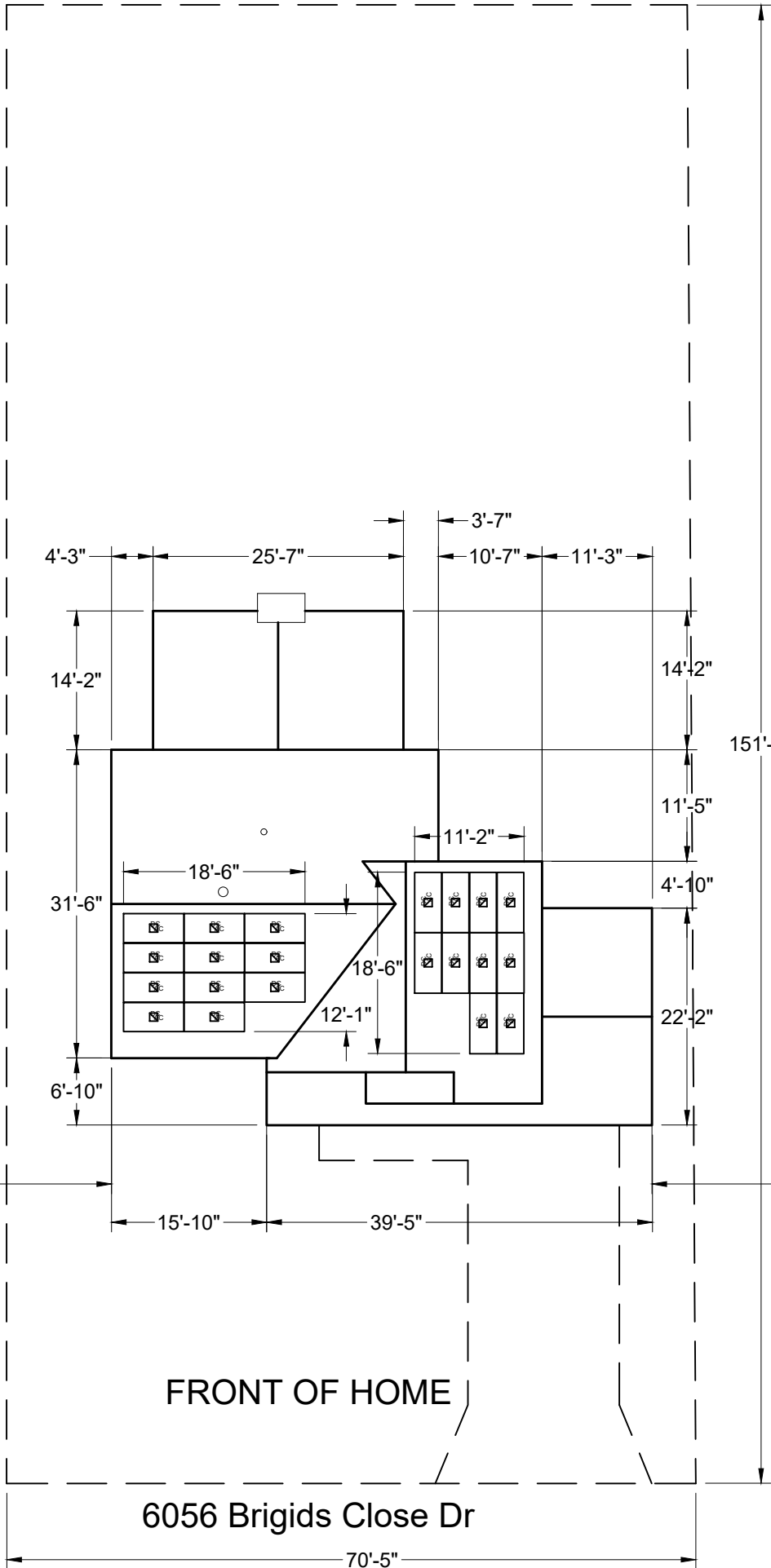
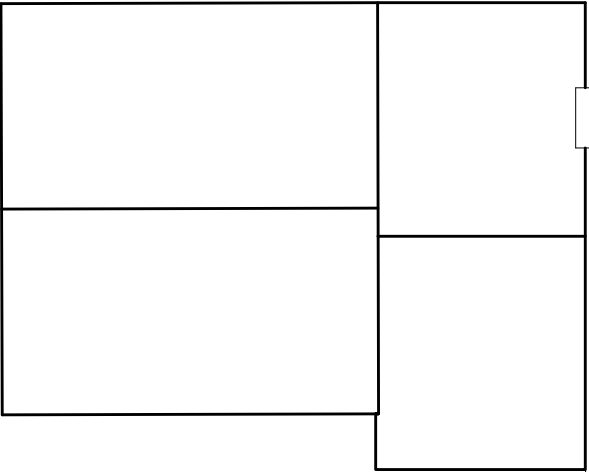


PV SYSTEM SPECIFICATIONS
TOTAL NUMBER OF MODULES: 21
MODULE MAKE AND MODEL: Q.Peak Duo ML-G10 410
MODULE WATTAGE: 410W DC

INVERTER MAKE AND MODEL: Enphase IQ8PLUS-72-2-US
INVERTER TYPE: Microinverter (1 Inverter per PV Module)
INVERTER CURRENT OUTPUT: 1.23A AC
INVERTER NOMINAL VOLTAGE: 240V
INVERTER WATTAGE: 295W AC



LEGEND

JUNCTION BOX

UTILITY METER

MAIN SERVICE PANEL

AC DISCONNECT

COMBINER BOX

LOAD CENTER

SUBPANEL

PV METER

TRANSFER SWITCH

SUNPOWER ESS

SUNPOWER HUB+

REMOTE POWER OFF

FIRE SETBACK

TRENCHING

PROPERTY LINE

SCALE: 1/16" = 1'-0"

1403 N. Research Way
Orem, UT 84097
800.377.4480
WWW.BLUERAVENSOLAR.COM

CONFIDENTIAL- THE INFORMATION
HEREIN CONTAINED SHALL NOT BE
USED FOR THE BENEFIT OF ANYONE
EXCEPT BLUE RAVEN SOLAR NOR
SHALL IT BE DISCLOSED IN WHOLE OR
IN PART TO OTHERS OUTSIDE
RECIPIENTS ORGANIZATION, EXCEPT
IN CONNECTION WITH THE SALE AND
USE OF THE RESPECTIVE EQUIPMENT,
WITHOUT THE WRITTEN PERMISSION
OF BLUE RAVEN SOLAR LLC.

PV INSTALLATION
PROFESSIONAL
Scott Gurney
#PV-011719-015866

CONTRACTOR:
BRS FIELD OPS
800-377-4480

CUSTOMER INFORMATION:
Sally Yi
6056 Brigids Close Dr
Dublin, Ohio 43017
AC SYSTEM SIZE: 6.195 kW AC
DC SYSTEM SIZE: 8.61 kW DC

DRAWING BY:
Jacob Pixton

PLOT DATE:
August 30, 2022

PROJECT NUMBER:
550892

SHEET NAME:
SITE PLAN

REVISION:
0

PAGE NUMBER:
PV2



RECORD OF DISCUSSION

Planning & Zoning Commission

Thursday, October 14, 2021 | 6:30 pm

The Planning and Zoning Commission took the following action at this meeting:

6. Solar Panel Code Amendment 21-152ADMC

Administrative Request

Proposal:	Introduction of a Code Amendment to establish general regulations in regards to solar panels for residential and commercial properties.
Applicant:	Dana L. McDaniel, City Manager, City of Dublin
Planning Contact:	Nichole M. Martin, AICP, Senior Planner
Contact Information:	614.410.4635, nmartin@dublin.oh.us
Case Information:	www.dublinohiousa.gov/pzc/21-152

RESULT: The Commission considered an Amendment to the Zoning Code to accommodate solar energy within commercial and residential districts in the City. Presently, the Code addresses these requests in a very limited manner, and greater guidance for the public, Staff, and Boards and Commissions is sought. The Commission agreed that the City should support and incentivize solar energy, when also meeting aesthetic goals, as well.

