

City of Flint, Michigan

*Third Floor, City Hall
1101 S. Saginaw Street
Flint, Michigan 48502
www.cityofflint.com*



Meeting Agenda - Final

Wednesday, August 18, 2021

5:00 PM

ELECTRONIC PUBLIC MEETING

GOVERNMENTAL OPERATIONS COMMITTEE

*Eva L. Worthing, Chairperson, Ward 9
Maurice D. Davis, Vice Chairperson, Ward 2*

*Eric Mays, Ward 1
Kate Fields, Ward 4
Herbert J. Winfrey, Ward 6*

*Santino J. Guerra, Ward 3
Jerri Winfrey-Carter, Ward 5
Monica Galloway, Ward 7*

Allan Griggs, Ward 8

Inez M. Brown, City Clerk

Davina Donahue, Deputy City Clerk

SPECIAL PUBLIC NOTICE -- ELECTRONIC PUBLIC MEETING

PUBLIC NOTICE FLINT CITY COUNCIL ELECTRONIC PUBLIC MEETING

On Friday, October 5, 2020, the Michigan Supreme Court (MSC) issued an order declaring that the Emergency Powers of Governor (EPG) Act as an unconstitutional delegation of legislative authority, which was the primary authority relied on by Governor Whitmer for her COVID-19 related executive orders. Subsequently, Governor Whitmer requested that the MSC clarify that their order does not go into effect until October 30, 2020. On Monday October 12, 2020, the Michigan Supreme Court rejected Governor Whitmer's request to delay the effect of its decision to strike down the EPG. On Tuesday, October 13, 2020, Senate Bill 1108 passed, amending the Open Meetings Act to allow municipalities to hold electronic meetings. On Friday, October 16, 2020, Governor Whitmer signed into law Senate Bill 1108 amending the Open Meetings Act. Subsequently, on December 22, 2020, Public Act 267 of 1976 was amended through Senate Bill 1246 extending the electronic meetings with no reason through March 31, 2021. The act also allows that after March 31, 2021, electronic meetings may be held if a local state of emergency was declared. On March 23, 2020, the Flint City Council extended Mayor Neeley's declaration of emergency indefinitely due to the COVID-19 pandemic. Therefore, this meeting will be held electronically.

Pursuant to Act 267 of the Public Acts of 1976 Open Meetings Act as amended and Flint City Charter Section 3-202, notice is hereby given that the Flint City Council hereby calls for Regular Meetings of the Flint City Council scheduled to be held as follows:

Flint City Council Committee Meetings (Finance, Governmental Operations, Legislative & Grants) Wednesday, August 18, 2021, at 5 p.m.

The public and media may listen to the meeting online by live stream at <https://www.youtube.com/c/FlintCityCouncilMeetings> or through Start Meeting by dialing (617) 944-8177. If unable to call in, please dial (206) 451-6011.

1. In order to speak during the PUBLIC SPEAKING PERIOD of each meeting by telephone, participants will also call (617) 944-8177. (If unable to call in, please dial (206) 451-6011):
 - a. All callers will be queued and muted until the Public Speaking portion of each agenda;
 - b. Public speakers will be unmuted in order and asked if they wish to address the City Council ON ANY SUBJECT;
 - c. Public speakers should state and spell their name for the record and will be allowed two (2) minutes for public speaking during each meeting;
 - d. The speaker will be returned to mute after the 2 minutes have expired;
 - e. After the telephonic public speakers for the last committee meeting are completed, emailed public comments will be read by the City Clerk. All emailed public comments will be timed for 2 minutes;
 - f. Per Rules Governing Meetings of the Council (Rule 7.1 VII), there will only be one speaking opportunity per speaker per meeting.

Consequently, public participants who call in and speak during the public speaking period of the meetings WILL NOT have written comments as submitted read by the City Clerk.

2. The public may send public comments by email to CouncilPublicComment@cityofflint.com no later than 10 minutes prior to the meeting start time of 5 p.m.

3. Persons with disabilities may participate in the meeting by the above-mentioned means or by emailing a request for an accommodation to CouncilPublicComment@cityofflint.com, with the subject line Request for Accommodation, or by contacting the City Clerk at (810) 766-7418 to request accommodation - including but not limited to interpreters.

If there are any questions concerning this notice, please direct them to City Council office at (810) 766-7418.

ROLL CALL

MEMBER REMOTE ANNOUNCEMENT

Pursuant to the newly revised Open Meetings Act, each Council member shall state that they are attending the meeting remotely and shall state where he or she is physically located (county or city and state).

MEMBER CONTACT INFORMATION

Eric Mays - (810) 922-4860; Maurice Davis - mdavis@cityofflint.com; Santino Guerra - sguerra@cityofflint.com; Kate Fields - kfields@cityofflint.com; Jerri Winfrey-Carter - jwinfrey-carter@cityofflint.com; Herbert Winfrey - (810) 691-7463; Monica Galloway - mgalloway@cityofflint.com; Allan Griggs - agriggs@cityofflint.com; Eva Worthing - eworthing@cityofflint.com.

PROCEDURES ON CONDUCTING ELECTRONIC MEETINGS

All boards and commissions must adhere to all laws established under the Michigan Compiled Laws and in accordance with the revisions to the Open Meetings Act adopted in Senate Bill 1246, as passed on December 17, 2020, and signed into law on December 22, 2020, and subsequent amendments that may be adopted.

READING OF DISORDERLY PERSONS CITY CODE SUBSECTION

Section 31-10, Disorderly Conduct, Assault and Battery, and Disorderly Persons, and will be subject to arrest for a misdemeanor. Any person who prevents the peaceful and orderly conduct of any meeting will be given one warning. If they persist in disrupting the meeting, that individual will be subject to arrest. Violators shall be removed from meetings.

PUBLIC SPEAKING

Per the amended Rules Governing Meetings of the Council (as adopted by the City Council on Monday, June 12, 2017), two (2) minutes per speaker. Only one speaking opportunity per speaker.

COUNCIL RESPONSE

Per the amended Rules Governing Meetings of the Council (as adopted by the City Council on Monday, June 12, 2017), Councilpersons may respond to any public speaker, but only one response and only when all public speakers have been heard. Individual council response is limited to two minutes.

SPECIAL ORDERS

210276 Special Order/Master Fee Schedule/Street Light Fees

A Special Order as requested by Council Vice President Davis to discuss street light fees in the Master Fee Schedule.

RESOLUTIONS

- 210376 Update/Support Operations Plan (SEOP)/City of Flint/Genesee County Emergency Management Program

Resolution resolving that the Flint City Council approves the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint. [NOTE: The Genesee County Sheriff's Office has requested that the city adopt an updated Support Operations Plan, which was developed to identify the responsibilities between the City of Flint and Genesee County in regards to pre-disaster emergency management activities, and provides for City of Flint government agencies to respond to various types of emergencies or disasters that affect the community.]

APPOINTMENTS

- 210157 Appointment/Water System Advisory Council/Nancy Love

Resolution resolving that Mayor Neeley hereby appoints Nancy Love (1351 Beal Avenue, Ann Arbor, MI 48109) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

- 210229 Appointment/Water System Advisory Council/Shawn P. McElmurry

Resolution resolving that Mayor Neeley hereby appoints Shawn P. McElmurry (2153 Engineering Building, 5050 Anthony Wayne Drive, Detroit, MI 48202) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

- 210395 Appointment/Water System Advisory Council/Jaron Houston

Resolution resolving that Mayor Neeley hereby appoints Jaron Houston (2621 East Court Street, Flint, MI 48503) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

- 210396 Appointment/Water System Advisory Council/Gina Smith

Resolution resolving that Mayor Neeley hereby appoints Gina Smith (210 West

Flint Park Boulevard, Flint, MI 48505) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

210398 Mayoral Appointment/Chief Financial Officer/Robert Widigan

Resolution resolving that the Flint City Council approves the recommendation by Mayor Sheldon Neeley to appoint Robert Widigan as Chief Financial Officer [at an hourly compensation rate of \$64.90 per hour (\$135,000.00 annually).] [General Fund Salary and Wages Acct. No. 101-191.100-703.000 = \$91,967.90 and LCSM-17-FRTA = \$43,032.10.] [NOTE: The difference in compensation between the Interim Chief Financial Officer and Chief Financial Officer is retroactive to August 16, 2021.]

DISCUSSION ITEMS

210210 Referral/Monthly Reports/Drinking Water Quality

Referral by Councilperson Griggs to PUBLIC HEALTH ADVISOR, re: He would like for the city's Public Health Advisor to provide monthly drinking water quality reports. [Referral Action Date: 4/22/2021 @ City Council Grants Committee Electronic Public Meeting.]

210208 Referral/Conversion to LED Lights

Referral as requested by Councilperson Fields to ADMINISTRATION: re, She asks that the administration look into large-scale conversion to LED lights. [Referral Action Date: 4/22/2021 @ City Council Governmental Operations Committee Electronic Public Meeting.]

210205 Discussion Item/Names of Those Driving City-Owned Vehicles

Referral by Councilperson Mays to ADMIN/FLEET, re: He would like the names of employees/appointees driving city-owned vehicles. [Referral Action Date: 4/14/2021 @ City Council Electronic Public Meeting.]

210118 Discussion Item/Snow Plowing Strategy

A Discussion Item as requested by Councilperson Winfrey-Carter to talk about the city's snow plowing strategy with Transportation Director John Daly. [Referral Action Date: 2/22/2020 @ Electronic City Council Meeting.]

210116 Discussion Item/Job Requirements/Salaries

A Discussion Item as requested by Councilperson Galloway to talk about job requirements and salaries for appointees. [Referral Action Date: 2/22/2020 @ Electronic City Council Meeting.]

210114 Discussion Item/Eighteen (18) Properties in the City of Flint Pilot Program

A Discussion Item as requested by Councilperson Mays to review the 18 properties City Council retained from the Genesee County Land Bank, including a history of the finances for Jefferson School. [Referral Action Date: 2/17/2020 @ Electronic Governmental Operations Committee Meeting.]

210100 Discussion Item/Multi-Member Bodies

A discussion item as requested by Councilperson Mays to discuss multi-member bodies. [Referral Action Date: 2/22/2021 @ City Council Electronic Public Meeting.]

210099 Discussion Item/Community Updates/City of Flint Web Site

A discussion item as requested by Councilperson Mays to discuss what constitutes a community update on the City of Flint's Web site. [Referral Action Date: 2/22/2021 @ City Council Electronic Public Meeting.]

ADJOURNMENT



210376

RESOLUTION NO.: _____

PRESENTED: AUG - 4 2021

ADOPTED: _____

**RESOLUTION AUTHORIZING CITY OFFICIALS TO ADOPT THE SUPPORT
OPERATIONS PLAN OF THE CITY OF FLINT AND TO APPOINT THE COUNTY
EMERGENCY MANAGEMENT COORDINATOR AS THE EMERGENCY
MANAGEMENT COORDINATOR FOR THE CITY OF FLINT**

BY THE MAYOR:

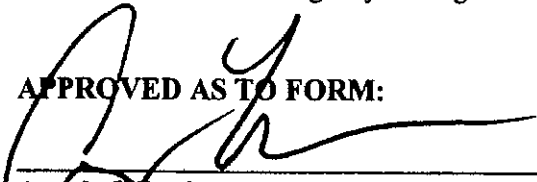
The City of Flint has elected to be incorporated into the Genesee County Emergency Management Program and has developed a Support Emergency Operations Plan.

The Office of the Genesee County Sheriff has requested that the City adopt an updated Support Operations Plan. The Support Operations Plan has been developed to identify the responsibilities between the City of Flint and Genesee County in regards to pre-disaster emergency management activities. It also provides for the City of Flint government agencies to respond to various types of emergencies or disasters that affect the community.

The Mayor, Sheldon A. Neeley, recommends the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint.

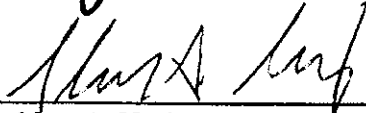
IT IS RESOLVED that the Flint City Council approves the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint.

