – your stormwater system can include exfiltration.

Ward – think exfiltration is best in alleyway.

Tai - outfall is at the NW corner. You have to figure out how to get it there.

Jorge – for the placement of HC parking stalls on Wood and Virginia, where do they travel?

Ward - have the minimum number in the garage (we may add more), then we have other spots distributed in several different areas. Ones closest to chambers have two entrances. From the garage they will cross the street, and we may have a possible lift there.

Jorge - any more thought to generators?

Ward - screening them on Loudon, with the chillers. Windows will look above the units because of the 10' grade change.

Bill - It would be ideal to keep the debris (dumpster) collection point next to a building entry door, with a turn off access lane on Wood street so that the collection truck isn't blocking west bound traffic.

Whitney – I am working on a Stormwater master plan with Jones Edmunds & Associates; it was briefly discussed whether you can do some over sizing for additional storage. This site was earmarked for additional storage. They discussed vaults; they are willing to discuss it with you. For the retention pond, if you overtop, then you affecting generator.

Doug - would stormwater dollars be brought here?

Whitney - that's something we are looking at. It could be helpful for water quality.

Matt - vaults have heavy maintenance associated with them.

Whitney - more like a CDS (Continuous Deflective Separation) Unit, so our vehicle can service it. it needs to be on your downhill area.

Matt – at the plaza area on the NW corner, are there any concerns w/vaults being under bricked the pedestrian area?

Whitney – that's not out of the question.

Bob - what is the goal?

Whitney - if there is future development in the area, they can use our site and pay into the system.

Mike - how many stories is the parking garage?

Amy - two elevated decks, 3-stories. First floor is 14.5' to allow for specialty fleet vehicles.

Mike – will there be fire sprinkling?

Ward – we prefer not to. Because we are selling off the out parcels, we probably need to. The garage is not mechanically vented; it's a fresh air, open garage.

Mike – will the Government Center be sprinklered? Yes. When you get closer to deciding FDC location, let's get together. The pull off on Wood is probably a good location. When you submit, show the closest hydrants on site. I usually ask for two. The site has good access.

Ward – we would like to sit down with you.

Bob - how many FDCs?

Mike - I assume two - one for the building, and one for garage.

Craig – I split my comments into two parcels, and will start with parking garage. I included the townhomes in calculations for the number of trees; you can subtract out the out parcels. This site is approximately 94,060 square feet of gross developable land area. Requiring (45) shade trees prior to final inspection and issuance of certificate of occupancy, or final inspection. There must be a minimum of (6) different shade tree species used. Terminal and finger islands a required to have (1)

shade tree, shrubs at appropriate spacing and size, groundcover (room permitting), and mulch (not cypress). See Appendix B – Landscape Plant list for preapproved tree and plant species. Also, ensure that all tree and plant species meet or exceed the minimum % for native species and drought tolerance. Provide more shade trees. Specifically utilize the paver pedestrian sidewalks and the tremendous amount of open space near the Public Art area and any additional area along Virginia Street. Minimum amended loam soil volumes and structural cells will be needed to support the required shade trees. Show location, size (square feet and cubic feet) of soil and structural cells. Consult with your landscape architect, city arborist, and structural cell manufacturer for minimum requirements, specifications, and details. Proposed townhouses outparcel square footage is included in the above mentioned figures. However, no other specifics are being review or provided at this time. This will be reviewed upon conceptual rendering. You will need to retain a consulting arborist that is ISA Certified to complete and accurate Tree Inventory (see comment 4f below) with overall condition ratings and locations. Additionally, the consulting arborist will need to develop the required Tree Protection Plan. Please provide a Landscape Plan for initial design review and infrastructure review.