MEMBERS PRESENT:

Jane Fox	Yes
Warren Fishman	Yes
Mark Supelak	Absent
Rebecca Call	Yes
Leo Grimes	Absent
Lance Schneier	Yes
Kim Way	Yes

STAFF CERTIFICATION

DocuSigned by:

Nichole M. Martin

294AB0C6363F498...

Nichole M. Martin, AICP, Senior Planner



Ms. Fox stated that the ARB Code provides criteria for demolition. It does not provide a penalty for Code violation. What makes it difficult for Historic District property owners is that the pertinent Code sections are in different places. There are Historic Design Guidelines in addition to that Code. It is difficult for them to know and find what is applicable to them. It is important that the City begin to educate the owners of any historic properties. They should be provided educational pamphlets and a handbook with the Code and Guidelines. Otherwise, the property owners may make mistakes and be subject to penalty. She would prefer to focus on demolition of all historic properties within the City. The Appendix G listing is smaller than the total number of historic structures.

Public Comments

Ms. Martin stated that one public comment in support of the proposed amendment was received in advance of this meeting, which was included in the Commissioners' packets. No additional public comments were received.

Staff will revise the proposed Code amendment reflective of the Commission's guidance.

5. Solar Panel Code Amendment, Administrative Request, 21-152ADMC

Introduction of a Code Amendment to establish general regulations in regard to solar panels for residential and commercial properties.

Staff Presentation

Ms. Martin stated that requests for solar energy components have been increasing, both with commercial and residential applications. Existing City Code addresses renewable energy equipment and solar energy in a very limited manner. In reviewing the Code, it was found that solar panels are explicitly regulated only in the West Innovation District (WID) and Bridge Street District (BSD). The City of Dublin Zoning Code permits solar panels in the WID and BSD. In the WID, Renewable Energy is permitted as an accessory use in all districts with use-specific standards. In the BSD, Renewable Energy Equipment is permitted as an accessory use in all districts with use-specific standards. The Accessory Structures section of the Code identifies solar panels, but they are defined as an accessory structure and have no use-specific standards. To inform the discussion, Planning staff contacted municipalities in Ohio and Indiana regarding each city's current regulation of REE (solar panels, geothermal units, and wind turbines). Most of the cities contacted have specific sections within their code that provides details on if, and where, REE may be installed. The communities contacted include Blue Ash, Mason, Grove City, Westerville, Worthington, Upper Arlington, and Montgomery, Ohio, and Carmel, Indiana. Approximately 50% of the jurisdictions allowed a variety of alternative energy solutions, including solar, wind and geothermal. The discussion tonight will focus solely on solar. All of the benchmark research was provided in the meeting packet.

[Representative images shown.] Ms. Martin stated there are a variety of options available for commercial buildings. On a flat roof, the solar panels can be treated as a mechanical structure and be fully screened behind a parapet. On a commercial building with a pitched roof, the solar panels cannot be screened as a mechanical, so judgments must be made according to location on a street-facing façade, sustainability, and the community's character. Additionally, there are architecturally integrated panels available for commercial applications. These could be appropriate in the BSD and the West Innovation District. In regard to commercial sites, there are a variety of site and implementation considerations and options. Two examples are solar farms and solar vehicular

canopies. In regard to residential properties, almost every home in the City has a pitched roof, consistent with the City's Residential Standards. With pitched roofs, solar panels cannot be screened and must be exposed to the sun. There are different installation options; there is also the option of Tesla roof solar tiles. Additionally, there is the option of detached, accessory structures and residential site installations. Staff has provided a number of questions to guide the Commission's discussion:

- 1) Does the Commission support solar in all, or some, locations (residential, commercial, City-owned property, etc.) within the City of Dublin?
- 2) Should regulations vary based on land use: specifically, should roof and ground-mounted equipment be permitted in all districts?
- 3) Should Use Specific Standards regulate the location of solar panels, despite the importance of direct sun? (i.e. solar panels are currently discouraged on the fronts of homes).
- 4) Should there be guidance for solar panel installation, regardless of location, in order to meet Dublin's aesthetic goals?

Commission Questions/Discussion

Mr. Schneier stated that the images do not reflect anything desired, because the examples are aesthetically lacking. However, we do not want to prohibit these uses when the City is interested in pursuing sustainability objectives and goals. He is supportive of advancing solar energy uses, but guidance for installation or design guidelines are needed.

Mr. Fishman stated that solar panels are becoming increasingly popular. Having them on commercial buildings with flat roofs is not an issue, because they are not visible. The Tesla shingles are the most attractive of the options. There is a need to embrace technology, but it must be done aesthetically. Technology continues to improve, and in time, solar panels likely will not be discernable from the roof shingles.

Ms. Fox stated that she is supportive of solar panels in all locations. She believes that solar energy will become a right, the same as the usual utilities. She does not believe they should be based on land use. Many municipalities are doing this, and we need to do the necessary research. The proposed Code should permit solar energy in a way compatible with the community's aesthetics. She believes the City should allow this new path, with the caveat that the concerns will need to be managed.

Mr. Way stated that the 2035 vision for Dublin should declare Dublin a solar city. This technology is here, but it is changing rapidly. There are now windows that are solar panels. There probably are many solar energy options. The examples shown are old technology; the Commission can encourage pursuing the latest technology for solar energy. We probably do not want free-standing solar panels, but he is supportive of the opportunity for solar.

Ms. Call stated that she is supportive of the opportunity; however, guidance should be provided, and the location should be regulated in a manner so as to meet Dublin's high aesthetics standards. Mr. Way stated that he does not believe solar panels should be accessory structures. They should be integral to the structure.

Ms. Call stated that she sees two types. The integrated option would be part of the structure. If there is a separation of 18 inches, it is an accessory structure, similar to an air conditioning unit.

Mr. Way stated that it would need to be defined.

Mr. Fishman stated that in Dublin, it is necessary to have a permit for installation of many items. There is no reason a permit should not be required to attach a solar panel.

Ms. Call stated that Tesla roof shingles have been in existence ten years, but they are not perfected nor are they prevalent. There are other similar competitors. Most of the applications the City would receive today would be for the older technology. The standards would have to be applied to those, but the integrated option could be treated differently. If it looks like shingles, it can be treated as shingles; if it looks like a mounted solar panel, it would be treated as such.

Mr. Fishman noted that at this point in time, there might be a need to hide the panels. With future technology, that may not be necessary.

Mr. Way inquired if incentives should be granted for developing solar panel projects.

Ms. Call noted that would not be a Planning and Zoning item.

Ms. Martin stated that Mr. Way may be referring to a density bonus. All of the items being considered by the Commission would require Code changes, which means the Commission would send a recommendation to Council for decision. Several drafts would be prepared for the Commission's consideration before they would make a Code recommendation to Council.

Mr. Kim stated that solar options should be part of the review of development applications, and he would encourage this direction.

Ms. Fox noted that the Commission can make recommendations for any type of changes regarding land use.

Ms. Call stated that there is consensus on the Commission that solar energy in the City is something that the Commission believes should be incentivized. Could the communications shared with Council also include the Commission's encouragement to consider the opportunity to incentive the solar energy with development? If Council is receptive, a recommendation could be drafted and forwarded to Council for approval.