APPROVED AS TO FORM:



Angela Wheeler, Chief Legal Officer

FOR THE CITY OF FLINT:



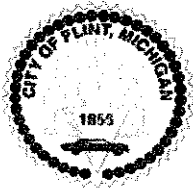
Sheldon A. Neeley, Mayor

APPROVED AS TO FINANCE:

Shelbi Frayer, Chief Financial Officer

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

**RESOLUTION AUTHORIZING CITY OFFICIALS TO ADOPT THE SUPPORT
OPERATIONS PLAN OF THE CITY OF FLINT AND TO APPOINT THE COUNTY
EMERGENCY MANAGEMENT COORDINATOR AS THE EMERGENCY
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BY THE MAYOR:

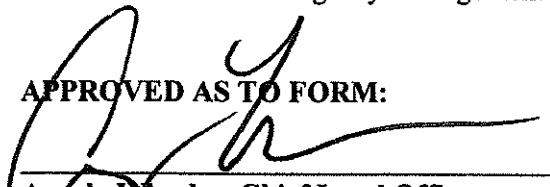
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IT IS RESOLVED that the Flint City Council approves the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint.

APPROVED AS TO FORM:




Angela Wheeler, Chief Legal Officer

FOR THE CITY OF FLINT:

Sheldon A. Neeley, Mayor

APPROVED AS TO FINANCE:



Shelbi Frayer (Jul 30, 2021 17:25 EDT)

Shelbi Frayer, Chief Financial Officer

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 07/30/2021

BID/PROPOSAL# NA

AGENDA ITEM TITLE: RESOLUTION AUTHORIZING CITY OFFICIALS TO ADOPT THE SUPPORT OPERATIONS PLAN OF THE CITY OF FLINT AND TO APPOINT THE COUNTY EMERGENCY MANAGEMENT COORDINATOR AS THE EMERGENCY MANAGEMENT COORDINATOR FOR THE CITY OF FLINT

PREPARED BY Vicky Cooper, *Legal Department*

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

The City of Flint has elected to be incorporated into the Genesee County Emergency Management Program and has developed a Support Emergency Operations Plan.

The Office of the Genesee County Sheriff has requested that the City adopt an updated Support Operations Plan. The Support Operations Plan has been developed to identify the responsibilities between the City of Flint and Genesee County in regards to pre-disaster emergency management activities. It also provides for the City of Flint government agencies to respond to various types of emergencies or disasters that affect the community.

The Mayor, Sheldon A. Neeley, recommends the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint. It is requested that the Flint City Council approves the adoption of the Support Operations Plan of the City of Flint and the appointment of the County Emergency Management Coordinator as the Emergency Management Coordinator for the City of Flint.

FINANCIAL IMPLICATIONS: none

BUDGETED EXPENDITURE? YES ☒ NO ☐ IF NO, PLEASE EXPLAIN:

Dept.	Name of Account	Account Number	Grant Code	Amount



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

**RESOLUTION AUTHORIZING CITY OFFICIALS TO ADOPT THE SUPPORT
OPERATIONS PLAN OF THE CITY OF FLINT AND TO APPOINT THE COUNTY
EMERGENCY MANAGEMENT COORDINATOR AS THE EMERGENCY
MANAGEMENT COORDINATOR FOR THE CITY OF FLINT**

BY THE MAYOR:

The City of Flint has elected to be incorporated into the Genesee County Emergency Management Program and has developed a Support Emergency Operations Plan.

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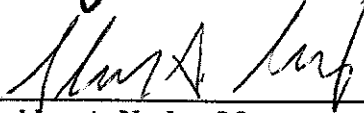
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APPROVED AS TO FORM:



Angela Wheeler, Chief Legal Officer

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED AS TO FINANCE:

Shelbi Frayer, Chief Financial Officer

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 07/30/2021

BID/PROPOSAL# NA

AGENDA ITEM TITLE: RESOLUTION AUTHORIZING CITY OFFICIALS TO ADOPT THE SUPPORT OPERATIONS PLAN OF THE CITY OF FLINT AND TO APPOINT THE COUNTY EMERGENCY MANAGEMENT COORDINATOR AS THE EMERGENCY MANAGEMENT COORDINATOR FOR THE CITY OF FLINT

PREPARED BY Vicky Cooper, *Legal Department*

VENDOR NAME: N/A

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FINANCIAL IMPLICATIONS: none

BUDGETED EXPENDITURE? YES ☒ NO ☐ IF NO, PLEASE EXPLAIN:

Dept.	Name of Account	Account Number	Grant Code	Amount

SUPPORT EMERGENCY OPERATIONS PLAN GUIDE

**A GUIDE TO ASSIST MUNICIPALITIES INCORPORATED INTO THE COUNTY
EMERGENCY MANAGEMENT PROGRAM TO DEVELOP A SUPPORT EMERGENCY
OPERATIONS PLAN**

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INTRODUCTION TO THE GUIDE

I. Purpose

This document is designed to serve as a guide for municipalities with a population of 10,000 residents or above that have elected to incorporate into the County Emergency Management Program and need to develop a Support Emergency Operations Plan (EOP) following the Administrative Rules for Section 19, 1976 PA 390, as amended. In accordance with these rules, the Support EOP shall be consistent with the County Emergency Operations Plan and will become part of the county plan.

The preparation of a Support EOP will increase emergency preparedness through the definition of the responsibilities of local departments and agencies. The plan assigns tasks that need to be accomplished when an incident occurs, and describes how local and county emergency management efforts are related. Maintaining a current Support EOP also establishes eligibility to receive Section 19 funding in accordance with Section 19 of 1976 PA 390, as amended. If federal assistance does not become available after the Governor has declared a State of Disaster or Emergency, affected counties and municipalities can be eligible to receive state assistance up to \$100,000 or 10% of their operating budget, whichever is less, to cover certain disaster related expenses. To be eligible for Section 19 funding, municipalities with a population of 10,000 and above that do not maintain an independent emergency management program must develop and submit a Support EOP to the county, and implement that plan in a timely manner at the beginning of the incident.

II. Scope

This document provides basic guidance and a template for the development of a Support EOP. The template (Attachment B) contains general information that can be adapted to any municipality. The annexes specify how the municipality will carry out common emergency support functions.

Also included with this document is a sample Emergency Management Resolution (Attachment B) that appoints the County Emergency Management Coordinator as the Emergency Management Coordinator of the municipality, and outlines how emergency management efforts on the local level are organized in relation to the County Emergency Management Program.

If either template is used, it should be reviewed and adjusted to the specific needs of each municipality. Municipalities that do not utilize the templates can develop individual plans or resolutions. Other available guiding materials for the development of EOPs include MSP/EMSHD Pub 201 (Local Planning Workbook) and FEMA Comprehensive Preparedness Guide 101.

III. Maintenance

Pub 204 has been developed by MSP/EMHSD and is maintained to ensure compliance with current national planning standards and relevant state laws pertaining to emergency planning. This document was last updated in August 2015 and supersedes the October 2011 version. It will be updated every four years.

DEVELOPING THE PLAN

All stakeholders that are involved in the community response to emergencies and disasters should be involved in the development of the Support EOP. The County Emergency Management Program should work with the municipality to ensure that the plan is compatible with the County Emergency Operations Plan. A standardized planning approach can be used for the development of the Support EOP.

I. Plan requirements

The Administrative Rules for Section 19 of 1976 PA 390, as amended, establish four requirements for the development of Support EOPs. In accordance with these requirements, Support EOPs shall:

1. **Describe the relationship between the County Emergency Management Program and the municipality:**
The plan should state that the municipality has chosen to incorporate into the county program, coordinates emergency management related matters with the county program, and has assigned the County Emergency Management Coordinator as the responsible Emergency Management Coordinator for the municipality.
2. **Identify the municipality's response procedures in relation to the county response procedures:**
The plan should establish annexes that describe common tasks that need to be accomplished when responding to an emergency or disaster, and assign responsibility for these tasks to municipal departments and other local agencies. The annexes should identify the responsible agencies on the local level that coordinate and share information with at the county level, and clarify joint responsibilities. Annexes in the Support EOP should also identify which annex or annexes they relate to in the County EOP.
3. **Be maintained in accordance with the standards and currentness of the county plan, be consistent with the county plan:**
The efforts described in local and county plans should be consistent and complement each other. To maintain the Support EOP in currentness with the County EOP, updates to the local plan are necessary whenever the county plan is updated. When the County EOP is updated, the Support EOP should be revised to ensure that it is still compatible with the county plan.
4. **Contain the signature of the Chief Executive Official (CEO) of the municipality, be forwarded to the county:**
After a new Support EOP has been developed or an existing plan has been updated, the signature of the CEO (Mayor, Township Supervisor) needs to be obtained. If a change of the CEO occurs, the plan needs to be reviewed and the signature of the new official obtained. After the plan is signed, a copy must be forwarded to the County Emergency Management Program, where it should be filed with the County EOP.

II. Plan format

The plan should consist of a Basic Plan section and functional annexes.

The Basic Plan defines the purpose of the plan, provides a community profile, identifies hazards and community vulnerabilities, and describes the relationship between municipality and the County Emergency Management Program.

The annexes identify specific emergency management and response tasks that need to be accomplished before, during and after an incident, and assign responsibility for carrying out these tasks to local agencies. Annexes should be organized by emergency response functions or tasked agencies and can be written in narrative or bulleted style. While municipalities are not required to mirror the format used in the county plan, this can be beneficial. The template included with this document uses a bulleted "Emergency Action Guidelines" format for its annexes.

III. Planning process

The following seven step planning process also utilized in County EOP development should be used to develop a Support EOP. For additional information on the process steps, please refer to MSP/EMSHD Pub 201 (Local Planning Workbook).

1. **Form a collaborative planning team:**
The planning team is the group of individuals responsible for designing, developing, and implementing the Support EOP. It should include representatives from all agencies that are committed to participate in emergency response activities within the municipality. Other stakeholders that should be engaged in

the planning process include representation from the municipality's executive office, the County Emergency Management Program, agencies that can provide insight into necessary accommodations for groups or individuals requiring Functional Needs Support Services (FNSS), schools, etc.

2. Identify hazards and assess risks:

The hazard analysis is the foundation upon which the municipality's emergency planning efforts should be built. It identifies conditions or situations that have the potential to cause harm to people or property in the community. The hazard analysis process involves four steps.

Step 1: A profile of the community is developed (demographic and economic make-up, geography and land-use, key facilities, etc.).

Step 2: The development of a community profile is followed by the hazard identification, which should start with a review of the County Hazard Analysis or Hazard Mitigation Plan. Local resources should then be used to identify further hazards that are unique to the community and might not have been included in county documents.

Step 3: The assessment of risks explores how likely it is that a risk will manifest itself in an incident, how often this might occur, where it might occur, and what the severity of impact would be. Hazards should be ranked based on the expected frequency of occurrence and severity of impact.

Step 4: The vulnerability determination examines how susceptible citizens, property, infrastructure and critical systems are to the identified hazards.

3. Determine Goals and Objectives:

Developing clear goals and objectives will help the municipality to identify problems, issues and opportunities. Establishing goals outlines the vision of what the community wants to achieve. Goals can be pursued in the long-term, but need to be achievable. Objectives are specific and measurable strategies to achieve these goals. Often, multiple objectives will need to be established to support one goal.

4. Plan Development:

This step describes the conceptualization of the plan, which includes the generation and comparison of alternate strategies to achieve the established goals and objectives. This involves two tasks: Developing and analyzing courses of actions to be conducted during an incident, and identifying the resources that determine the capability of the municipality to take these actions. Developing actions allows planners to depict how an operation unfolds by building and working through a portrait of a potential event, including key decision points and participant activities. This helps to identify actions that occur and resources that will be required throughout the progression of an event.

After identifying potential strategies to achieve established goals, an important sub-step in the conceptualization of the plan is the evaluation of actions to ensure that the actions that are selected to be included in the plan are feasible. It is critical to determine if required resources are available or easily obtainable during an incident, and if actions are compliant with laws and regulations, such as local ordinances and resolutions, legal authorities, law enforcement standards, and Governor's orders and directives.

5. Plan Preparation, Review and Approval:

When writing the plan, a simple format should be used. The finished plan must be compatible with the County EOP. This can be achieved by including references to the county plan, utilizing a similar format, or organizing annexes after similar emergency response functions. Feedback should be solicited from all stakeholders that are tasked within the plan, the County Emergency Management Program, and local elected officials. After the review process, necessary adjustments should be implemented. The municipality should adopt the plan by resolution, obtain the signature of the CEO, and forward a signed copy of the plan to the County Emergency Management Program.