For the Government Center, this site is approximately 77,872 square feet of gross developable land area. Requiring (37) shade trees prior to final inspection and issuance of certificate of occupancy, or final inspection. There must be a minimum of (5) different shade tree species used. Terminal and finger islands a required to have (1) shade tree, shrubs at appropriate spacing and size, groundcover (room permitting), and mulch (not cypress). See Appendix B – Landscape Plant list for preapproved tree and plant species. Also, ensure that all tree and plant species meet or exceed the minimum % for native species and drought tolerance. Provide more shade trees. Specifically utilize the paver pedestrian sidewalks and the tremendous amount of open space near the Public Art area and any additional area along Loudon Avenue. Furthermore, there is additional room for shade trees along Virginia Street, Milwaukee Avenue, and Wood Street (particularly the large grass area south east of the two-story office building). Minimum amended loam soil volumes and structural cells will be needed to support the required shade trees. Show location, size (square feet and cubic feet) of soil and structural cells. Consult with your landscape architect, city arborist, and structural cell manufacturer for minimum requirements, specifications, and details. Modify retention pond along Wood Street to preserve the Live Oak tree shown on the conceptual architectural site plan. This tree is shown as being preserved, but the retention pond as proposed will not allow for preservation. Review with your consulting arborist and city arborist to adequately preserve the critical root zone (CRZ) of this tree by modifying the pond. If this cannot be modified the tree will need to be removed and mitigated. The tree preservation plan must provide adequate preservation measures for the Grand Live Oaks along Milwaukee Avenue. **The proposed parallel parking near these trees may need to be removed.** Review with your consulting arborist and city arborist to adequately preserve these trees. You will need to retain a consulting arborist that is ISA Certified to complete and accurate Tree Inventory with overall condition ratings and locations. Additionally, the consulting arborist will need to develop the required Tree Protection Plan. Public art area could shift, ideal spot for couple of shade trees to cantilever over street. Couple more spots along VA. Like structural cell on key trees at a minimum, to allow rooting capacity. Didn't review TH except counting in parcel, so you can subtract out.

Bob – is there any way to save tree near pond?

Craig - not really. I think that's co-dominant with bark inclusion; if it is, then we shouldn't jump through hoops to save – I need to confirm that.

Doug - is the angled parking on Milwaukee existing?

Ward - we will confirm, but we are not intending to bump those in. We will verify. Our intention is to not encroach on trees. I don't think we are moving curb line.

Doug – is there anything that needs to be done for grand oaks, such as fertilization, etc?

Craig - during construction, at least mulch and use grand tree barricades. Trees may need soil rejuvenation, which means air spading and amending the soil. Provided complete packet.

Natalie - we will have future discussions on solar, and we have you on schedule for the October meeting. I will send you the agenda and time.

Ward – we are using Green Globes certification.

Lucy - for parking, please show the required square footage of 9x18 each. No more than 85% of either lot can be impervious.

Matt - estimated out parcel at 90%.

Amy – we will intend to meet your code on the out parcel.

Jorge – what is the timing of the duke pilot stations?

Natalie - December 2022.

Jorge – will you provide some conduits in the garage?

Ward – we show 2 and 2 (total of 4 spaces), but we want to work with our electrical engineer to allow an entire lane for future electric parking.

Paul - what about future fleet vehicles?

Ward – we could maybe assign as city vehicle only. We can work with you on the number, location and signage.

Paul – I assume whole fleet for these buildings will be electric at some point.

Doug - where do you see government vehicles parking? Need to designate those locations.

Jorge - from a preference perspective, where would you want fleet? Move city vehicles to top deck?

Bob - for public, angled parking is good. For fleet, top deck is good.

Paul - need to make sure ours are secure, because we won't be paying. Don't want anyone walking away with city equipment.

Natalie – currently there is no charge for the first year – we can change that any time. We may have an overriding pass for staff.

Bob - for public, angled parking is ideal. On the west end of Virginia, near Pisces.

Paul - does the generator supply to garage as well as building?

Amy – we need to establish what you want powered by the generator.

Jorge - will get back to them after speaking to Randy from fleet.

Matt - is this an EOC-type building? Is it expected to power for several days? If so, diesel storage gets very large.

Bob - I thought we were just using for fleet storage?

Doug – we need the generator, we could need it to power from 3-7 days - we need to get back to you on that. There may be natural gas near here as well. We need to have that conversation and get back to you.

Jorge - can you take advantage of the elevation differentiation and bury it?

Paul - don't want to rely on natural gas particularly.

Doug – if not relying on natural gas, then we are relying on delivery of diesel. We should have the electric vehicle conversation with CEQ. We need to decide on how much conduit to run on first and top decks, Virginia, etc. We don't want to retrofit later.

Ward - yes, we need to know the amount of electrical for our engineer to run. That's the most important part.