Ms. Martin indicated that it would be shared with Council. She inquired if the Commission would be supportive of requiring solar features on a large-format commercial building. For instance, if a building footprint and roof were over 20,000 square feet, would the City require that 50% of the roof space have alternative energy integrated into it?

Ms. Call stated that she would be more supportive of incentivizing than requiring. She also would encourage that the Code be sufficiently strict and rely less on interpretation. Currently, the Code requires the minimum requirements, so that is what we get.

Public Comment

No public comments were received on the case.

Staff will revise the proposed Code amendment reflective of the Commission's input.

COMMUNICATIONS

- Ms. Call indicated that she has images of well-done large-scale retail, office and big development in Eldorado Hills, California that she would like to share with staff and the Commission.

Ms. Martin responded that there is an Urban Design subfolder in the Commission's One Drive folder for inspirational images. Commissioners are encouraged to upload any mages they would like to share into that folder.

- A PZC Special Meeting has been scheduled for 1:00 p.m., Monday, October 18, for a site review of the northeast corner of Bright Road/Emerald Parkway. A revised Concept Plan for a senior housing development on the site is scheduled for November 4.
- The next regular PZC meeting is scheduled for 6:30 p.m., Thursday, November 4, 2021.

The meeting was adjourned at 9:50 p.m.



Chair, Planning and Zoning Commission



Assistant Clerk of Council

**Planning Division**

5200 Emerald Parkway • Dublin, OH 43017-1090

Phone: 614-410-4400 • Fax: 614-410-4490

Memo

To: Members of Dublin City Planning and Zoning Commission
From: Tammy Noble, Senior Planner
Date: April 21, 2022
Re: Administrative Request – Code Amendments for Renewable Energy Equipment for Residential and Commercial Zoning Districts

Summary

Recently, the Planning Division has experienced an influx of requests in residential and commercial areas for the installation of solar panels. In response, Planning has conducted a review of the existing solar panel regulations as provided in the City of Dublin's Zoning Code, and identified opportunities to broaden the scope of allowance in accordance with the Dublin Sustainability Framework accepted by City Council in 2018.

Background

In October 2021, Planning provided an introduction to the Planning and Zoning Commission on this topic specifically requesting feedback regarding regulating solar panels within the City of Dublin. At the time, Planning provided an overview of the zoning districts where solar panels are permitted today namely the West Innovation District, Bridge Street District, and Dublin Corporate Area. The presentation included discussion topics that asked if the Commission supports the use of solar panels in all zoning districts, if there should be regulations associated to location of solar panels, and any other Use Specific Standards the Commission would require. The Commission supported solar panels in all districts and acknowledged that the City should be supportive of sustainability efforts. The Commission discussed technological advancements of the solar industry and that the City has to be flexible as these advancements continue to occur. The Commission recommended regulating the location of solar panels in instances that they are not visible from the public rights of way to the extent possible.

Details

In response to the discussion, Planning has drafted language that accommodates renewable energy equipment – solar in all residential and commercial zoning districts including PUDs, Planned Unit Development Districts provided that renewable energy equipment is not specifically addressed within the development text.

The proposed amendments establish a new section within the General Development Standards that permits renewable energy equipment – solar (i.e. solar panels) in all zoning districts. The Code language is similar to the existing language provided in the Bridge Street District with alternation to address traditional suburban development. Regulations are provided for ground-mounted and roof-mounted equipment. Consistent with the BSD, roof-mounted renewable

energy is limited eighteen inches above the roofline of a building and ground-mounted equipment is screened to the extent possible. To facilitate a user-friendly review process, the proposed Code language allows solar panels to the side and rear of a building with an administrative approval of a Certificate of Zoning Plan Approval. This process is an internal review process and does not require a public meeting. The language allows solar panels to be located to the front of a building with the approval of a Minor Project review through the Administrative Review Team. The Administrative Review Team is a public meeting that is conducted with representatives of all divisions of the City and directors of each division are appointed to the board. This allows for a more collaborative review of solar panels in more prominent locations of a site and make requirements based on this visibility.

Amendments are proposed to clarify that renewable energy equipment is considered an accessory use in all zoning districts and that ground-mounted renewable energy equipment is considered a detached accessory structure. The City of Dublin Zoning Code has an existing definition for renewable energy equipment so no additional modifications have been made to this section of the Code.

Recommendation

Planning recommends Planning and Zoning Commission recommend **approval to City Council** for an Administrative Request – Code Amendment to provide regulations accommodating renewable energy equipment – solar in all zoning districts.

To: Members of Dublin City Council
From: Dana L. McDaniel, City Manager
Date: September 20, 2018
Initiated By: Nick Plouck, Management Assistant
J.M. Rayburn, Planner I
Re: Community Services Advisory Commission Recommendation for a Dublin Sustainability Framework

Background

In September 2017, staff began working with the Community Services Advisory Commission (CSAC) to create a sustainability framework for the City of Dublin. Over the last year, the commission has heard from a variety of regional sustainability partners and staff members.

The focus of the presentations and discussion that took place were framed around three specific questions: Where have we been? Where are we now? Where should we be? Framing the conversation around these three questions allowed presenters to highlight the City's history of implementing sustainable practices, and outline the challenges and opportunities that exist for the City moving forward.

An initial draft of the Dublin Sustainability Framework was presented to CSAC in April 2018, and the commission provided comprehensive feedback at that time. A final draft, including recommendations, was presented at the August 2018 CSAC meeting, at which time the commission voted to approve the framework.

This plan is set to be completed in 2020 and is meant to be an iterative process. By achieving the goals and objectives set forth in this document, the City will set a strong baseline for sustainable success. While the majority of the framework is focused at the operational and policy level, there is one specific goal within the plan that staff would like to highlight:

- Create an External Advisory Group – In the spirit of continuous improvement, staff would like to establish an external advisory group for the purpose of receiving input and feedback on an ongoing basis to update the Dublin Sustainability Framework. Members would serve a two-year term, meeting on a quarterly basis. A list of potential member organizations are as follows:

<u>Organization</u>	<u>Number of Representatives</u>
○ Community Services Advisory Commission	1
○ Planning and Zoning Commission	1
○ Dublin City Schools (1 staff, 1 student)	2
○ Ohio University (1 staff, 1 student)	2
○ Homeowners Association Presidents	3
○ Business Community Members	3

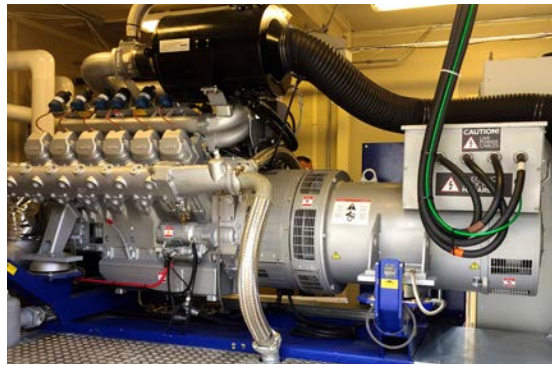
- | | |
|--|---|
| ○ Multi-Tenant Building Owners | 2 |
| ○ Historic Dublin Business Association | 1 |
| ○ Mid-Ohio Regional Planning Association | 1 |
| ○ Dublin Chamber of Commerce | 1 |
| ○ City of Dublin | 2 |

Recommendation

The Community Services Advisory Commission is recommending acceptance of this strategic framework. Staff recommends and requests Council to adopt the framework by motion, and authorize staff to establish the External Advisory Group by motion. Should Council have any questions or comments regarding this project please contact Nick Plouck, Management Assistant at 614.410.4456 or JM Rayburn, Planner I, at 614.410 4653.