6. Plan implementation and update:

The last step is to implement, maintain and update the plan. Plan updates are required after change of the CEO or when the County EOP has been updated. Plan reviews should also be considered after plan activations (during incidents or exercises), changes in operational resources, and changes in the community and/or hazard profile of the municipality. Lessons learned from actual events and exercises are essential to the evaluation of a plan's effectiveness, and help to determine if the plan is:

- Adequate: The concept of operations identifies and addresses critical tasks effectively.
- Feasible: Critical tasks can be accomplished timely and with available resources.
- Acceptable: The needs and demand driven by an event are met, actions meet the expectation of local officials and the public, and are consistent with law.
- Complete: The plan includes all necessary tasks, steps and required capabilities to reach an identified desired end state.
- Compliant: The plan complies with guidance and doctrine to the highest extent possible.

FEMA Comprehensive Preparedness Guide 101 established adequacy, feasibility, acceptability, completeness and compliance as criteria that allow planners and decision makers to determine the efficiency and effectiveness of their plans.

EMERGENCY MANAGEMENT RESOLUTION

In addition to the development of a Support EOP, it is recommended that municipalities adopt a local Emergency Management Resolution. The Emergency Management Resolution should appoint the County Emergency Management Coordinator as the Emergency Management Coordinator responsible for the municipality, describe the local emergency management organization and its relationship to the County Emergency Management Program, and provide a means for the local legislative body to exercise the authority vested in them by 1976 PA 390, as amended. Attachment A provides a sample Emergency Management Resolution.

ATTACHMENT A: SAMPLE EMERGENCY MANAGEMENT RESOLUTION

The following pages provide a sample Emergency Management Resolution. If used as a template, the sample resolution should be reviewed by municipality and county, and adjusted to meet local needs. Before adoption, the resolution should be reviewed by the municipality's legal counsel.

**City of Flint
Emergency Management Resolution**

A resolution to provide for the mitigation, preparedness, response and recovery from natural and human-made disasters within City of Flint by being part of the Genesee emergency management program; to appoint the county emergency management coordinator as the City of Flint emergency management coordinator; to provide for a means for coordinating the resources of the municipality with those of the county; and to provide a means through which the City Council may exercise the authority and discharge the responsibilities vested in them by this resolution and Act No. 390 of the Public Acts of 1976, as amended.

Article 1 - Short Title

Section 101. This resolution shall be known as the "Emergency Management Resolution".

Article 2 – Definitions

Section 201. For the purpose of this resolution, certain words used herein are defined as follows:

- (a) "Act" means the Michigan Emergency Management Act, Act No. 390 of the Public Acts of 1976, as amended.(b) "Disaster" means an occurrence or threat of widespread or severe damage, injury or loss of life or property resulting from a natural or human-made cause, including but not limited to, fire, flood, snowstorm, ices storm, tornado, windstorm, wave action, oil spill, water contamination, utility failure, hazardous peacetime radiological incident, major transportation accident, hazardous materials incident, epidemic, air contamination, blight, drought, infestation, explosion, or hostile military action or paramilitary action, or similar occurrences resulting from terrorist activities, riots, or civil disorders.
- (c) "Disaster relief force" means all agencies of county and municipal government, private and volunteer personnel, public officers and employees, and all other persons or groups of persons identified in the Genesee Emergency Operations Plan as having duties to perform or those called into duty or working at the direction of a party identified in the plan to perform a specific disaster or emergency related task during a local state of emergency.
- (d) "District Coordinator" means the Michigan Department of State Police District Emergency Management Coordinator. The District Coordinator serves as liaison between local emergency management programs and the Michigan State Police, Emergency Management Division in all matters pertaining to the mitigation, preparedness, response and recovery of emergency and disaster situations.
- (e) "Emergency management coordinator" means the person appointed to coordinate all matters pertaining to emergency management within the municipality. The emergency management coordinator for City of Flint is the Genesee emergency management coordinator.
- (f) "Emergency management program" means a program established to coordinate mitigation, preparedness, response and recovery activities for all emergency or disaster situations within a given geographic area made up of one or several political subdivisions. Such a program has an appointed emergency management coordinator and meets the program standards and requirements established by the Department of State Police, Emergency Management Division. The City of Flint has elected to be part of the Genesee emergency management program.
- (g) "Emergency operations plan" means the plan developed and maintained by county and political subdivisions included in the emergency management program area for the purpose of responding to all emergency or disaster situations by identifying and organizing the disaster relief force.

- (h) "Governor's state of disaster" means an executive order or proclamation by the Governor that implements the disaster response and recovery aspects of the Michigan Emergency Management Plan and applicable local plans of the county or municipal programs affected.
- (i) "Governor's state of emergency" means an executive order or proclamation by the Governor that implements the emergency response and recovery aspects of the Michigan Emergency Management Plan and applicable local plans of the county or municipal programs affected.
- (j) "Local state of emergency" means a declaration by the Mayor ¹ pursuant to the act and this resolution which implements the response and recovery aspects of the Genesee Emergency Operations Plan and authorizes certain actions as described in this resolution.
- (k) "Vital records" means those records that contain information needed to continue the effective functioning of a government entity jurisdiction and for the protection of the rights and interests of persons under emergency conditions in the event of an emergency or disaster situation.

Article 3 - Emergency Management Coordinator; Appointment

Section 301. By the authority of this resolution the Mayor hereby appoints the Genesee Emergency Management Coordinator as the emergency management coordinator for City of Flint.² In addition to acting for, and at the direction of, the Mayor, the Emergency Management Coordinator will also act for, and at the direction of, the Mayor.³

Section 302. A line of succession for the Genesee Emergency Management Coordinator has been established and is listed in the City of Flint Emergency Operations Plan.

Article 4 - Emergency Management Coordinator; Duties

Section 401. The Emergency Management Coordinator shall comply with standards and requirements established by the Department of State Police, Emergency Management Division, under the authority of the act, in accomplishing the following⁴:

¹ According to Act 390, as amended, sec. 10 (1) (b) any county or municipality that has an appointed emergency management coordinator can declare a local state of emergency. This power is given to the "chief executive official" (see definitions in the act) or the official designated by charter.

² Act 390, as amended, sec. 9 (2-3) states that the coordinator shall be appointed by the "chief executive official" (see definitions in the act) in a manner provided in the municipal charter.

³ Act 390, as amended, sec. 9 (1-3) states that the appointed county coordinator shall act for and at the direction of the chairperson or county executive. It also says that a coordinator appointed by a municipality shall act for and at the direction of the "chief elected official" (see definitions in the act) or the official designated by the municipal charter.

⁴ Act 390, as amended, sec. 7a (4) gives the Emergency Management Division the authority to promulgate several standards and requirements.

- (a) Direct and coordinate the development of the Genesee Emergency Operations Plan, which shall be consistent in content with the Michigan Emergency Management Plan.
- (b) Direct and coordinate the development of the Genesee Emergency Operations Plan, which shall be consistent in content with the Michigan Emergency Management Plan.
- (c) Specify departments or agencies which must provide an annex to the plan or otherwise cooperate in its development.
- (d) Identify departments and agencies to be included in the Emergency Operations Plan as disaster relief force.
- (e) Develop and maintain a county Resource Manual.
- (f) Coordinate the recruitment, appointment, and utilization of volunteer personnel.

- (g) Assure the emergency management program meets eligibility requirements for state and federal aid.
- (h) Coordinate and/or conduct training and exercise programs for the disaster relief force within the county and to test the adequacy of the Emergency Operations Plan.
- (h) Through public information programs, educate the population as to actions necessary for the protection of life and property in an emergency or disaster.
- (i) Assist in the development of mutual aid agreements.
- (j) Assist the City of Flint municipal liaison with the development of municipal standard operating procedures which are consistent with the county Emergency Operations Plan.
- (k) Oversee the implementation of all functions necessary during an emergency or disaster in accordance with the Emergency Operations Plan.
- (l) Coordinate county emergency management activities with those municipalities included in the county emergency management program, other municipalities, the state, and adjacent counties.
- (m) Coordinate all preparedness activities, including maintaining primary and alternate Emergency Operations Centers.
- (n) Identify mitigation opportunities within the county and encourage departments/agencies to implement mitigation measures.

Article 5 - Emergency Management Liaison; Duties

Section 501. By the authority of this resolution the Mayor has appointed a liaison for the purpose of assisting the county Emergency Management Coordinator in coordinating the emergency management activities within the municipality. The duties of the liaison are as follows:

- (a) Coordinate municipal emergency management activities with those of the county jurisdictions.
- (b) Assist the county Emergency Management Coordinator with the development of the county Emergency Operations Plan and the incorporation of municipal resources into the plan.
- (c) Identify municipal departments and agencies to be included in the Emergency Operations Plan as part of the disaster relief force.
- (d) Identify municipal resources and forward information to the county Emergency Management Coordinator for inclusion in the county Resource Manual.
- (e) Coordinate the recruitment, appointment, and utilization of volunteer resources.
- (f) Assist the county Emergency Management Coordinator with administering training programs.
- (g) Coordinate municipal participation in exercises conducted by the county.
- (h) Assist in the development of mutual aid agreements.
- (i) Assist in educating the population as to actions necessary for the protection of life and property in an emergency or disaster.
- (j) Encourage departments/agencies within the municipality to identify and implement procedures to mitigate the effects of potential disasters.
- (k) Assist in the assessment of the nature and scope of the emergency or disaster and collect damage assessment information and forward to the county.
- (l) Coordinate the vital records protection program.

- (m) Develop municipal standard operating procedures for disaster response which are consistent with the county Emergency Operations Plan.

Section 502. The Mayor shall appoint a minimum of two persons as successors to the position of the municipal liaison. The line of succession shall be supplied to the county Emergency Management Coordinator.

Article 6 - Mayor; Powers; Duties

Section 601. On an annual basis, the Mayor shall review the eligibility and performance of the Emergency Management Coordinator and make recommendations to the City Council .⁴

Section 602. The Mayor shall, review the effectiveness of the Genesee County Emergency Operations Plan as the plan relates to the municipality once every two years. With the assistance of the municipal liaison, he/she shall make recommendations to the county Emergency Management Coordinator of any changes which may be needed. After this review and incorporation of necessary changes, the Mayor shall certify the plan to be current and adequate for City of Flint the ensuing two years.⁵

Section 603. When circumstances within the City indicate that the occurrence or threat of occurrence of widespread or severe damage, injury or loss of life or property from natural or human-made cause exists the Mayor may declare a local state of emergency.¹ Such a declaration shall be promptly filed with the Genesee county Emergency Management Office, who shall forward it to the Department of State Police, Emergency Management Division. This declaration shall not be continued or renewed for a period in excess of 7 days except with the consent of the City Council .⁶

Section 604. If the Mayor invokes such power and authority, he/she shall, as soon as reasonably expedient, convene the City Council for one or more emergency meetings in accordance with the Open Meetings Act to perform its normal legislative and administrative duties as the situation demands, and will

⁵ Rule 4 (c) (d-q) of the administrative rules promulgated for Act 390, sec. 19 states that the plan shall be considered official upon bearing the signature of the chief executive official of the municipality. The plan must be current and adequate (see rule) within two years.

⁶ Act 390, as amended, sec. 10 (1) (b) provides for the 7 day limit and disposition of the declaration.

report to that body relative to emergency activities. Nothing in this resolution shall be construed as abridging or curtailing the powers of the City Council unless specifically provided herein.

Section 605. The Mayor may do one or more of the following under a local state of emergency:

- (a) Direct the Emergency Management Coordinator to implement the Emergency Operations Plan.
- (b) Issue directives as to travel restrictions on local roads within the municipality.
- (c) Relieve City employees of normal duties and temporarily re-assign them to other duties.
- (d) Activate mutual aid agreements.
- (e) Direct the municipal disaster relief effort in accordance with the county Emergency Operations Plan and municipal standard operating procedures.
- (f) Notify the public and recommend in-place or evacuation or other protective measures.
- (g) Request a state of disaster or emergency declaration from the Governor as described in Article 7.
- (h) When obtaining normal approvals would result in further injury or damage, Mayor may, until City Council convenes, waive procedures and formalities otherwise required pertaining to the following:
 - (1) For a period of up to 7 days, send the disaster relief force and resources to the aid of other communities as provided by mutual aid agreements.
 - (2) For a period of up to 7 days, appropriate and expend funds from the disaster contingency fund created in Article 9 up to **\$100,000.00**
 - (3) For a period of up to 7 days, make contracts, obtain and distribute equipment, materials, and supplies for disaster purposed.
 - (4) Employ temporary workers.
 - (5) Purchase and distribute supplies, materials, and equipment.
 - (6) Make, amend, or rescind ordinances or rules necessary for emergency management purposes which supplement a rule, order, or directive issued by the Governor or a state agency. Such an ordinance or rule shall be temporary and, upon the Governor's declaration that a state of disaster or state of emergency is terminated, shall no long be in effect.⁷

Section 606. If a state of disaster or emergency is declared by the Governor, assign and make available for duty the employees, property, or equipment of the City within or without the physical limits of the City as ordered by the Governor or the Director of the Department of State Police in accordance with the act.⁸

Article 7 - Governor Declaration Request

Section 701. If a disaster or emergency occurs that has not yet been declared to be a state of disaster or a state of emergency by the Governor, and the Mayor determines that the situation is beyond control of the municipality, he/she may request the Governor to declare that a state of disaster or state of emergency exists in the municipality in accordance with the act. This shall be done by immediately contacting the Genesee Emergency Management Coordinator. The Emergency Management Coordinator shall immediately contact the District Coordinator. The District Coordinator, in conjunction with the Emergency Management Coordinator, shall assess the nature and scope of the disaster or

⁷ Act 390, as amended, sec.12 (2) provides this authority.

