ORLANDO: Planning for Resilient Communities in the Midst of the Pandemic, Social Justice Crisis, & Climate Change Challenges

Chris Castro, LEED GA, CPB
Director, Office of Sustainability & Resilience
City of Orlando
Green Works Orlando
Office of Sustainability & Resilience

- Award-winning sustainability program called “Green Works Orlando” launched by Mayor Buddy Dyer in 2007

- Develops internal and citywide policies + programs to:
  - Protect natural resources and the environment (air, water, land)
  - Improve public health and social equity
  - Create green economy and green jobs opportunities
  - Reduce air pollution and carbon emissions
  - Enhance city resilience and adapt to climate change impacts

- Focuses on 7 key priority areas:
  - Clean Energy
  - Green Buildings
  - Local Food Systems
  - Zero Waste
  - Livability
  - Clean Water
  - Electric & Alternative Transportation

- Aligned with the Sustainable Development Goals (SDGs) and publishing our first Voluntary Local Review (VLR) in December 2020
**Equity Mapping:** uncovering the housing, energy, water, transportation, and food burdens of our residents
Green Buildings
Enabling Financing Options for Homes and Businesses

EXAMPLE OF IMPROVEMENTS:

- Solar Panels
- Insulation
- Lighting Improvements
- Water Pumps
- Roof and Windows
- Upgrades to Heating and Cooling Systems

Pamela Turner
Loan Impacts: Safety, Health, Quality of life, Credit Rebuilding
Amount of Loan: $7,231.21
Type of loan: Wind Hazard Mitigation (Roof Repair)
Mandatory LEED Silver certification for new City buildings
Green Building Incentive Program

- Majority of green buildings owned by government and academia
- First-year Property Tax rebate for healthy and high-performing buildings
  - LEED Silver: 50%
  - LEED Gold: 75%
  - LEED Platinum: 100%
- Aimed to support affordable housing developments
- New commercial/MF construction or substantial improvement (50% sf+) only
Resilience Hub Improvements to City’s Critical Facilities

• Pursuing funding for 15 facilities in FY21

• Accommodations include
  • Automatic transfer switch
  • Valves and piping for auxiliary chiller support
  • Electric infrastructure for (future) energy storage
  • Electric infrastructure for auxiliary on-site power generation.
Clean Energy
• Net-zero carbon by 2050

• **End coal-fired generation**, with a significant reduction no later than 2025, and eliminating it no later than 2027.

• **Accelerate solar and energy storage as primary strategies.** The utility also said it “will continue to monitor cost and performance developments for new and existing clean technologies, such as hydrogen and small modular reactors.”

• **Leverage future clean technologies** to ensure diversity for reliability, in order to reduce dependency on solar and storage.

• **Strive to maintain competitive rates for customers while achieving strategic goals.** The utility acknowledged that, “Advancements of this magnitude require significant investments. However, the recommendation delivers the best value.”
Citywide Rooftop Solar Potential Study – 2+ GW City-wide

Overall
Total estimated size and solar electricity production of viable roofs for Orlando, FL

- Roofs: 92%
- Roofs: 54.5K

Per roof
Median estimated system size and solar electricity production per viable roof for Orlando, FL

- Roof space: 1.2K sq ft
- Capacity: 16.3 kW DC
- Electricity: 21.6K kWh AC per yr

Total installation size (MW DC)

- Flat roof
- Low-sloping
- High-sloping
- Embedded
- Pitched

Rooftop solar capacity distribution (number of roots, < 50kW)
2019 Coop = 62 residents, 748 kW

2020 Coop currently open!

Avg. Price: $1.87/watt - $2.15/watt

SolarUnitedNeighbors.org/
Exploring Floatovolatics…
Transportation
Lymmo Electric Bus Expansion

• Goal: 100% of Lymmo BRT powered by zero-emission EV by 2025

• Adding 8 new EV buses in 2020

• 100% Grapefruit, Lime, and partial Orange lines
Recharge eMobility Hubs
Enabling Urban Agriculture

- Addressing food access and food insecurity
- Food recovery network
- Grow-A-Lot program
- Front-yard farming ordinance
- Backyard chickens
- Urban beehives
- Community garden network
- Cottage Food industry
- Food system ordinance
Urban Beekeeping Training Program

Black Bee Honey is at Water Conserv II Water Reclamation Facility.
1 hr • Orlando, FL • 🌐