2018-2020
**Sustainability
Framework**

NOTE FROM THE CITY MANAGER



Dear Residents,

Cities are the leaders when it comes to creating sustainable, resilient communities. By modeling and encouraging sustainable practices and environmental stewardship our City and staff are committed to creating a healthier, stronger Dublin. To make good on this commitment, we are leading the way by investing in LED lighting, clean fuels, combined heat and power, and geothermal cooling systems. This plan represents another significant milestone as we continue to green city operations and improve the quality of life for our community.

The Dublin Sustainability Framework has helped us set measurable objectives and identify action steps and strategies to meet our goals. To build upon this momentum, we will look for our community to join us in future updates to the Dublin Sustainability Framework and develop our vision for a sustainable, healthy, resilient future. As City Manager, I am committed to doing what it takes to ensure this vision reaches and positively impacts all Dublin residents and businesses. On behalf of City staff, I thank our City Council, its Community Services Advisory Commission and residents for their leadership, passion, and guidance in establishing the Dublin Sustainability Framework.

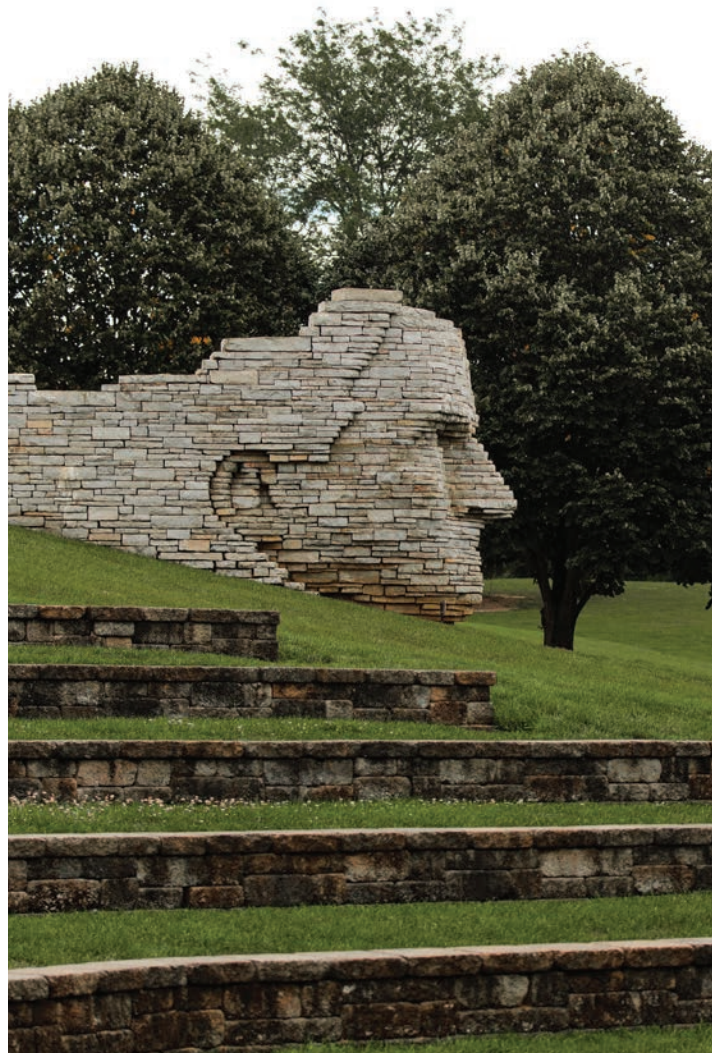
Thank you,

A handwritten signature in black ink, appearing to read 'Dana McDaniel'.

Dana McDaniel
City Manager

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INTRODUCTION

GOAL OF CITY COUNCIL AND IN ADHERENCE TO MORPC'S SUSTAINABILITY AGENDA

As humanity pushes up against the limits of the ecosystem to provide resources and absorb waste, we need to find ways to continue growth while reducing the environmental impact of that growth¹. The City of Dublin has long been committed to sustainable practices and environmental stewardship. In an effort to ensure a green future for generations to come, the City has set forth the following goals and objectives.

Strategies: Develop a comprehensive Sustainability Plan that incorporates the MORPC 2017 – 2020 Regional Sustainability Agenda:



* Reduce per capita energy consumption and promote alternative fuel resources to increase affordability and resilience of regional energy supplies.



* Protect natural resources and mitigate infrastructure vulnerabilities to maintain a healthy ecosystem and community.



* Position central Ohio to attract and retain economic opportunity to prosper as a region and compete globally through sustainable practices and solutions.



* Create sustainable neighborhoods to improve residents' quality of life.



* Increase regional collaboration and educational opportunities to advance innovative sustainability solutions.



¹ (Intelligent Community Forum, 2018)