⁸ Act 390, as amended, sec. 10 (1) (h) provides this authority.

emergency, and they shall recommend the state personnel, services, and equipment that will be required for its prevention, mitigation, or relief.⁹

Article 8- Volunteers: Appointment: Reimbursement

Section 801. Each municipal department, commission, board, or other agency of municipal government is authorized to appoint volunteers to augment its personnel in time of emergency to implement emergency functions assigned in the county Emergency Operations Plan. Such individuals are part of the disaster relief force and shall be subject to the rules and operational control set forth by the respective department, commission, board, or agency through which the appointment was made, and shall be reimbursed for all actual and necessary travel and subsistence expenses.¹⁰

Article 9 - Disaster Contingency Fund

Section 901. A disaster contingency fund is hereby created in the budget of not less than **(enter percent of the total operating budget or an amount)**. Money may be expended from the fund when a local state of emergency has been declared for the purpose of paying the disaster relief force, purchase of supplies and services, repair costs, or other needs required specifically for the mitigation of the effects of, or in response to, the emergency or disaster.

Article 10 - Rights of Disaster Relief Force

Section 1001. In accordance with the act, personnel of the disaster relief force while on duty shall have the following rights:

- (a) If they are employees of the municipality, or other governmental agency regardless of where serving, have the powers, duties, rights, privileges, and immunities and receive the compensation incidental to their employment.
- (b) If they are not employees of the municipality, or other governmental agency be entitled to the same rights and immunities as are provided for by law.¹⁰

Article 12 - Temporary Seat of Government

Section 1201. The City Council shall provide for the temporary movement and reestablishment of essential government offices in the event that existing facilities cannot be use.

Article 13 - Liability

Section 1301. As provided for in the act and this resolution, the municipality, or the agents or representatives of the municipality, shall not be liable for personal injury or property damage sustained by the disaster relief force. In addition, any member of the disaster relief force engaged in disaster relief activity shall not be liable in a civil action for damages resulting from an act of omission arising out of and in the course of the person's good faith rendering of that activity, unless the person's act or omission was the result of that person's gross negligence or willful misconduct. The right of a person to receive benefits or compensation to which he or she may otherwise be entitled to under the worker's compensation law, any pension law, or act of congress will not be effected as a result of said activity.¹¹

Section 1302. As provided for in the act, any person owning or controlling real estate or other premises who voluntarily and without compensation grants the municipality the right to inspect, designate and use

⁹ Act 390, as amended, sec.12 states that the "chief executive official" (see definitions in act) of a county or any municipality may make this request. However, he/she must do this utilizing the procedures set forth in sec. 14 of the act which states that the appointed emergency management coordinator and the district coordinator must jointly assess the situation and make recommendations.

¹⁰ Act 390, as amended, sec. 11 (1) (a-c) discusses disaster relief force rights and duties.

¹¹ Act 390, as amended, sec. 11 (2-8) discusses liability.

the whole or any part of such real estate or premises for the purpose of sheltering persons or for any other disaster related function during a declared local state of emergency or during an authorized practice disaster exercise, shall not be civilly liable for the death of, or injury to, any person on or about such real estate or premises under such license, privilege or other permission, or for loss of, or damage to, the property of such person.¹¹

Article 14 - Sovereignty

Section 1401. Should any section, clause, or provision of this resolution be declared by the courts invalid for any reason, such declaration shall not affect the validity of this resolution as a whole or any part thereof, other than the section, clause, or provision so declared to be invalid.

Article 15 - Repeals

Section 1501. All resolutions or parts of resolutions inconsistent herewith are hereby repealed.

Article 16 - Annual Review

Section 1601. This resolution shall be reviewed annually by the City Council and changes shall be made if necessary.

Article 17 - Effective Date

Section 1701. This resolution shall have immediate effect.

(The community may choose to adopt either an ordinance or resolution, whichever is the most appropriate procedure within the community, and promulgate it according to normal procedures.)

ATTACHMENT B: SAMPLE SUPPORT EMERGENCY OPERATIONS PLAN

The following pages provide a sample Support Emergency Operations Plan. If used as a template, the sample plan should be reviewed and adjusted to meet local needs.

City of Flint

SUPPORT EMERGENCY OPERATIONS PLAN

An all-hazards plan supporting the (County Emergency Operations Plan/Emergency Action Guidelines), for use in the event of disaster or severe emergency of natural, human, wartime, technological or terrorism origin.

August __, 2021

The information contained in this template, developed by the Michigan State Police, Emergency Management and Homeland Security Division (MSP/EMHSD), should be used to assist in developing a Support Emergency Operations Plan which must then be reviewed by the Local Planning Team (LPT) and modified based on the community's emergency response capabilities.

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Promulgation Document

Officials of City of Flint, in conjunction with County and State Emergency Management (EM) agencies, have developed this Support Emergency Operations Plan that will enhance the local emergency response capability.

This plan, when used properly and updated, will assist local government officials to accomplish their primary responsibilities of protecting lives and property in their community. This plan and its provisions will become official when it has been signed and dated below by the Chief Executive Official (CEO) of the municipality.

Chief Executive Official
City of Flint

Date

Approval and Implementation

The Support Emergency Operations Plan, referred to in this document as the Support EOP, describes how City of Flint will handle emergency situations in cooperation with the County Emergency Management Program. The Support EOP assigns responsibilities to agencies for coordinating emergency response activities before, during, and after any type of emergency or disaster. The Support EOP does not contain specific instructions as to how each department will respond to an emergency; these can be found in the plan annexes or separate Standard Operating Procedures (SOP).

The goal of the Support EOP is to coordinate emergency response efforts to save lives, reduce injuries, and preserve property. The Support EOP addresses emergency issues before and after an emergency, but its primary goals are to assemble, mobilize and coordinate a team of responders that can respond to any emergency, and describe response procedures in relation to the county response procedures.

The Support EOP will use a graduated response strategy that is in proportion to the scope and severity of an emergency. City of Flint will plan, prepare and activate resources for local emergencies that affect the local area (or a specific site) and/or widespread disasters that affect the entire state and/or nation.

The Support EOP was developed by a Local Planning Team (LPT). The LPT consists of key departments covering emergency functions such as law enforcement, fire, public works, and public health. The team works to establish and monitor programs, reduce the potential for hazard events in the community through planning, review, and training, and assist the County Emergency Management Program in developing and maintaining the County EOP.

The Support EOP must be signed by the current CEO each time it is updated, with the exception of the following activities:

1. Minor updates e.g. changing system names, grammar, spelling or layout changes
2. Updates to the annexes

These activities may be updated in the plan without the CEO signature by the following individuals:

1. Emergency Management Liaison
2. Department head responsible for an annex

Homeland Security Presidential Directive (HSPD) 5 facilitates a standard management approach to major incidents, the National Incident Management System (NIMS). NIMS is administered as part of the National Response Framework (NRF) which integrates the federal government into a single, all discipline, and all-hazards plan. NIMS will provide a nationwide approach that enables federal, state, tribal and local government agencies to "work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size or complexity." This Support EOP has integrated NIMS concepts, including the Incident Command System (ICS), and language to help incident management operate in accordance to the NIMS using the guidance provided by the Department of Homeland Security (DHS).

During an emergency, all response personnel will use the ICS to manage the incident and employ emergency resources at the site. The Emergency Operation Center (EOC) will coordinate additional resources when needed. This EOP will be used during community recovery after an emergency.

This plan supersedes all previous plans.
Record of Revisions

The following is a list of revisions made to the Support EOP. This chart tracks the date that changes were made, reason for the changes, updated pages, and who made the revision.

Date	Reason for Revision	Page Numbers	Revised By

Record of Distribution

The following is a list of the individuals and facilities that have been provided a copy of the Support EOP in order to conduct the assigned tasks addressed in this plan.

Title of Recipient	Name of Recipient	Agency	Date	Number of Copies
Chief Executive Official	Mayor Sheldon A. Neeley	City of Flint	8-20-2021	1
Flint City Council Present	Flint City Council Kate Fields	Flint City Council	8-20-2021	1
County Emergency Management Coordinator/Emergency Management Manger	Jeff Wilson	Genesee County Emergency Management	8-20-2021	1
City of Flint Emergency Management Liaison	Chief Raymond Barton	City of Flint Fire Department	8-20-2021	1
Communications and Warning Official and Genesee County 911 Director	Spring Tremaine	Genesee County 911	8-20-2021	1
Damage Assessment Official and City Assessor	Stacey Kaake	City of Flint Assessments	8-20-2021	1
Fire Services Official and Safety Training Officer	Christian Perkins	City of Flint Fire Department	8-20-2021	1
Mass Care, Emergency Assistance, Housing, and Human Services Official and EMS Coordinator	Deputy Fire Chief Carrie Edwards-Clemons	City of Flint Fire Department	8-20-2021	1
Manager of Public Health	Qiana Towns-Williams	City of Flint Public Health Office	8-20-2021	1
Marketing Coordinator	Melissa Brown	City of Flint	8-20-2021	1

Basic plan

Purpose

City of Flint has elected to incorporate into the County Emergency Management Program. As partners in the five phases of emergency management, mitigation, preparedness, prevention, response and recovery, City of Flint and the County Emergency Management Program share joint responsibilities. The City of Flint Support EOP has been developed to identify these responsibilities. It is to be used in concurrence with the County EOP. In accordance with Section 19 of the Michigan Emergency Management Act (1976 PA 390, as amended), activation of this this plan at the beginning of a disaster or emergency also establishes eligibility to receive state assistance for disaster related expenses incurred during a State of Emergency or Disaster declared by the Governor, for which federal assistance is unavailable.

Scope

The City of Flint Support EOP is an adaptable document that can be applied to all hazards. Due to the unique nature of emergencies, it may become necessary to deviate from the contents of the plan when responding to an incident. Agencies that have been assigned supporting roles in this plan have developed and will maintain SOPs that provide systematic instructions for accomplishing their assigned functions. The local government conducts additional activities, such as personnel training, participation in exercises, public information, land-use planning, etc., to support emergency preparedness, mitigation, and response efforts. To facilitate efficient emergency management operations, City of Flint continues to implement the NIMS.

Authorities and References

A. Authority of local officials during an emergency:

1. 1976 PA 390, as amended,
2. City of Flint, local Emergency Management resolution,
3. City of Flint, adoption of the Support EOP,
4. Executive Directive No. 2005-09, the state adoption of the NIMS,
5. The Robert T. Stafford Disaster Relief and Emergency Assistance Act,
6. Emergency Planning and Community Right to Know Act of 1986 (EPCRA) also known as the Superfund Amendments and Reauthorization Act (SARA), Title III,
7. Good Samaritan Law and Know Act of 1986.

B. References used to develop the Support EOP:

1. NIMS,
2. NRF,
3. Michigan Emergency Management Plan (MEMP), Michigan State Police, Emergency Management and Homeland Security Division (MSP/EMSHD),
4. Pub 204, MSP/EMHSD.

Plan Development and Maintenance

To ensure that this Support EOP addresses the needs of the community and is consistent with the County EOP, this document was developed in a cooperative, whole community effort between

municipal government, local community, and the County Emergency Management Program. The Support EOP is updated after every change of the municipal CEO or update to the County EOP. After the plan is adopted by resolution of the council and approved by the CEO, it is forwarded to the County Emergency Management Program. The plan will be implemented, tested through exercises in concurrence with county officials, and maintained in accordance with the standards and currentness of the County EOP.