How cool are these honeycombs from our beehive? We even tasted honey straight from the comb and it was delicious!
... See More
East Central Florida Regional Resilience Collaborative (ECFR2C) Structure

PROCESS PERSPECTIVE
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APA Planning for Resilient Communities

18 November 2020
100 cities become more resilient to the physical, social, and economic challenges
SHOCKS & STRESSES
SHOCKS & STRESSES

Shocks
- Cyber attack
- Civil unrest
- Discontinuity of critical services
- Extreme weather
- Flooding
- Pandemic
- Terrorism

Stresses
- Climate change
- Digitisation and new technology
- Inclusive education and capacity building
- Leadership and effective management
- Limitations in the transport network
- Growth of the population
- Poverty and inequality
- Segregation, polarisation and social cohesion
- Undermining of the society
- Unemployment
- Uneven health outcomes
Heat island effect
Segregation in The Hague

Liveability index

- Physical environment
- Employment
- Services
- Safety
- Housing
Policy solutions

IMPACT HEAT WAVE

VULNERABLE CITIZENS

DISTANCE TO GREEN SPACE
Policy solutions

IMPACT HEAT WAVE

VULNERABLE CITIZENS

GREEN ROOFS SUBSIDY
Policy solutions

IMPACT HEAT WAVE

VULNERABLE CITIZENS

POSSIBILITY SOCIAL DISTANCING
The Hague is strong and just. We are a diverse, vibrant and safe city where everyone can take part. We connect with each other, our region and the world – this helps adapt to future challenges and realise new opportunities.
SHOCKS & STRESSES

**Shocks**
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**Stresses**
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Build back stronger
Build back stronger

Crisis organisation:
- Corona Steering committee
- Corona Task force
Build back stronger

Short – mid term
• Financial Impact Analysis
• Societal Impact Analysis
• Recovery plan

Longer term:
• Corona Resilience Assessment
Corona Resilience Assessment

- Gather knowledge and ideas from our communities
- Link the different themes, work through silo’s
- Gather knowledge from the network
- Gather knowledge from earlier crises

- Use this crisis to improve our city, some ideas:
  - Greenify the city, creates work for unemployed people
  - Train unemployed people to work in education and health
  - Use the experience working from home to decrease CO2 emissions on the long term
  - How can we be better prepared for the next pandemic
Recovery plan

Corona buffer 133 million

1. Participate through work, training and guidance
2. Entrepreneurial climate for now and for later
3. Education and perspective for the youth
4. Building and sustainability for and by our residents
5. Vulnerable residents social and vital
6. Impulse to the visitor economy and city center
7. Prevent problematic debts
Action in the city

1. Sport
2. Food provision
3. Energy transition
4. Climate change adaptation
A SPORT
Street sport programs
FOOD PROGRAM
Participation kitchen
ENERGY TRANSITION
Job creation – energy academy.
In the new CROMVLIEFPARK we reuse rainwater with the URBAN WATERBUFFER.
THANK YOU!

www[resilientthehague.nl]
PLANNING IN THE MIDDLE:
using social & spatial positionality to advance sustainability and community connections
What is sustainability?
Where is resilience?
The Planner’s Dilemma

The material world is alternately presented as a sympathetic ally and an entity that was forced to collude with oppressive systems.

-- Annissa Janine Wardi, 
*Water and African American Memory*
Population Health as an indicator of Constructed Sustainability
What are we doing to preserve communities’ ability to connect to their past and their future?
Figure 2. A model of community cultural wealth. Adapted from: Oliver & Shapiro, 1995 from Tara Yosso’s Whose Culture Has Capital
RESILIENT FOOD SYSTEM
HEALTHY FOOD PRIORTY AREAS

- Prince George’s County Council
- Prince George’s County Food Equity Council
- Prince George’s County Health Department
- Prince George’s County Planning Department
CHOOSE TO BE IN COMMUNITY. EVERYWHERE.

COTTAGE CITY GARDEN
Brittney Drakeford

PhD Student
Urban Planning and Design

Senior Planner
PGC Planning Department

Culture of Health Leader
Robert Wood Johnson Foundation

Collaborator
Capital View Consult

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equity = access to opportunities

is a function of

social + physical + political

capital

resources & environment

decisions

social networks + sweat equity
How Healthy An Individual Is

is a function of

An individual’s health = medical + social

care, services, & access

BUILT ENVIRONMENT