TEAM MEMBERS

MICHELLE CRANDALL

Office of the City Manager

LORI BURCHETT

Division of Planning

SCOTT MONCRIEF

Division of Park Operations

NICK PLOUCK

Office of the City Manager

ERIN DUFFEE

Division of Recreation Services

RHONDA WHITE

Division of Park Operations

J.M. RAYBURN

Division of Planning

BRAD CONWAY

Division of Building Standards

SHAWN KRAWETZKI

Department of Parks & Recreation

DARRYL SYLER

Division of Fleet Management

MICHAEL HIATT

Division of Planning

MATT GUTHRIE

Division of Park Operations

BRIAN ASHFORD

Division of Facilities Management

RICHARD HANSEN

Division of Planning

JEREMY GERSTACKER

Division of Community Events

JOHN HYATT

Division of Fleet Management

JOANNE SHELLY

Division of Planning

MICHAEL HENDERSHOT

Division of Engineering

JUSTIN QUISUMBING

Communications and Public
Information

RICK FRANTZ

Office of Digital Transformation
& Innovation

JOHN BABYAK

Division of Street & Utilities
Operations

KYLE KRIDLER

Division of Economic Development

LAURIE WRIGHT

Division of Planning

JIMMY HOPPEL

Division of Planning

DEVAYANI PURANIK

Division of Planning

BARBARA RAY

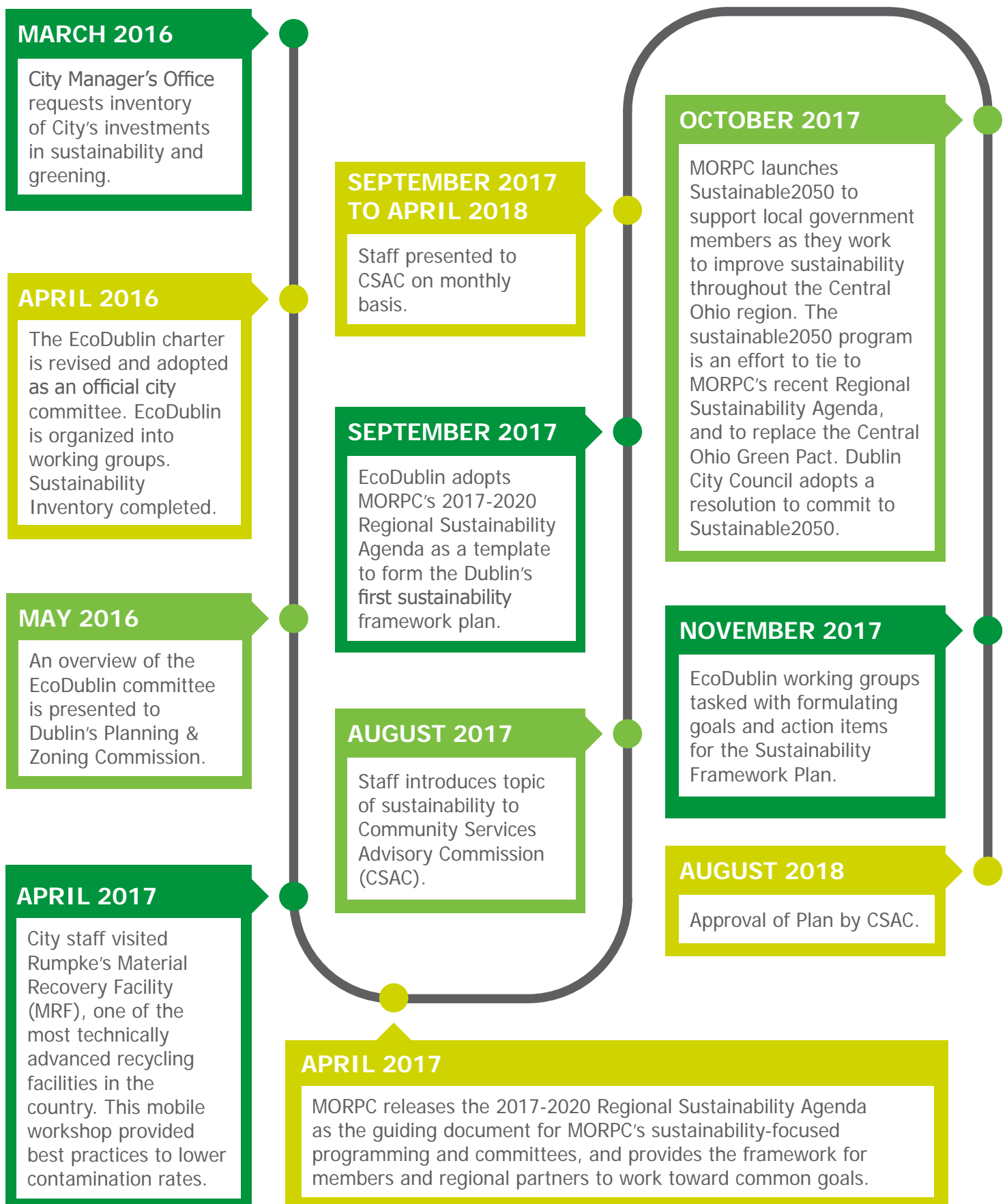
Division of Recreational Services

JOSEPH MYERS

Office of the City Manager



PROCESS TIMELINE



SUSTAINABILITY MILESTONES

- 2000** Native plant alternatives are implemented on all new park development projects and right-of-way maintenance areas in lieu of aggressive or invasive plants.
- 2001** City Annual Report is placed online for the first time, initiating a concentrated effort toward decreasing the number of printed copies yearly.
- 2005** Parks begin prioritizing Low Impact Design (LDI) when possible during park development projects.
- 2006** Begin using refillable mugs at the Dublin Irish Festival in an effort to reduce the amount of total waste generated during the festival.
- 2008** City requires a recycling container be paired with all trash container groupings during city events.
- City replaces over 100 metal halide lights at the Service Center with new, energy efficient lights that consume one third the amount of electricity; saving an estimated \$3000 annually.
- The Dublin Community Recreation Center implements an educational recycling program as a component of the summer camp curriculum.
- 2009** City receives \$184,000 in Federal stimulus funds to install energy efficient lighting at the Dublin Recreation Center, Fleet Maintenance facility, and the warehouse at the Service Center. As a result of these facility improvements, the City receives almost \$28,000 in AEP rebates.
- 2010** A 2,310 square foot green roof is installed on a portion of the Dublin Community Recreation Center (DCRC). The roof decreases stormwater runoff and increases energy efficiency at the DCRC.
- 2011** The City begins composting food and utensils from the Emerald club, food vendors, and entertainer hospitality during the Dublin Irish Festival.
- 2012** City replaces fluorescent light bulbs at the Development Building with more energy efficient bulbs; saving an estimated \$6000 annually.
- City retrofits approximately 180 parking and street lights with energy efficient LED fixtures at City facilities and parks; saving an estimated \$16,000 annually.
- The City of Dublin installs two 'level two' electric vehicle charging stations on the west side of the DCRC.
- City opens a new compressed natural gas (CNG) fueling station at the City's Fleet facility through a partnership with IGS Energy, Clean Fuels Ohio, the Department of Energy and the City of Columbus.
- 2013** City of Dublin encourages sustainable development as a component of the Bridge Street District Code.
- 2014** The City's Fleet Operations implement a paperless Vehicle Maintenance Request program.
- 2015** City of Dublin partners with IGS Generation and Hull & Associates to implement a Combined Heating and Power (CHP) System that produces electricity and usable thermal energy through the same input fuel source; saving an estimated \$13,333 annually.
- A geothermal system is installed to provide cooling for the Dublin Recreation Center; saving an estimated \$10,000 annually.
- 2017** The City executes its first Property Assessed Clean Energy (PACE) Grant in an effort to incent energy efficiency, renewable energy, and water conservation projects within aging office buildings.
- 2018** The City of Dublin Fleet is awarded the Leading Public Fleet Award for Green Sustainability at the Advanced Clean Transportation Expo.

A GREEN DUBLIN

BY THE NUMBERS

1,464 ACRES
OF GREENSPACE



3,295
MILES
RIDDEN
ON LIME BIKES



131
MILES OF
BIKEPATHS



650
TREES PLANTED
PER YEAR



\$50,000
ANNUALLY IN
FUEL SAVINGS



30
YEARS
TREE CITY USA®



 **CURBSIDE
DIVERSION**

RECYCLING DIVERTED
4,929 TONS ANNUALLY



YARD WASTE DIVERTED
3,143 TONS ANNUALLY




382





CERTIFIED BACKYARD
WILDLIFE HABITATS


AMOUNT OF ELECTRICITY SAVED
A YEAR FROM SUSTAINABLE PRACTICES:
900,000 KWH



613
GREENSPOT
MEMBERS

 **557 HOUSEHOLDS**

 **55 BUSINESSES**

 **1 COMMUNITY GROUP**

GOAL OVERVIEW

SUSTAINABLE NEIGHBORHOODS AND BUILT ENVIRONMENT

- Adopt Complete Streets Policy by 2018
- Increase shared use path network by 1%
- Update Zoning Code to encourage sustainable development
- Provide opportunities to implement energy conservation practices

NATURAL RESOURCES

- Increase pollinator-friendly areas
- Conduct major water monitoring evaluations
- Increase public awareness and education for peaceful co-existence with wildlife
- Develop wildlife management proposals
- Collaborate with Dublin City Schools and Emerald Campus to add an environmental science track
- Increase resident participation in Community Gardens and Certified Backyard Wildlife Habitats

CITY OPERATIONS

- Transition Boards, Commissions, and City Council to becoming 100% paperless
- Educate staff on City Procurement and Purchasing Policy regarding preference for products derived from recycled materials
- Mitigate idling by City vehicles

RECYCLING AND DIVERSION

- Increase the community's diversion rate
- Increase the Dublin Irish Festival diversion rate
- Increase internal (employee) recycling

ENERGY AND AIR QUALITY

- Install a Solar Energy Array at a City facility
- Install new chillers at the Dublin Community Recreation Center that take full advantage of the City's Geothermal system
- Replace interior lighting at the Dublin Recreation Center with LED fixtures
- Reduce City vehicle emissions and dependence on petroleum fuel
- Assist residents and corporate residents in reducing emissions by providing alternative fueling choices to the public

MOBILITY

- Support economic development
- Promote equitable access to mobility
- Expand multimodal options citywide
- Preserve our environs by focusing future growth
- Implement strategies to encourage sustainable transportation options and behavior

COMMUNITY ENGAGEMENT

- Increase GreenSpot membership
- Increase exposure of Dublin sustainability
- Create an external advisory group
- Create a sustainability webpage

ECONOMICS

- Engage with green companies & increase awareness
- Increase Green Encouragement Programs
- Create a Green Business Roundtable

SUSTAINABLE NEIGHBORHOODS & BUILT ENVIRONMENT



The City of Dublin strives to create neighborhoods and business districts that are connected, integrated, and environmentally friendly. These are places where people can live, work, move, and thrive in a healthy, equitable way.