This plan has been provided to all municipal departments, local elected officials, the County Emergency Management Program and all agencies tasked within the document. It includes this Basic Plan, which provides an overview of the municipality's preparedness and response strategies, and functional annexes that describe the actions, roles and responsibilities of participating organizations.

Situation Overview

- B. **City of Flint** has taken various preparedness and incident management steps to enhance capabilities in responding to incidents including:
1. The mitigation of potential hazards.
 2. Identification of emergency response agencies and mechanisms that will protect life and property before, during and after an emergency.
 3. Tasking agencies, organizations, and individuals with specific functions and responsibilities relative to emergency operations. Assigned tasks are explained in further detail under "Organization and Assignment of Responsibilities."
 4. Integration with the County EOP, County hazard mitigation plan, MEMP, etc.

C. **Community profile:**

City of Flint is located in the Michigan in the County of Genesee. The community has a population of 99,000 residents. Approximately 70% of residents have been recognized as individuals with Access and Functional Needs. Many of the residents that require Functional Needs Support Services (FNSS) reside in congregate care centers, while others reside in non-group homes where support is provided as needed or on-call.

D. **Hazard and threat analysis:**

According to the Genesee County (Hazard Mitigation Plan/Hazard Analysis), communities in the county are most vulnerable to: (Snow and Ice Storms, Tornadoes, Inclement Weather, Public Health Emergencies, Civil Disturbance, Hazardous Material, Incidents (Transportation), Infrastructure Failure, Structure Fires, Major Transportation Accidents, Riverine Flooding, Hazardous Material Incidents, Extreme Temperatures, Dam Failure, Terrorism, Scrap yard Tire Fires, Sinkholes, Oil or Natural Gas leaks. Areas within City of Flint that are especially vulnerable to these hazards are: (The north/south/east/ and west side of the City). Additional hazards that have been identified as unique to City of Flint include: (Consumers Energy hub, railroads, water treatment plant, dams, chemical and LPG plants, manufacturing plants, dams, 475/I-69 transit routes, and (302) sites that contain extremely hazardous materials are located in City of Flint. Facility owners have reported the types of hazardous materials that are stored on-site, as required by the Emergency Planning and Community Right-To-Know Act (EPCRA). Pursuant to SARA Title III requirements, off-site emergency response plans have been developed by the Local Emergency Planning Committee (LEPC) to prepare fire departments for responding to the release of the specific hazardous materials on these sites.

E. **Relationship between municipality and County Emergency Management Program:**

Emergency management and response are primarily local responsibilities. However, disasters and emergencies might exhaust the resources and capabilities of local governments. Therefore, City of Flint has chosen to incorporate into the County Emergency Management Program. To coordinate emergency management related matters with the County Emergency Management Program, the City of Flint has appointed the Deputy Fire Chief Carrie Edwards-Clemons to serve as the Emergency Management Liaison. The Emergency Management Liaison facilitates communication and coordination between City of Flint and county, and is the local point of contact for the County Emergency Management Coordinator (EMC).

Planning Assumptions

- A. The proper implementation of this plan will result in saved lives, incident stabilization, and property protection in City of Flint.
- B. Some incidents occur with enough warning that necessary notification can be issued to ensure the appropriate level of preparation. Other incidents occur with no advanced warning.
- C. Depending upon the severity and magnitude of the situation, local resources may not be adequate to deal with an incident. It may be necessary to request assistance through volunteer organizations, the private sector, mutual aid agreements (MAAs)/memorandums of understanding (MOUs), and/or county, state and federal sources. When provided, these will supplement, not substitute for, relief provided by local jurisdictions.
- D. All emergency response agencies within City of Flint that have been tasked in the plan are considered to be available to respond to emergency incidents. Agencies will work to save lives, protect property, relieve human suffering, sustain survivors, stabilize the incident, repair essential facilities, restore services and protect the environment.
- E. When a jurisdiction receives a request to assist another jurisdiction, reasonable actions will be taken to provide the assistance as requested.
- F. Emergency planning is a work-in-progress; the Support EOP is consistently reviewed and updated.
- G. During an emergency or disaster, parts of the plan may need to be improvised or modified, if necessary, based on the situation.

Concept of Operations

- A. Activation of the Support EOP and declaration of a local state of emergency:

When a threat is perceived, the Emergency Management Liaison activates the Support EOP and the local Emergency Operations Center (EOC) to facilitate activities that ensure the safety of people, property and environment. Pursuant to 1976 PA 390, as amended, the (CEO/other official designated by charter) may declare a local state of emergency for City of Flint if circumstances indicate that the occurrence or threat of widespread or severe damage, injury, or loss of life or property exist. In the absence of the (CEO/other official designated by charter), pursuant to local legislation, the (Fire Chief/Authority Having Jurisdiction) is authorized to declare a local state of emergency. Upon a local declaration, PA 390 authorizes the (Chief Executive Official/other official designated by charter) to issue directives as to travel restrictions on local roads. To facilitate activities that ensure the safety of people, property and environment, a local declaration also activates this Support EOP and the municipal Emergency Operations Center (EOC). A local state of emergency shall not be continued or renewed for a period in excess of seven days except with the consent of the governing body of the municipality.

- B. The following procedures are conducted and coordinated with the county in response to an incident:
1. The Emergency Management Liaison will perceive the threat, assess the hazard and ensure that municipal emergency response agencies, elected officials and County EMC are notified of the situation.
 2. Municipal agencies assess the nature and scope of the emergency or disaster.
 3. If the situation can be handled locally, the following guidelines are used:
 - a. The Emergency Management Liaison advises the CEO and coordinates all local emergency response actions.
 - b. The Emergency Management Liaison activates the EOC. The EOC is located at (Emergency Management Office 1101 Beach St. Flint, MI 48502). If this location is unavailable, the alternate EOC location is (1101 S. Saginaw St. North Building/FPD Operations Building).
 - c. The CEO declares a local state of emergency. The Emergency Management Liaison notifies the County EMC and forwards the declaration to the County Emergency Management Program.
 - d. Emergency Response Agencies are notified by the Emergency Management Liaison to report to the EOC through (Genesee County 911/ identify notification system(s), e.g., telephone, smart messaging, etc.).
 - e. The CEO directs departments/agencies to respond to the emergency in accordance with the guidelines outlined in this plan and its annexes, and issues directives as to protective actions and travel restrictions on local roads.
 - f. The Emergency Management Liaison keeps the County EMC informed of the situation and actions taken.
 4. If the emergency is beyond local control, municipal resources become exhausted, or special resources are needed, county assistance is requested through the County EMC.
 5. If county assistance is requested, the County EMC assesses the situation and makes recommendations on the type and level of assistance. The county will also take the following steps:
 - a. Activate County EOC and EOP
 - b. Respond with county resources
 - c. Activate MAA/MOUs to supplement county resources
 - d. Notify MSP/EMSHD District Coordinator
 - e. Make available incident information to MSP/EMSHD and statewide agencies via the Michigan Critical Incident Management System (MI

CIMS) online platform, by submitting and maintaining applicable MI CIMS boards and logs.

6. If county resources and capabilities are exhausted, the county requests the Governor to declare a State of Emergency or State of Disaster in accordance with procedures set forth in 1976 PA 390, as amended. If the emergency occurs solely within the confines of the municipality, the county shall not request state assistance or the Declaration of a State of Disaster or Emergency unless requested to do so by the municipal CEO.

Organization and Assignment of Responsibilities

A. Emergency Management Organization:

1. The City of Flint emergency management organization is comprised of **(9-nine)** agencies and departments that are responsible for conducting activities in response to emergencies within the community. To facilitate an effective emergency response, these departments have been assigned to nine specific emergency functions. All agencies are responsible for implementing pre-disaster activities to prevent, mitigate and prepare for the various hazards that the community is vulnerable to. These activities include awareness training and public education, exercising, preparing Standard Operating Procedures (SOPs) and job aides, hygienic practices to prevent spreading of infectious diseases, stockpiling equipment, regulating land-use, etc.
2. The following table lists the established emergency support functions, assigned agencies, primary points of contact, and phone numbers.

Function	Agency	Primary Contact	Phone
Direction, Control , and Coordination	City of Flint	Mayor Sheldon A. Neeley	810.237.2035
Communications and Warning	Genesee County 911	Spring Tremaine	734.646.1833
Damage Assessment	City of Flint	Stacey Kaake	810.237.2401
Fire Services	City of Flint Fire Department	Chief Raymond Barton	810.210.8633
Mass Care, Emergency Assistance, Housing, and Human Services	City of Flint Fire Department	EMS Coordinator Carrie Edwards	810.766.3995
Public Health and Medical Services	City of Flint Public Health Office	Qiana Towns-Hall	810.237.2044
Public Information	City of Flint	Melissa Brown	810.730.2872

Public Safety	City of Flint Police Department	Chief Terence Green	810.282.9072
Public Works	City of Flint	Mike Brown	810.577.8267

3. The following table lists the alternates designated to represent the emergency functions.

Agency	1st Alternate	2nd Alternate
City of Flint Fire Dept.	Carrie Edwards-Clemons	Deputy Fire Chief
City of Flint Police Dept.	Deputy Chief Jeff Antcliff	Captain Collin Birnie
Genesee County 911	Deputy Director Tim Jones	Operations Manager David Plumb
City of Flint Assessment	Deputy Assessor Jacquetta Overton	Support Supervisor Tracy Weiss
City of Flint Public Works	John Daly	Paul Simpson

4. City of Flint maintains (5-five) full time fire departments. All departments contribute to the safety and welfare of the community. Each department employs qualified emergency personnel and maintains equipment that can be used in emergency response. A list of resources available for utilization during incidents can be requested through the Emergency Management Liaison. If resource needs exceed the capabilities of the community, the CEO may activate MAA/MOUs and pre-disaster contracts, or it may become necessary to request county assistance.

B. Responsibilities:

1. The following responsibilities have been assigned to each organization that has been assigned responsibility in this plan:
 - a. Assist in the development, review and maintenance of Support EOP and County EOP.
 - b. Report to the local EOC when activated for scheduled exercises or emergencies.
 - c. Build capabilities and develop/maintain SOPs for specific functions or actions identified in the plan. Continuously review and update procedures.

- d. Maintain a list of resources available through the departments.
 - e. Establish MAA/MOUs and contracts with other jurisdictions and organizations to supplement municipal resources.
 - f. Activate MAA/MOUs and contracts with other organizations to supplement response activities when local resources become exhausted.
 - g. Train personnel in emergency management functions and NIMS/ICS concepts.
 - h. Protect vital records and other resources deemed essential for continuing government functions and each agency's emergency operations in accordance to procedures and policies.
 - i. Ensure compliance with this plan and the County EOP, and any pertinent procedures and documents that impact the provision of emergency services in the municipality.
2. The annexes attached to this plan further describe nine emergency support functions and their associated responsibilities in mitigation, preparedness, prevention, response and recovery. Annexes include the organizations that are responsible for carrying out the emergency functions, and assign tasks associated with each function.

ANNEXES

The annexes attached to the Basic Plan describe all-hazard functions and include the roles and responsibilities that each responsible agency should consider during an emergency for which the Support EOP has been activated. Each annex contains: the agencies responsible for carrying out a function, their assigned tasks, and the concept of operations.

The annexes attached to this plan include the following functions:

Annex A, Direction, Control, and Coordination

Annex B, Damage Assessment

Annex C, Communications and Warning

Annex D, Fire Services

Annex E, Mass Care, Emergency Assistance, Housing, and Human Services

Annex F, Public Health and Medical Services

Annex G, Public Information

Annex H, Public Safety

Annex I, Public Works

ANNEX A

DIRECTION, CONTROL, AND COORDINATION

The Direction, Control, and Coordination function is responsible for the activation, organization and operation of the local EOC, the facilitation of incident management, response, and recovery efforts, and coordination with the County Emergency Management Program.