Jim - zoning and landscape buffering. Do they not extend across ROW?

Craig - no, if similarly zoned, not necessary. If commercial against residential, it is triggered. Buffer vehicle usage areas. The garage shouldn't be issue as long as car lights are not shining on the THs.

Jim - are streetscape materials determined/ type of bricks?

Bob - yes, I can get you the brick info, we are using new bricks now. We prefer 6' to 7' on width of walk.

Jim – will the overhead utilities be undergrounded?

Ward – only on Virginia and Louden.

Bob - what about Highland?

Doug – the pricing is for only those two, not Highland, Milwaukee or Wood. These two are on our side of the road. It becomes very expensive, for example on Wood where all of the residents would need to be retrofitted.

Jim - on city-owned projects, Craig can you function as the consulting arborist?

Craig – I think I can, but I think they want an outside third party, so that I don't downgrade a tree to our benefit. I'm happy to help with any questions.

Doug – why are you thinking of undergrounding on Highland?

Bob – it looks poor.

Doug – the plaza on Highland and Virginia could shrink considerably depending on what the elected officials want.

Doug - on 9/10, we are presenting to public at 6pm at the Hale Center; before that, we will have a meeting with the ARC (2nd time) and Arts & Culture Committee.

Natalie - the CEQ meeting is on October 29th, Tuesday 7:30am. I will send you the location.

**3. 11:00 – 1:00 Presentation regarding biodigesters and sustainability by T.H. Culhane, Associate Professor at the Patel College of Global Sustainability at the University of South Florida**

**Staff present: Lael Giebel, Greg Rice, Jorge Quintas, Tai Truong, Mike Handoga, Bill Pickrum, Craig Wilson, Lucy Fuller, Whitney Marsh, Paul Stanek, Jennifer Bramley, Danny Craig, Natalie Henley; also in attendance, Tracy Love Tippin, Ashlee Painter, Heather Rothrock, and Public Relations Advisory Action Committee (PRAAC) liaison Stephanie Joines**

Dr. T.H. Culhane, Associate Professor at the Patel College of Global Sustainability, and Director of Climate Change and Sustainability at the University of South Florida, introduced himself. He described biodigesters, and displayed a sample built at MIT. Food waste 3rd largest emitter of methane after china...get from TH. Food waste in general is the most egregious, but the easiest to solve.

Showed a [video](#) of home scale biogas overseas.

T.H. made the following points:

- One bucket of kitchen garbage gave us ~two hours of power.
- A simple garden hose provides the fuel, no high pressure necessary. There are no flies, no smell. Provides liquid fertilizer. Endless supply of liquid fertilizer you can spread about.
- 4 million women and children die a year from indoor air pollution – home biogas has no smell, no smoke.
- There are 13,000 practitioners in our group that teach this across the world. And a company in Israel exports to 92 countries now.

- Restaurants pay for garbage haulage, but with biogas, they don't pay, and they get the gas from it; so many advantages.
- [Solar cities](#) is their NGO. Biodigesters work in ALL regions in the world provided you can keep them warm. Not reliant on the sun like solar, so it's a total win.
- Showed a [webpage](#) with all the examples that show where TH built them.
- Pakistan is now compressing biogas and running generators with it.
- To start it takes 3-5 weeks for microorganisms to produce; the Ph needs to be neutral. So we inoculate and wait. Unless you have starter from another digester, then it starts immediately. For the at home size, you can't store enough methane to be dangerous. For home size, use an aquarium heater for winter.
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Ashlee - started a salt water biodigester as my research project – I'm a marine biologist. Salt water makes sense; we don't want to deplete freshwater stores. All biodigesters experts said it couldn't be done. It CAN be done, I've done it. Key to this is salt water microbes - I partnered with Mote Marine; they gave me fish poop. I also partnered with FWC for research. We are in the very preliminary stages of researching how they break down the toxins from red tide. So far we are seeing that they break them down faster, and it comes out free from toxins. If you put the fish in the biodigesters, what comes out seems to be toxin-free. Can put food waste in there as well, in addition to fish dissections, etc. All the materials come from the bay for a real-world demo, not in the lab. Once it's up and going, it doesn't need to be ocean waste.

TH showed the [Home biogas](#) video and the [FB page](#), which is open to everyone and has 13,000 members sharing biodigesters success stories.