GOAL #1 Adopt a Complete Streets Policy.

Measure – City Council adopts a Complete Streets Policy by end of 2018.

- Draft a policy for review by City Departments.
- Provide an informational memo to City Council.
- Forward a policy to City Council for review and adoption.

GOAL #2 Increase the number of shared-use path miles.

Measure – Build an additional 1% of shared-use paths by 2020.

- Identify network gaps.
- Prioritize connections to fill identified gaps.
- Seek external funding opportunities for additional projects.
- Collaborate with surrounding jurisdictions to expand regional connections with a focus on a regional greenway connection.

SUSTAINABLE NEIGHBORHOODS & BUILT ENVIRONMENT

GOAL #3 Update the Zoning Code to encourage sustainable development practices.

Measure – City Council adopts updates to the Zoning Code by 2020 that encourages sustainable development practices.

- Update the Zoning Code to encourage sustainable best practices; specifically update the following:
 - Material requirements to reflect advances in sustainable materials use.
 - Lighting code to allow: flexibility for LED technology; and promote 'dark skies' initiatives; and help reduce per capita energy consumption.
 - Develop standards for single family homes
 - On-site stormwater management
 - Landscape standards
 - Renewable energy systems and energy conservation
 - Identify gaps within City pedestrian and shared-use path facilities and prioritize infill path connections
 - Walkability: pedestrian friendly scaled development, increased connectivity
 - Low Impact Development
 - Incorporate LEED principles into zoning code
 - Built form, encourage consideration of building orientation that take into consideration passive solar and opportunities to reduce heat loads
 - Landscape selections should reflect best practices and should reduce or eliminate irrigation and encourage use of native species, increase tree canopy.



GOAL #4 Provide opportunities to implement energy conservation practices.

Measure — Conduct audit of existing conditions, measure on a yearly basis to assess how many energy best practices have been implemented compared to MORPC Franklin County audit.

- Provide energy audits for existing buildings.
- Consider tax credits for energy efficient building materials and upgrades
- Consider tax credits for alternative energy supply
 - Electric Vehicle (EV) stations
 - Public workshop/education event
 - Upgrades to mechanical equipment for more energy efficient options
 - Consider LEED standards for city facilities
- Encourage sustainable building practices for all types of development.
 - Audit the existing codes to identify restrictions to sustainability efforts

NATURAL RESOURCES



The City of Dublin strives to create a community that is environmentally healthy for humans and wildlife through the preservation of parks, open space, rights-of-way, watershed, streams and rivers. We work to protect habitats, adapt open spaces, parks, and city space to incorporate native plants and trees, create buffer zones along our waterways and encourage diversity of species. We work to engage the community in actively adapting their private properties as well as becoming aware of the habitat and life around them for ways to peacefully co-exist. Maintaining sustainable habitats and using our resources carefully improves both beauty and quality of lives for all.

GOAL #1 Increase pollinator-friendly areas.

Measure – Add a minimum of 5 native plant areas annually to open space and right-of-ways.

- Evaluate potential space in parks, open space, and rights-of-way.
- Mesh native and wildlife-friendly species with city zoning requirements and ornamentals.
- Collaborate with landscape architect on areas being created or reworked.
- Determine blends of native plants for various habitats and styles.
- Research areas where habitat can be left 'rough' to aid winter wildlife.
- Engage volunteer, scout, and school groups to help develop areas where appropriate.

GOAL #2 Develop wildlife management proposals

Measure – Prepare management plans for deer, coyote, and skunk by 2020.

Measure – Train 10 Park Ambassadors to conduct bio surveys and provide public education for park visitors.

- Create a framework for skunk mitigation.
- Implement habitat modification for goose control.
- Work with property owners to reduce goose reproduction on private properties.
- Engage Park Ambassadors and Park Explorers to assist with management efforts.
- Create pre-hike orientation videos for 3 Dublin city parks.

NATURAL RESOURCES

GOAL #3 Conduct major water monitoring evaluations.

Measure – Achieve at least 4 evaluations annually.

- Create monthly data summary of conductivity and temperature for 2018-2020.
- Engage community groups and interns for survey and photograph records.
- Utilize Ohio Environment Protection Agency data collection methods.
- Collaborate with OEPA, Franklin County Soil and Water, and other agencies.
- Select 4 key areas of the city streams and river to do repeat annual testing and create a comparison database.
- Purchase the conductivity and temperature equipment for monthly data collection.
- Purchase portable education testing equipment to be used for classes and by City volunteers.
- Conduct 2-4 annual Healthy Water Healthy People public programs through the Healthy Brochure and additional DiRECT Parks programs.

GOAL #4 Increase public awareness and education for peaceful co-existence with wildlife.

Measure – Conduct at least 5 community/Home Owners Association (HOA) wildlife information sessions annually.

Measure – Achieve at least 4,000 uses of nature education website pages and social media posts annually.

- Create a seasonal calendar to give out to the public.
- Utilize web and social media to improve public awareness and education.
- Collaborate with Communications and Public Information to create seasonal magnet and design at least 4 Info and How-To wildlife videos.
- Offer DiRECT neighborhood programs and DCRC classes on wildlife.
- Provide HOA meet-ups and community education.
- Create a seasonal calendar of species and issues.



GOAL #5 Collaborate with Dublin City Schools and Emerald Campus to add an environmental science track.

Measure – Prepare an Environmental Education curriculum proposal to present to the Emerald Campus Director and planning board by 2019.

- Develop a curriculum around pre-college coursework for wildlife and habitat management education.
- Collaborate with Emerald Campus Director to outline curriculum.
- Collaborate with Central Ohio conservation and environmental education agencies to design curriculum.

GOAL #6 Increase resident participation in Community Gardens and Certified Backyard Wildlife Habitats.

Measure – Add 30 or more certified backyard habitats to the City annually.

- Provide two classes on certified backyard habitats annually.
- Identify a space for a second community garden.
- Create a design plan for second community garden.
- Certify at least 1 city habitat annually.

CITY OPERATIONS



The City of Dublin believes in leading by example. We will improve our operations and promote better development practices. In advancing city operations we will **seek to optimize efficiency and improve environmental sensitivity.** By directing our agencies to use the City's purchasing power and investment incentives to encourage job creation, we will provide a framework for our entire community to come together and solve these challenges. These strategies represent the initial steps toward a greater goal of becoming a Zero Waste operation.

GOAL #1 Transition Boards, Commissions, and City Council to becoming paperless.

Measure – Achieve 100% paperless by 2020.

- Issue all councilmembers, board members and commissioners city-owned tablets.
- Develop process for agendas, minutes and packets to be accessed in digital form via city-issued tablets and/or technology present in Council Chambers.

GOAL #2 Mitigate Idling by City Vehicles.

- Review Administrative Order 3.15.
- Educate city personnel regarding no-idling policy for city vehicles.

GOAL #3 Educate Staff on City Procurement and Purchasing Policy regarding preference for products derived from recycled materials.

- Review and update (if needed) Administrative Orders 1.13 and 4.4.
- Educate city personnel regarding established city procurement and purchasing policy (e.g. AO 1.13 and 4.4).

RECYCLING AND DIVERSION

The City of Dublin has a long history of leading the way in central Ohio by providing recycling to our residents free of charge. This recycling program has evolved over the years to accommodate and encourage increased recycling and **diversion of waste from our landfills. Educational efforts, resizing of recycling bins, community and neighborhood recycling events, and an e-waste drop-off location** are a few of the ways the City has worked to improve community waste diversion.