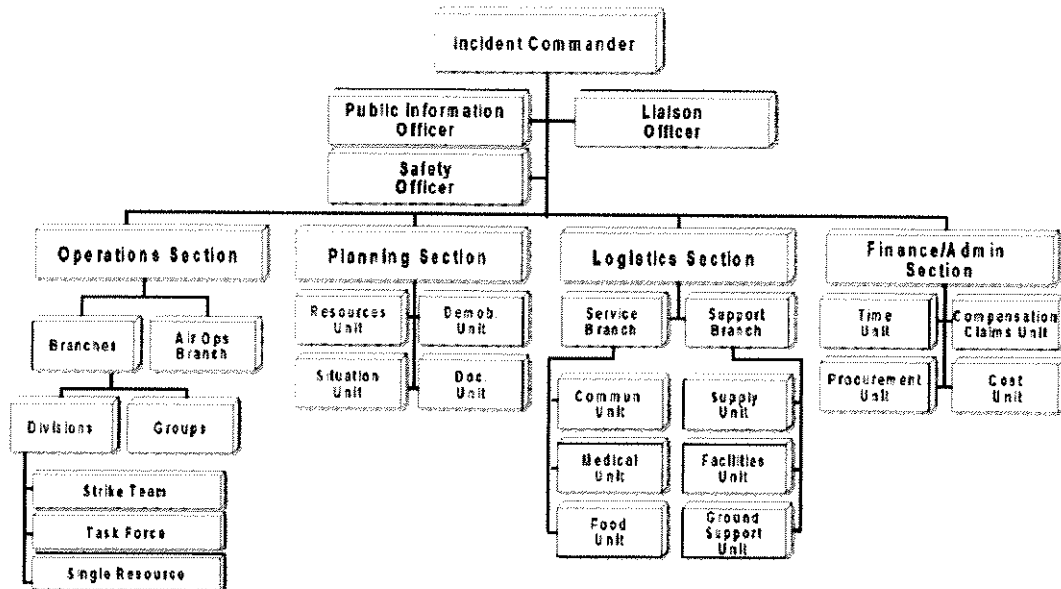
Direction, Control, and Coordination officials will maintain liaison and coordinate emergency management and response activities with the Direction, Control and Coordination function at the county level. This annex relates to the following annex(es) in the (County EOP/EAG): (Applicable county annexes or ESFs; e.g., Direction and Control Annex, ESF#5 – Information & Planning)

Responsible Agency: Executive Office

Direction, Control, and Coordination Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another representative from the agency to staff the EOC and implement the plan.
	EOC operations
	Activate the EOC and ensure that appropriate staff is notified.
	Establish a system of coordination, such as ICS (see Figure 1), within the EOC. (Field operations at the ICP are required to utilize ICS.)
	Maintain administrative materials for the EOC, i.e., pencils, paper, maps, and status boards.
	Ensure copies of the Support EOP and EOC SOPs are available to EOC staff.
	Coordinate with law enforcement officials for EOC security.
	Local authority
	Direct and coordinate response activities in accordance with this plan, including prioritizing allocation of scarce resources.
	Relieve jurisdiction employees of normal duties and temporarily reassign them to emergency duties, and employ temporary workers, as necessary.
	Declare a local state of emergency.
	Issue directives as to travel restrictions on municipal roads.
	Recommend appropriate protective measures to ensure the health and safety of people and property.
	Assistance to other agencies
	Advise the County Emergency Management Coordinator of the situation and maintain liaison with the County Emergency Management Program.
	Establish communications with and provide support to the Incident Command Post (ICP).
	Provide frequent staff briefings and ensure all groups function as planned.
	Inform legislative body of measures taken.
	Review and authorize the release of information to the public through the Public Information Officer (PIO).
	Logistics
	Ensure all resources are made available for response.
	Formulate specific assistance requests to adjacent jurisdictions and the county.
	Activate MAA/MOUs and contracts with other jurisdictions and organizations.
	Provide aid to other communities as provided for in MAA/MOUs.
	Ensure staff maintains logs of actions taken and financial records.

Figure 1. ICS Incident Management Structure



DIRECTION, CONTROL, AND COORDINATION

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint	Mayor Sheldon A. Neeley

The line of succession for the CEO for representing the Direction, Control, and Coordination function during a response to an emergency or disaster situation is:

TITLE	AGENCY
City Administrator, Clyde Edwards	City of Flint

The line of succession for the Emergency Management Liaison for representing the Direction, Control, and Coordination function during a response to an emergency or disaster situation is:

TITLE	AGENCY
Chief of Fire, Raymond Barton	City of Flint Fire Department
Deputy Fire Chief Carrie Edwards-Clemons	City of Flint Fire Department
On-Duty Battalion Chief	City of Flint Fire Department

The CEO and Emergency Management Liaison are responsible for reporting or delegating an individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Direction, Control, and Coordination function.

SIGNATURE OF CHIEF EXECUTIVE OFFICIAL	DATE
Mayor	

SIGNATURE OF EMERGENCY MANAGEMENT LIAISON	DATE
Fire Chief	

ANNEX B

COMMUNICATIONS AND WARNING

The Communications and Warning function is responsible for alerting and notification of key officials, receiving and disseminating warning and critical emergency information to the public, and the establishment, maintenance, and coordination of communication protocols and links between the EOC and other incident facilities.

The Communications and Warning Official will maintain liaison and coordinate emergency management and response activities with the Communications and Warning functions at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Communications Annex and Warning Annex, ESF#2 – Communications and ESF#15 – External Affairs)**

Responsible Agency: **(911 Dispatch Center, IT Department)**

Communications and Warning Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another representative from the agency to staff the EOC and implement the plan.
	Communication links
	Ensure lines of communication have been established between all agencies represented in the local EOC, their department offices and their staff at the incident site. Available channels for establishing communications includes (communications channels, e.g. telephone, cell phone, radios, pagers, etc.)
	Coordinate communications between municipal and county EOC. Available channels for establishing communications include (communications channels, e.g. telephone, cell phone, radios, pagers, etc.)
	Establish communications links with the adjacent communities and higher levels of government.
	Coordinate warning frequencies and procedures with adjacent communities and other government agencies.
	Disaster warning and information
	Activate public warning systems when instructed to do so by the CEO or Emergency Management Liaison. Warning methods include (warning methods, e.g., sirens, door-to-door notification, reverse 911, etc.)
	Ensure that warning messages received through the Law Enforcement Information Network (LEIN), National Warning System (NAWAS), Emergency Alert System (EAS), local weather spotters, or other verifiable means are issued in a timely manner.
	Determine which facilities are endangered by the incident and contact those facilities. Ensure they are contacted when protective actions are rescinded.
	Notify special locations (e.g., schools, hospitals, nursing homes, major industries, institutions, and places of public assembly).
	Ensure that public warning systems provide notification to residents with Access and Functional Needs, such as the elderly, hearing impaired, non-English speakers, individuals with mobility limitations, etc.
	Official notification
	Ensure that all necessary officials have been notified and/or updated about the incident.
	Notify neighboring jurisdictions of impending hazard or hazardous situations when instructed to do so by the Chief Executive Official or Emergency Management Liaison.

COMMUNICATIONS AND WARNING

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
Genesee County 911	Director, Spring Tremaine

The line of succession for representing the Communications and Warning function during a response to an emergency or disaster situation is:

TITLE	AGENCY
Deputy Director, Tim Jones	Genesee County 911
Operations Manager, David Plumb	Genesee County 911

The Genesee County 911 Director is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Communications and Warning function.

SIGNATURE OF COMMUNICATIONS AND WARNING OFFICIAL	DATE
Director	

ANNEX C

DAMAGE ASSESSMENT

The Damage Assessment (DA) function is concerned with the process of documenting damage from emergencies in the community. Information gathered may be used to determine the extent of damage and impact on the community resulting from an incident to justify future federal funding, declarations of emergency, and disaster proclamations. An accurate damage assessment is a necessary part of the recovery phase and determines qualification for state and federal disaster aid.

The Damage Assessment Official will maintain liaison and coordinate emergency management and response activities with the DA function at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Damage Assessment Annex, ESF#5 – Information & Planning and ESF#14 – Long-Term Community Recovery)**

Responsible Agency: **(Assessing Office, Building Department)**

Damage Assessment Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another from the agency to staff the EOC and implement the plan.
	Damage assessment
	Maintain current list of DA field team members.
	Maintain damage assessment field team supplies for contingency purposes, i.e., MSP/EMSHD Pub 901 Michigan Damage Assessment Handbook, blank forms, flashlights, cameras, pencils, paper, maps, etc.
	Activate DA field teams.
	Collect both public and private damage assessment information.
	Record initial information on damages from first responders.
	Augment DA field teams, as the situation dictates.
	Dissemination of DA information
	Provide an initial DA to EOC staff.
	Provide and verify DA information to the CEO and, if necessary, assist in preparation of a local state of emergency declaration.
	Prominently display DA information in the EOC, including maps, situation updates and assessment data.
	Provide the PIO with current DA information for release to the public.
	Provide DA data to the Emergency Management Liaison. The Emergency Management Liaison will forward information to the County Emergency Management Program for submission in MI CIMS.
	Logistics
	Maintain a status list of requested resources.
	Compile and maintain a record of expenditures for personnel, equipment, supplies, etc.

DAMAGE ASSESSMENT

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint	Stacy Kaake, Assessor

The line of succession for representing the DA function during a response to an emergency or disaster situation is:

TITLE	AGENCY
Deputy Assessor, Jacquetta Overton	City of Flint Assessment
Support Supervisor, Tracy Weiss	City of Flint Assessment

City of Flint Assessor is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the DA function.

SIGNATURE OF DAMAGE ASSESSMENT OFFICIAL	DATE

ANNEX D

FIRE SERVICES

The Fire Services function is concerned with detecting and suppressing wild land, rural, and urban fires and any of these that result from, or occur coincidentally with, an incident response.

The Fire Services Official will maintain liaison and coordinate emergency management and response activities with the Fire Services function at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Fire Annex, ESF#4 – Firefighting and ESF#9 – Search and Rescue, etc.)**

Responsible Agency: **(City of Flint Fire Department)**

Fire Services Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another representative from the agency to staff the EOC and implement the plan.
	Response activities
	Coordinate fire response and search and rescue activities with appropriate personnel at the County Emergency Management Program, including assistance to regional special teams such as Regional Response Teams, Michigan Urban Search and Rescue (MUSAR), bomb squads, etc.
	Respond to hazardous materials spills.
	Coordinate with the County EMC and the State of Michigan in the decontamination of affected citizens and emergency workers after exposure to CBRNE hazards.
	Assist in searching for bombs and explosive devices in connection with terrorism or weapons of mass destruction (WMD) events.
	Assistance to other agencies
	Advise EOC staff about fire and rescue activities.
	Provide communications and other logistical supplies, as needed.
	Assist with evacuations.
	Assist in damage assessment operations.
	Assist in warning the population. Loud speakers on fire vehicles or door-to-door warning may be utilized.
	Assist in salvage operations and debris clearance.

FIRE SERVICES

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint Fire Department	Chief Raymond Barton

The line of succession for representing the Fire Services function during a response to an emergency or disaster situation is:

TITLE	AGENCY
On-Duty Battalion Chief	City of Flint Fire Department
Safety Training Officer, Christian Perkins	City of Flint Fire Department
Deputy Fire Chief, Carrie Edwards	City of Flint Fire Department

Fire Chief Raymond Barton is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Fire Services Functions.

SIGNATURE OF FIRE SERVICES OFFICIAL	DATE
Chief	

ANNEX E

MASS CARE, EMERGENCY ASSISTANCE, HOUSING, AND HUMAN SERVICES

This function is concerned with issues related to the provision of mass care, emergency assistance, housing, and human services to disaster survivors, including those that require FNSS, throughout the prevention, preparedness, mitigation, response, and recovery phases of disasters and emergencies.

The Mass Care, Emergency Assistance, Housing, and Human Services Official will maintain liaison and coordinate emergency management and response activities with the Mass Care functions at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Human Services Annex, ESF#2 – Communications and ESF#6 – Mass Care, Emergency Assistance, Housing, and Human Services)**

Responsible Agency: **(City of Flint Fire Department EMS Recreation Department, Housing Office)**

Mass Care, Emergency Assistance, Housing, and Human Services Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another representative from the agency to staff the EOC and implement the plan.
	Disaster-related needs
	Coordinate activities of municipal departments that provide mass care and human services.
	Coordinate with the County Emergency Management Program, the American Red Cross (ARC) and other agencies to distribute food, water, and clothing, and meet other basic needs of disaster survivors and emergency responders.
	Coordinate to provide transportation for disaster survivors and emergency responders.
	Arrange for the provision of crisis counseling to disaster survivors and emergency responders.
	Coordinate procedures for the tracking of family members and reunification of families.
	Identify and account for personal property that may be lost during a disaster.
	Coordinate with the County EOC to establish procedures for the registration and management of volunteers and donations.
	Coordinate with agencies in the community that work with individuals with access and functional needs to ensure disaster related needs are met.
	Protective action
	Coordinate the provision of transportation for evacuation.
	Provide staff and resources to manage open shelters.
	Coordinate care for individuals at shelters and for those who have been sheltered-in-place.
	Determine whether shelters must be opened long or short-term.
	Provide guidance/policies for the care of household pets that are brought to shelters by evacuees (only service animals are allowed into ARC shelters).
	Pre-identified shelter locations include: (shelter locations; information on pre-identified shelter locations should be available from the County Emergency Management Program or ARC)

MASS CARE, EMERGENCY ASSISTANCE, HOUSING, AND HUMAN SERVICES

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint Fire Department	Deputy Fire Chief, Carrie Edwards

The line of succession for representing the Mass Care, Emergency Assistance, Housing, and Human Services function during a response to an emergency or disaster situation is:

TITLE	AGENCY
On-Duty Battalion Chief	City of Flint Fire Department

City of Flint Fire Department is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Mass Care, Emergency Assistance, Housing, and Human Services function.