This is currently a biodigester next door to Sylvia Earle, and will be building one at Sylvia's property. We are cleaning up the lake, and using muck for biodigesters. In five days, we can have a biodigester built. We will have a virtual walkthrough via Roblox. You will have National Geographic behind you. We need iconic figures - Sylvia will be that iconic figure, so that NatGeo can produce a newsworthy event.

Questions:

Q – one resident worried about CO<sub>2</sub> output. If food waste goes to landfill, it creates methane, which is about 30 times more potent as a heat-trapping gas than carbon dioxide, CO<sub>2</sub>. Dunedin's household garbage and food waste goes to the Pinellas County Solid Waste Facility, their Waste-to-Energy burn plant. What is the difference between these and why is it better to put food waste into a biodigester?

TH – wherever food waste goes, whether that is in a landfill, a compost, a burn plant, or a digester – it is going to emit gasses naturally. As it breaks down it will create carbon dioxide and methane. Instead of this methane being emitted into the atmosphere, the biodigester captures it and burns it. When methane is burned, it breaks apart into two outputs: carbon dioxide and water vapor, which makes it available to plants for a closed loop system. If it produces methane you don't use, it will burp out a 'fart', no more dangerous than us farting. Because it's local, microorganisms breakdown the excess methane in the person's yard. If you have plants, nature can assimilate it. There's enough infrastructure and knowledge that we never have to worry about an adverse effect on the environment. Wastewater treatment plants are biodigesters, but they don't use the produced methane.

Q - what are cities doing, what codes do you need in place?

TH – They are being used in NY, PA, CA. I think a lot of codes just do not address it. They are getting the first one permitted in unincorporated Hillsborough County. And someone in Lakeland is having DEP looking at it.

Heather – they are quite safe, used all over the world. There is a lack of policy supporting these structures. New York has said that all natural waste needs to be composted or digested, none to landfill.

TH - codes are being written as municipalities are learning more about it.

Q - we have a fertilizer ban from June 1 to September 30. What would you do here?

TH- we are hoping to show that living liquid compost is different animal than synthetic fertilizer. This creates a living matrix, it doesn't wash off the way synthetics do.

Tracy - Dr. Anne Wilke has been studying this. My personal experience is that it is going immediately into land, not washing off.

Whitney - something to consider - prove it is bound, that it would not create algae bloom, etc.

TH - that's why Lake Earle will be interesting test case - we think there won't be any run off back into the lake. We are looking for more field test sites from interested residents can watch this. Let's not call it fertilizer, it is liquid compost - if compost is already allowed, this is just the liquid form of that. Liquid compost actually enhances the breakdown of yard waste; as far as I know, all stays on site. No reports around the world that there is runoff.

Ashlee – on a larger scale, probably need some idea of concentrations - ban is not ALL fertilizers, just NPK heavy fertilizer. Need to show the County what your ratio is. Look at nitrogen content. We do see spikes at times, depending on what you put in.

Tracy - for home biogas system, put out amount of NPK of typical system - equivalent of one bag of fertilizer over entire year.

Whitney – you need to demonstrate that it is a 'bound' nutrient, not a run off nutrient. Will take working with their staff and DEP.

Q - cardboard and paper products. Can get digested fine?

TH - not that they are digested fine, but they don't cause a problem. Digest slower. Paper may take a couple of weeks. If shredded, can become floaties, which you want. if there is a petroleum based coating, you run the risk of it getting into your food supply. If there are enough micro organisms, can eventually be broken down.

Ashlee - it breaks down, doesn't go away. Wax itself is probably not an issue, but you don't want plastic coating and films, that could affect food.

Q - has this been done regionally, for power? RF100, could this power the plant? How can we put this on a regional level so that it becomes another clean energy source, at the power plant level.

Ashlee - some wastewater plants run their power partly off of the power produced.

Whitney - how is contamination on large scale handled (ie, a kid puts the entire plate and plastic forks in the system)?

TH – there is a device called waste express - takes paper, plastic, etc. centrifuges the stuff.

On a smaller level for the government center - you could have gas lamps around city hall. Dog poop collected in paper can be thrown in, then power lamps. Can use for refrigeration.

**1:00pm Meeting Adjourned**