According to the Solid Waste Authority of Central Ohio (SWACO), the Franklin County Sanitary Landfill (FCSL) receives just over one million tons of Municipal Solid Waste (MSW) every year. Between 60 to 70% of all the waste that comes to the landfill could have been recycled or diverted. For the past few years, Dublin's residential diversion rate (the amount diverted from the landfills) has remained consistently around 47% to 49%. Significant opportunities exist for residents to recycle even more and to increase this diversion rate substantially. This will require the City to examine ways to provide expanded recycling options and associated education to public employees, residents and businesses. The goals, measurements and action items listed below, reflect these opportunities.

GOAL #1 Increase the community's diversion rate.

Measure – Increase the City's diversion rate from 49% to 55% by 2020.

- Implement a community education and awareness campaign.
- Provide more opportunities for residents to recycle or donate a broader range of items through drop-off sites and community/neighborhood events.
- Evaluate feasibility for adding recycling to existing trash receptacles in City Parks.
- Explore residential and commercial composting options.
- Work in partnership with SWACO and other local organizations to accomplish this goal.

GOAL #2 Increase the Dublin Irish Festival diversion rate.

Measure – Increase the Dublin Irish Festival diversion rate from 23% to 30% by 2020.

- Explore hiring a professional waste management company.



- Meet with stakeholders to improve onsite operations.
- Continue to improve on-site education and awareness of recycling.

GOAL #3 Increase internal (employee) recycling.

Measure – Employee survey demonstrating increased awareness and recycling efforts.

- Implement an internal education and awareness campaign.
- Increase the number of recycling containers and types of items recycled.
- Decrease the products purchased that contribute to the waste stream and landfill

ENERGY AND AIR QUALITY



According to the US Energy Information Administration, approximately 80 percent of the country's energy comes from non-renewable sources. While renewable sources have grown steadily over the past few years, the U.S. is still far from a level that is appropriate to address air quality and climate change issues. Additionally, Franklin County has been designated as an Ozone Non-Attainment area for several years. One of the Mid-Ohio Regional Planning Commission's (MORPC) Sustainable 2050 Goals for all member communities is to "Reduce emissions to meet federal air quality standards". The City of Dublin can have a positive impact on these issues by continuing to focus on conserving energy and transition to renewable and cleaner energy sources.

Two areas of greatest focus related to air quality and energy have been with **the City's facilities and fleet operations. Since 2012, the Division of Facilities Management has completed several energy saving projects, including lighting retrofits in city buildings and parking lots, and the installation of a geothermal cooling system, a combined heat and power system and a green roof at the Dublin Community Recreation Center. Additionally, when HVAC and other equipment is replaced, new equipment is selected based upon energy efficiency. Since 2012, the Division of Fleet Management has also completed several air quality and energy saving projects including the construction of a compressed natural gas station, the purchase of 63 CNG vehicles, the testing and use of a high performance clean diesel (HPCD) and the recycling of all shop oils and oil filters.**

In the next few years, efforts to continue greening our facilities and fleet are outlined in the goals below.

ENERGY AND AIR QUALITY

GOAL #1 Install a Solar Energy Array at a City Facility.

Measure – Provide at least 15% of the facility's electricity demand from the solar installation.

- Identify funding for a Solar Assessment to determine the costs and benefits of installing solar panels and to identify the best facility for the installation.
- Develop funding mechanism and technical specifications for a solar project.
- Issue RFP and/or bid for a solar project.

GOAL #2 Install new chillers at the Dublin Community Recreation Center that take full advantage of the City's Geothermal system.

Measurement – Reduce the amount of electricity purchased from the utility community to less than 1.5 million KWHs per year.

- Identify manufacturers that can provide chillers that can effectively operate with the cooler water temperatures that the geothermal system can provide. Cooler water temperatures translate in less energy being consumed by the two chillers. May also translate into smaller chillers which would also reduce energy consumption.
- Develop projections of energy savings that can be expected from the new chillers
- Develop bid documents that specify the technical specifications required to achieve the optimal energy savings.

GOAL #3 Replace interior lighting at the Dublin Community Recreation Center with LED fixtures.

Measure – Achieve at least 90 percent of fixtures converted to LEDs.

- Develop implementation plan and budget for lighting replacement. Assessment will include projected rebates from utility company.
- Determine projected energy savings from each phase of the conversion.
- Develop implementation schedule and obtain quotes for implementing each phase of the conversion.



GOAL #4 Reduce City vehicle emissions and dependence on petroleum fuel.

Measure – Achieve 20% reduction in vehicle emissions by 2020.

- Continue to purchase and/or lease alternative fuel vehicles and fuels that improve efficiency and reduce emissions.
- Evaluate and install anti-idling devices on vehicles as appropriate.
- Increase employee education related to idling and awareness of environmental impacts.
- Test and adopt other emerging software and technologies to improve fuel efficiency and reduce emissions.
- Participate in the Smart Vehicle Corridor testing with City vehicles.

GOAL #5 Assist residents and corporate residents in reducing emissions by providing alternative fueling choices to the public.

Measure – Increase the number of privately owned vehicles (individual and corporate) using the City's CNG station or electric vehicle charging stations by 20%.

- Continue to keep the CNG station open to the public.
- Install additional electric vehicle charging stations in strategic locations throughout the community.
- Promote the availability of the CNG station and the electric vehicle charging stations.

MOBILITY



Provide our increasingly diverse community access to a range of transportation options. Connecting more people to more places.

GOAL #1 Support economic development.

Measure – Create a mobility plan for workforce development and business community.

- Assess the mobility needs for Dublin businesses and workforce.
- Create a circulator system that serves the workforce and connects amenities.
- Continuously monitor and evaluate the mobility needs of our business and workforce community.

GOAL #2 Expand multimodal options citywide.

Measure – Pilot at least two non-automotive transportation projects.

- Pilot a bikeshare program.
- Improve wayfinding within the City's shared use path network.
- Create a destination oriented path and sign system.

GOAL #3 Implement strategies to encourage sustainable transportation options and behavior.

Measure – Implement at least three of five transportation options from objectives within the Mobility Study.

- Help fund pedestrian and bicycle facilities in existing neighborhoods to improve mobility.
- Target bicycle and pedestrian infrastructure that connects residential neighborhoods and commercial business districts.
- Target transit network development to offer more mobility options for residents, workers, and students.
- Emphasize multi-modal facilities when updating policy documents, particularly the Community Plan and the Special Area Plan.
- Draft a "mobilize your neighborhood" grant program that would target connectivity strategies as identified by residents in their neighborhood. (Similar to Beautify Your Neighborhood Grants)

MOBILITY



GOAL #4 Promote equitable access to mobility.

Measure – Create a circulator that provides greater mobility options for older adults and individuals with disabilities.

- Assess the mobility needs of older adults and individuals with disabilities.
- Identify all private shuttles in an effort to consolidate operations and attract funding partners.
- Continuously monitor and evaluate the mobility needs of our senior and individuals with disabilities.

GOAL #5 Preserve our environs by focusing future growth.

Measure – Improve walkability in all Dublin neighborhoods.

- Map gaps in the shared use path network, and use map to prioritize five year Capital Improvement Plan (CIP) Parks and Recreation shared use path program
- Create Community Hubs at nexus locations between low-density/residential and commercial service centers.
- Engage electric cart service providers.

COMMUNITY ENGAGEMENT



Increase local and regional collaboration and education opportunities to advance innovative, sustainable solutions.

GOAL #1 Increase GreenSpot membership.

Measure – Increase membership by 50% by 2020.