SIGNATURE OF MASS CARE, EMERGENCY ASSISTANCE, HOUSING, AND HUMAN SERVICES OFFICIAL	DATE
Deputy Fire Chief	

ANNEX F

PUBLIC HEALTH AND MEDICAL SERVICES

The Public Health and Medical Services function is responsible for assessing public health and medical needs, health surveillance, and provision of medical care personnel, supplies and equipment.

The Public Health and Medical Services Official will maintain liaison and coordinate emergency management and response activities with the Public Health and Medical Services function at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Emergency Medical Services Annex and Public Health Annex, ESF#8 – Public Health and Medical Services)**

Responsible Agency: **(City of Flint Manager of Public Health)**

Public Health and Medical Services Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another representative from the agency to staff the EOC and implement the plan.
	Patient care
	Coordinate with medical providers and shelter managers to staff medical personnel at shelters.
	Identify the transportation resources and personnel needs to transport disaster survivors to temporary care centers.
	Ensure identification and notification of disaster survivors and emergency responders in need of crisis counseling and/or debriefing.
	Coordinate the monitoring of disaster survivors and emergency responders for exposure to chemical, radiological, or biological contaminants.
	Public health
	If necessary, identify a site for a temporary morgue. NOTE: The medical examiner is responsible for identifying the deceased. Law enforcement and EMS may provide additional support in collecting and transporting.
	Assist with animal and pet control and support the county Animal Control Unit in the quarantine and disposal of diseased animals.

PUBLIC HEALTH AND MEDICAL SERVICES

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint Public Health Office	Manager of Public Health , Qiana Towns-Williams

The line of succession for representing the Public Health and Medical Services function during a response to an emergency or disaster situation is:

TITLE	AGENCY
Latrese Brown	City of Flint Public Health Office

Manager of Public Health is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Public Health and Medical Services function.

SIGNATURE OF HEALTH AND MEDICAL OFFICIAL	DATE

ANNEX G

PUBLIC INFORMATION

The Public Information function ensures accurate, coordinated, timely, and accessible information is disseminated to governments, media, the general public, and the private sector throughout the prevention, preparedness, mitigation, response, and recovery phases of disasters and emergencies.

The Public Information Official will maintain liaison and coordinate emergency management and response activities with the Public Information function at the county level. This annex relates to the following annex(es) in the (County EOP/EAG): (Applicable county annexes or ESFs; e.g., Public Information Annex, ESF#15 – External Affairs)

Responsible Agency: (Director of Communications)

Public Information Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another from the agency to staff the EOC and implement the plan.
	Pre-disaster public education
	Assist the Emergency Management Liaison in developing educational materials on the hazards facing the community and explaining what people can do to protect themselves to recover from incidents.
	Ensure that written materials are developed for non-English speaking individuals or others who require FNSS.
	Disaster warning and information
	Develop and release updated EAS messages based on incoming information.
	Document which EAS messages have been delivered over radio and television.
	Ensure that accurate information is disseminated describing such items as the locations of shelters, missing persons information hotline, volunteer hotline, rumor control hotline, etc.
	Distribute prepared public educational materials.
	Media coordination
	Establish and maintain contact with the EOC and/or the ICP.
	Prepare press releases and ensure that all press releases and official information is reviewed by Chief Executive Official & City Administrator .
	Verify that information is accurate before releasing it to the media.
	Schedule media briefings.
	Establish a Public Information Center as the central point from which municipal news releases are issued at 1101 S. Saginaw Street, Mayor's Office .
	Assist the county in establishing a Joint Information Center (JIC; the JIC can be used by agency representatives for releasing information to the news media).
	Coordinate public information activities with the County PIO and the JIC.
	Schedule interviews between the CEO and media agencies.
	Monitor all forms of media, both traditional and social, for rumors, and address rumors as soon as possible

PUBLIC INFORMATION

The following agency is responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint	Marketing Coordinator, Melissa Brown

The line of succession for representing the Public Information function during a response to an emergency or disaster situation is:

TITLE	AGENCY

Melissa Brown is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Public Information function.

SIGNATURE OF PUBLIC INFORMATION OFFICIAL	DATE

ANNEX H

PUBLIC SAFETY

The Public Safety function is concerned with ensuring the safety of all citizens, maintaining law and order, protecting public and private property and providing protection for essential industries, supplies and facilities.

The Public Safety Official will maintain liaison and coordinate emergency management and response activities with the Public Safety function at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Law Enforcement Annex, ESF#13 – Public Safety and Security)**

Responsible Agency: **(Flint Police Department)**

Public Safety Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another from the agency to staff the EOC and implement the plan.
	Response activities
	Provide security and access control at critical facilities and incident sites.
	Implement any curfews ordered by the governor or CEO.
	Enforce evacuation orders and assist in evacuations.
	Ensure prisons and jails are notified of potential threat and determine whether proper safety and security precautions are being taken.
	Implement urban search and rescue capabilities, including animals.
	Investigate incident and provide intelligence information to county, state and federal officials.
	Transportation
	Secure unusable roads. (Use Fire Services and Public Works for support, if necessary).
	Identify routes that need barricades and signs. Request necessary assistance from Public Works.
	Ensure vehicles on evacuation routes are removed. If necessary, request that Public Works agencies move vehicles off the road. Maintain record of where vehicles are being taken.
	Coordinate with the Road Commission or Public Works in rerouting traffic and putting the appropriate signs in place.
	Assistance to other agencies
	Assist Warning function in warning the public, when necessary.
	Assist the medical examiner with mortuary services.
	Assist families isolated by the effects of the disaster.

PUBLIC SAFETY

The following agencies are responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint Police Department	Chief Terence Green

The line of succession for representing the Public Safety function during a response to an emergency or disaster situation is:

TITLE	AGENCY
Deputy Chief, Jeff Antcliff	City of Flint Police Department
Captain Collin Birnie	City of Flint Police Department

Chief Phil Hart is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Public Safety function.

SIGNATURE OF PUBLIC SAFETY OFFICIAL	DATE

ANNEX I

PUBLIC WORKS

The Public Works function is responsible for conducting pre- and post-incident assessments, ensuring critical services are met through existing contracts, providing technical assistance and engineering expertise and construction management, providing emergency repair of damaged public infrastructure and critical facilities, and the clearing of debris from public roads.

The Public Works Official will maintain liaison and coordinate emergency management and response activities with the Public Works function at the county level. This annex relates to the following annex(es) in the **(County EOP/EAG): (Applicable county annexes or ESFs; e.g., Public Works Annex, ESF#1 – Transportation, ESF#3 – Public Works and Engineering and ESF#12 – Energy)**

Responsible Agency: **(Department of Public Works)**

Public Works Checklist

	Report to the EOC, when activated, for scheduled exercises and disasters, or delegate another from the agency to staff the EOC and implement the plan
	Response activities
	Coordinate debris removal activities.
	Coordinate activities designed to control the flow of floodwater.
	Damage assessment
	Provide engineering expertise to inspect public structures and determine if they are safe to use.
	Provide DA information for roads, bridges, buildings, infrastructure, etc. to DA function.
	Transportation
	Provide barricades and signs for road closures and boundary identification (to include activating MAA/MOUs if additional barricades are needed).
	Provide technical expertise in road weight limits, road capacity, etc., to determine whether evacuation routes are adequate for traffic flow.
	Notify law enforcement of the location(s) of disabled vehicles.
	Contact appropriate Michigan Department of Transportation (MDOT) and county transportation officials to request travel restrictions on state and county roads, if necessary.
	Assistance to other agencies
	Assist in identifying access control areas.
	Assist with urban search and rescue activities, if necessary.
	Maintain contact with local utilities to determine the extent and cause of damage and outages. Report this information and restoration schedules to EOC staff.
	Coordinate with utility companies in the restoration of essential services.
	Logistics
	Provide vehicles and personnel to transport essential goods, such as food and medical supplies, when directed by the EOC staff.
	In conjunction with public health, help identify sources of potable water.
	Assist in identifying and obtaining the appropriate construction equipment to support disaster response and recovery operations.
	Provide emergency generators and lighting.

PUBLIC WORKS

The following agencies are responsible for this annex:

AGENCY	TITLE OF CONTACT
City of Flint	Director of Public Works, Michael Brown

The line of succession for representing the Public Works function during a response to an emergency or disaster situation is:

TITLE	AGENCY
John Daly, Director of the Division of Transportation 810.877.1913	City of Flint, Transportation Division
Paul Simpson, Foreman 810.397.7247	City of Flint, Water Service Center
Mike Beckley 810.577.8276	City of Flint, Water Plant
John Florshinger 810.241.5114	City of Flint, Water Pollution Control
Lee Osborne 810.223.7900	City of Flint Facilities Maintenance

Michael Brown is responsible for reporting or delegating another individual from their agency to report to the EOC during scheduled exercises or emergencies to coordinate and represent the Public Works function.

SIGNATURE OF PUBLIC WORKS OFFICIAL	DATE



RESOLUTION NO.: 210157
PRESENTED: APR - 7 2021
ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT OF DR. NANCY LOVE TO THE WATER
SYSTEM ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.

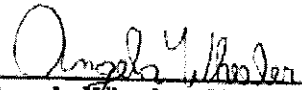
WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects.;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded,; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Dr. Nancy Love to the Water System Advisory Council (See Attached Resume).

NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Dr. Nancy Love address 1351 Beal Avenue, Ann Arbor, MI 48109 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:



Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President

S:\AWO\Water System Advisory Council\Revised Documents\J.Gaskin (Clean Copy) Resolution to Appoint to the Water System Advisory Council (1).doc

NANCY G. LOVE, Ph.D., P.E., BCEE

Borchardt and Glysson Collegiate Professor

3BUniversity of Michigan, 4B183 EWRE, 1351 Beal Avenue, Ann Arbor, MI 48109-2125

0BVoice: (734) 763-9664; 2BE-mail: nglove@umich.edu; N-E-Wcycles.org (*under construction*)**RESEARCH OVERVIEW**

In collaboration with my students, I work at the interface of water, infrastructure, and public health in both domestic and global settings. My group advances public and environmental health using chemical, biological, and computational approaches applied to water systems, and co-design methods in partnership with communities. Specific project areas include: evaluating the fate of chemicals, pathogens and contaminants of emerging concern in water with relevance to public health and the environment; using technologies to sense and remove these constituents; advancing technologies that recover useful resources from water, and developing approaches that enable local decision-making around water quality, resource efficiency, and equity.