- Market GreenSpot program through City website.
- Encourage businesses, nonprofit organizations, and residents engaged with the City to become GreenSpot members.
- Require all City of Dublin buildings to be registered as GreenSpot members by 2020.

GOAL #2 Increase exposure of Dublin sustainability.

- Produce periodic highlight of sustainable efforts.
- Actively participate in MORPC's Sustainable2050 program.
- Continue Dublin's engagement with the USDN Regional Network.
- Promote sustainability during City Events.
- Promote sustainable events in the City of Dublin.
- Leverage Communications and Public Information in promoting sustainability efforts.

GOAL #3 Create an external advisory group.

Measure – Host inaugural meeting by the close of 2018.

- Identify potential members.
- Create scope of work and purpose for the team.
- Extend invitations.

GOAL #4 Create a sustainability webpage.

Measure – Have initial webpage launched by the end of 2018.

- Identify appropriate format for sustainability webpage.
- Create logic for all necessary categories, resources, links, etc.
- Collect all necessary information needed for creation of webpage.

ECONOMICS



Create an ecosystem that encourages and supports the growth of environmentally friendly businesses, buildings, markets and technology.

GOAL #1 Engage with green companies and increase awareness.

- Create an inventory of existing Dublin green companies and organizations.
 - Include attributes such as numbers of employees, their industry and a short description on why they are considered a 'green company'.
- Align with Smart Dublin initiatives that will have a positive impact on the environment.
 - Transportation/ Sensors / Energy Engineering Firms / Energy Efficiency/Air Quality Measurements / Weather.

GOAL #2 Increase green encouragement programs.

- Continue PACE and Building Efficiency Programs.
- Develop a LEED Certification Incentive.
- Create Brochure/Information to share with prospective companies/builders around sustainability, and include guiding document on options.

GOAL #3 Create a green business roundtable.

- Host an annual Round Table Event for Green Companies.

GLOSSARY

BIOSWALES

Bioswales are shallow, vegetated channels that slow down and infiltrate storm water runoff. Bioswales use an engineered soil sub-base made of topsoil, sand and compost. The vegetation and rocks in the trench reduce the velocity of the runoff and filter suspended sediments from the water. Bioswales are best suited along roadways and parking lots and sometimes act as pre-treatment devices for other storm water management practices.

CAPITAL IMPROVEMENT PLAN (CIP)

A capital improvement plan is a dynamic community planning and fiscal management tool used to coordinate the location, timing, and financing of capital improvements over a multi-year period. It is critically important and one of the major responsibilities for a government entity.

COMPRESSED NATURAL GAS (CNG)

Compressed natural gas is a fuel which can be used in place of gasoline, diesel fuel and propane. CNG combustion burns cleaner than the fuels mentioned above.

CREEK RESTORATION

Creek restoration is the process of uncovering and restoring natural rivers or creeks that were modified by development. Restored creek beds provide a natural path that slows runoff and removes pollutants from the water. Creek restoration uses plants and vegetation to help absorb and control the flow of runoff. Creek restoration is best suited for waterways that experience major flooding in rain events and or adjacent to large developments.

GASOLINE GALLON EQUIVALENT (GGE)

Gallon of Gasoline Equivalent is the typical way CNG is sold at public fueling stations and the typical way that CNG tanks are rated.

GREEN ROOFS

A green roof is covered in vegetation that helps reduce the amount of storm water runoff from the top of a building or structure. Green roofs generally consist of multiple layers, including a waterproof membrane, an insulation layer, growing media and vegetation. The layers retain storm water, which eventually evaporates from the plants or growing media or it gradually trickles down, reducing the demand on storm drainage during rain events. Green roofs are best suited for areas where open space or other BMPs are not suitable.

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The main parts of an HVAC system are a heating, a ventilation, and an air-conditioning unit(s). Furthermore, modern systems include an air filtration and cleaning element as well.

MID-OHIO REGIONAL PLANNING COMMISSION (MORPC)

MORPC is an association of cities, villages, townships, counties and regional organizations serving Central Ohio. The organization brings communities of all sizes and interests together to collaborate on best practices and plan for the future growth of Central Ohio. MORPC does this through a variety of programs, services, projects and initiatives – all with the goal of improving the lives of residents and making Central Ohio stand out on the world stage.

OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA)

The Ohio EPA protects the environment and public health by ensuring compliance with environmental laws and encouraging environmental stewardship.

OPEN SPACE

Open space is an area of land set aside during the development process for public or private use, or as open space and may include forests, stream buffers, floodplains and wetlands. Little maintenance

GLOSSARY

is required and the spaces provide storm water management benefits. These spaces reduce the amount of impervious surface in developments which helps retain runoff and lower the amount of pollutants entering the waterways. Open space is best suited in or around areas with dense development.

PROPERTY ASSESSED CLEAN ENERGY (PACE)

PACE is an innovative financing structure for improving buildings through energy efficiency and alternative energy projects. Established in Ohio in 2009 as a form of energy special improvement districts (ESID) for energy projects under Ohio Revised Code (ORC) 1710. The Columbus-Franklin County Finance Authority administers PACE financing for Central Ohio businesses, non-profits and local governments.

PERMEABLE PAVEMENTS

Alternatives to concrete and asphalt, permeable pavements allow rainfall to pass through and infiltrate into the ground below. Permeable pavement includes pervious concrete, porous asphalt, interlocking concrete pavers and grid pavers. Storm water moves through the surface of the pavement into a storage layer below and then slowly seeps into the soil. This technique is best suited for pavement areas with low speeds like parking lots and sidewalks. Planter boxes are rectangular, enclosed spaces generally implemented below the line of pavement. Openings in the vertical walls allow storm water to gradually run from the impervious surface into the planter box. Storm water temporarily pools in the box and slowly infiltrates through layers of vegetation, soil and gravel into the ground. Planter boxes are suited to urban areas where space is limited.

RAIN GARDENS

Rain gardens are vegetated depressions that collect and treat storm water. The runoff flows downhill into the basin, where it collects into a pool. Over time, the runoff seeps into the soil where some of it is used by the plants. The vegetation in rain gardens is generally native to the area to encourage infiltration and biofiltration. Rain gardens are best suited for small areas of land, like a residential yard or a parking lot barrier.

RETENTION PONDS

Retention ponds hold water from storm events for extended periods of time, controlling the amount of storm water runoff. These ponds hold permanent bodies of water, which slows runoff and allows sediments and pollutants to settle to the bottom. Underground pipes connect storm drains to retention ponds where small amounts of water are released gradually. Retention ponds are best suited for large areas where water can be diverted and recharge ground water as needed.

STREET TREES

Common in urban areas, street trees reduce runoff by collecting rainfall from streets, sidewalks and parking areas. Storm water runoff is captured and stored in the roots and leaves and then released to the atmosphere through evapotranspiration. Tree roots and fallen leaves also improve runoff infiltration in the soil. Street trees slow and store runoff which decreases flooding and erosion. Additional benefits of street trees are shade for pedestrians and aesthetics. Street trees are best suited along roadways, sidewalks, or parking areas.

UNDERGROUND STORAGE

Underground storage holds storm water runoff during peak flows. Rain water runs into an underground storage chamber. Once the chamber is filled, the runoff is either slowly discharged into an underdrain or directly into the groundwater. Underground storage slows the runoff and reduces the demand placed on storm water drains during large rain events. The chambers also reduce the chance of flooding and combined sewer overflow. Underground storage is best suited for areas that cannot accommodate water retention facilities.

URBAN SUSTAINABILITY DIRECTOR'S NETWORK (USDN)

The USDN is a peer-to-peer network of local government professionals from cities across the United States and Canada dedicated to creating a healthier environment.