EDUCATION

Doctor of Philosophy Environmental Systems Engineering, Clemson University Advisor: C. P. Leslie Grady Jr.	1994
Masters of Science Civil Engineering, University of Illinois at Urbana-Champaign Advisor: John T. Pfeffer	1986
Bachelors of Science Civil Engineering, University of Illinois at Urbana-Champaign	1984

PROFESSIONAL EXPERIENCE AND LICENSURE

Professor Department of Civil & Environmental Engineering, University of Michigan (U-M) Co-Founder and Co-PI, Environmental Biotechnology Lab, U-M	2008-present
U-M Faculty Affiliate Graham Sustainability Institute (http://graham.umich.edu/); Energy Institute (https://energy.umich.edu/); Poverty Solutions Institute (https://poverty.umich.edu/); African Studies Center (https://ii.umich.edu/asc)	Present
Licensed Professional Engineer Environmental Engineering, State of Michigan, License No. 6201057483.	2010 - present
Adjunct Professor Institute of Biotechnology, Addis Ababa University, Ethiopia	2016 - 2019
Staff UNESCO-IHE (United Nations Water Education Institute), sabbatical	Feb – July 2014
Associate Dean for Academic Programs and Initiatives Horace H. Rackham School for Graduate Studies	2011 - 2012
Board Certified Environmental Engineer (BCEE) Certified by Eminence, American Academy of Environmental Engineers	2011-present
Department Chair Department of Civil and Environmental Engineering, University of Michigan	2008 – 2011
Professor Department of Civil and Environmental Engineering, Virginia Tech	2005 – 2007
Adjunct Professor Department of Biological Sciences, Virginia Tech	2002 – 2007

Associate Professor Department of Civil and Environmental Engineering, Virginia Tech	2000 – 2005
Assistant Professor Department of Civil and Environmental Engineering, Virginia Tech	1994 – 2000
Co-Founder and Co-Principal Investigator at Virginia Tech Environmental BioNanoTechnology Laboratory, Virginia Tech Fralin Environmental Biotechnology Laboratory, Virginia Tech	2005 – 2007 1995 – 1999
Project Engineer CH2M Hill, Inc. (now Jacobs Engineering Group), Dallas, Texas	1986 – 1989

ADMINISTRATIVE ACCOMPLISHMENTS

- | | |
|--|-------------------------|
| <ul style="list-style-type: none"> Became Diversity, Equity, and Inclusion (DEI) chair in the summer of 2020 to re-envision leadership around DEI and lead a collaborative team to develop an actionable roadmap for change. The committee was transformed to include voting members from across the department (students, staff, post-docs and faculty), all member categories were given equally visible leading positions in the committee, and structured the committee operating practices toward transparency and inclusion to serve as a model. A roadmap to drive systemic change was drafted, vetted, modified and is being finalized for publication. The roadmap includes efforts and goals across six pillars (recruiting a diverse community; building and valuing DEI skills; fostering a strong, connected, and successful community; developing a healthy and safe environment for mentoring, sponsorship, and advocacy; enabling an honest and transparent dialogue; and transforming our curriculum). In anticipation of an upcoming sabbatical and to ensure leadership continuity, I stepped down as lead once the roadmap was entering final production. This allows a new leader to be established in time for the public launch. | July 2020 - current |
| <ul style="list-style-type: none"> As a member of the board of the Association of Environmental Engineering and Science Professors (a position elected by the organization's membership), I was elected onto the Vice-President, President-Elect, and President path by the board. As president, I engaged international members by hosting the first AEESP-International Water Association (IWA) joint reception at the IWA World Congress in Quebec City, and appointed international members to key committee leadership positions. I also initiated the movement of the organization from being self-run to using a management company that continues to oversee the board's functions. This has allowed the board to act more as a visionary and less as a managing body. All these changes remain today. | 2007-2011 |
| <ul style="list-style-type: none"> As department chair of Civil and Environmental Engineering at the University of Michigan, I lead or oversaw: a significant transition in administrative staff; centralization of departmental operating management to enhance efficiencies; the development of procedures to achieve a balanced budget; the development of standard operating procedures and a governing document for the first time; the development of new strategic directions for the department; an increase in external funding of 40%; the doubling of student enrollments within a 5 year period; addition of \$8.5 million to the department's endowment; and hiring five faculty. | Jan 2008–
Aug 2011 |
| <ul style="list-style-type: none"> As a co-PI of the \$3.5 million Virginia Tech NSF Advance Institutional Transformation Grant focused on women's leadership in academia, I lead activities associated with graduate student and post-doctoral engagement toward the professoriate. | July 2003–
June 2008 |

MAJOR HONORS AND NOTABLE RECOGNITIONS

• American Society of Civil Engineers Wesley W. Horner Award for Daigger et al., Progress and Promise Transitioning to the One Water/Resource Recovery Integrated Urban Water Management Systems. <i>J Env Eng</i> , 2019.	2021
• American Academy of Environmental Engineers & Scientists Science Award	2020
• University of Illinois Urbana-Champaign Civil & Environmental Engineering Alumni Assoc. Distinguished Alumna Award	2020
• Kappe Lecture, American Academy of Environmental Engineers & Scientists	2019 - 2020
• AEESP/WEF Master Lecture: An Academic Perspective on Rethinking Urban Water Infrastructure Across the Classroom, Lab and Field. WEFTEC 2017, Chicago IL. October 2, 2017.	2017
• Distinguished Faculty Fellow in Sustainability, University of Michigan	2017-present
• Named Borchardt and Glysson Collegiate Professor, University of Michigan	2016
• Elected Fellow, Association of Environmental Engineering & Science Professors.	2015
• <i>Environmental Science and Technology Letters</i> , Best of the Best Paper Award for Delgado Vela et al. 2015 (see publications list).	2015
• Selected AEESP Distinguished Lecturer.	2015-2016
• Elected Fellow of the International Water Association.	2014
• Alec Gallimore Faculty Award from the Society of Minority Engineers and Scientists - Graduate (SMES-G) for being an effective advocate, ally and advisor to students of color, April 2012.	2012
• Gordon Maskew Fair Distinguished Engineering Educator, Water Environment Federation.	2011
• Elected Fellow of the Water Environment Federation. Inaugural class.	2011
• Certification by Eminence, Board Certified Environmental Engineer (BCEE). American Academy of Environmental Engineers.	2011
• President and Member of the Board, Association of Environmental Engineering and Science Professors. Position on Board of Directors is elected nationally, and position of president is then elected by the Board of Directors.	2007 - 2011
• Rudolfs Industrial Waste Management Medal for noteworthy accomplishments in industrial waste management research, Water Environment Federation. For Henriques et al. 2007. Activated sludge inhibition by chemical stressors – a comprehensive study. <i>Water Environment Research</i> 79(9):940-951.	2008
• CEE Alumni Teaching Excellence Award, Virginia Tech	2006
• Women's Center Advancing Women Award, Virginia Tech	2005
• Excellence in Research Award, College of Engineering, Virginia Tech	2005
• Faculty Fellow, \$15,000 over 3 years, College of Engineering, Virginia Tech	2003 – 2006
• Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/process research, Water Environment Federation. For Charles B. Bott and Nancy G. Love, for "Investigating a mechanistic cause for activated sludge deflocculation in response to shock loads of toxic electrophilic chemicals." <i>Water Environment Research</i> , 74:306-315 (2002).	2003
• Outstanding Young Alumni, College of Engineering & Science, Clemson Univ.	2002
• Paul L. Busch Award for Innovation in Applied Water Quality Research, Water Environment Research Foundation (\$100,000)	2001

- National Science Foundation CAREER Award Recipient 1995
- American Association of University Women Selected Professions Fellow 1993
- Chi Epsilon Civil Engineering Honor Society initiate 1985

PROFESSIONAL MEMBERSHIPS, ACTIVITIES AND APPOINTMENTS

Editorial Boards

- ACS ES&T Engineering, Associate Editor (inaugural) 2020 - present
- Water Environment Research
 - Editorial Board 2019 – present
 - Editor-in-Chief search committee 2009
 - Associate Editor 2002 - 2005
- Environmental Engineering Science, Editorial Board 2015 - present

Current Memberships and Activities

- American Association for the Advancement of Science
 - Member 2016 - present
- American Academy of Environmental Engineers and Scientist (AAEES)
 - Member 2011 – present
 - Board Certified Environmental Engineer (by eminence) 2012 – present
 - Environmental Engineering Science Awards Committee 2020 - present
 - Environmental Engineering and Science Foundation Board of Directors 2014-2016
- American Chemical Society
 - Member 2012 - present
- American Society of Civil Engineers (ASCE)
 - Member Discontinuous
 - Active participant: ASCE Department Chair's meetings 1980's – present
 - EWRE Sustainability subcommittee 2008-2011
 - 2007 - 2009
- American Society for Engineering Education
 - Member Discontinuous
 - 1994 - present
- Association of Environmental Engineering and Science Professors
 - Member and Fellow (2015) 1994 – present
 - Master's Thesis Awards Subcommittee (Chair, 1999) 1997 – 1999
 - Awards Committee (Chair, 2006-2007) 2004 – 2007
 - Board of Directors (Elected by membership; elected by board as Vice-President 2008-2009; President-Elect 2009-2010; President 2010-2011) 2007 – 2011
 - Co-Chair, AEESP 2017 Biannual Conference 2016-2017
 - AEESP Fellows Selection Committee 2018
- International Water Association
 - Member and Fellow (2014) 1989 – present
 - Environmental Engineering Education specialist's group, chair effective 2014 2006 - present
 - Microbial Ecology in Water Engineering (MEWE, formerly Activated Sludge Population Dynamics) Specialty Group member 1995 – present
 - MEWE program committee 2005 - 2019
 - Chair, MEWE2013 conference, Ann Arbor, Michigan USA 2012 - 2013
 - Leading Edge Technology (LET) Program Committee 2007 – 2009
 - Instrumentation, Control and Automation Group 2001 – 2007
 - Organizing Committee, Nutrient Management 2007 Workshop 2005 – 2007

MEGA working group member	2005 – 2008
Biofilms 2010 Conference Program Committee	2009 – 2010
• Water Environment Federation	
Member and Fellow (2011)	1986 – present
Awards Committee	2012 - present
Research Symposium Subcommittee	1999 – 2003
Virginia WEA Student Activities Committee	1997 – 2007
Work Force Task Force – WEF Presidential Appointment	2008 – 2009
Nutrient Specialty Conference Program Committee	2008 – 2009
Chair, Academic Committee	2009 – 2013
• Water Environment Research Foundation	
Leaders Innovation Forum for Technology (LIFT) Steering Committee	2015 – current
Chlorination Control and Monitoring Practices Project Advisory Committee	2000 - 2002
Wastewater Security Project Subcommittee	2003 – 2004
Sensors for Security in WWT Systems Project Advisory Committee	2005 – 2007
Paul L. Busch Award Selection Committee	2005 – 2011
Membrane Aerated Biofilm Reactor Project Advisory Committee, U2R14	2016-2018
Current Board Appointments	
• National Water Research Institute Independent Science Advisory Panel for Metropolitan Water District	2019-present
• ReNUWit Engineering Research Center Science Advisory Board, Stanford, UC-Berkeley, Colorado School of Mines, New Mexico State University	2015-2020
• University of Iowa NSF Sustainable Water Development Graduate Program Advisory Board Member	2017-2019
Prior Memberships, Activities and Board Appointments	
• American Society for Microbiology, Member	1991–2010
• Environmental Protection Agency EPA Science Advisory Board, Drinking Water Subcommittee	2010 - 2012
• Appointed Member, Michigan Department of Agriculture/Michigan Department of Environmental Quality Food Processors Working Group	2009 - 2010
• Michigan Economic Development Corporation (MEDC) Water Cluster Committee, establishing water-based technology investment goals for Michigan.	2008 – 2010
• National Society of Professional Engineers Member	Discontinuous 1987 - 2019
• Member, NSF's CLEANER (later, WATERS Network) Initiative as (a) planning phase participant, (b) Co-PI on environmental impacts to coastal margins planning grant and (c) Member, sensor sub-committee.	2002 – 2007
• Appointed by Governors Warner and Kaine (Virginia) to the Scientific and Technical Advisory Committee to the Chesapeake Executive Council Workshop co-chair and author, Establishing a Research Agenda for Assessing the Bioavailability of Wastewater-Derived Organic Nitrogen in Treatment Systems and Receiving Waters, September 27 and 28, 2007, Baltimore, Maryland. Hhttp://www.chesapeake.org/stac/Pubs/eonreport.pdf	2005 – 2007
• Women In Engineering Leadership Institute (WELI) Strategic Planning Committee	2004 – 2005

MAJOR COMMUNITY SERVICE AND OUTREACH ACTIVITIES

- **N95DECON.org.** A consortium of volunteer researchers from universities across the United States and world who worked to decipher, evaluate, and disseminate technically accurate information about N95 respirators as well as other kinds of masks and face coverings, in response the coronavirus pandemic. A key member of the Heal Treatment sub-team and participant in other subcommittees, as needed. April 2020 - present
- **City of Flint Technical Advisory Committee.** Appointed by Mayors Weaver (2017-2019) and Neeley (2019 – current) to provide guidance on behalf of the city's efforts in response to the Flint Water Crisis and other environmental and public health needs. 2017 – present
- **Train-the-Trainers.** Designed, developed, and delivered a curriculum about faucet-mounted point-of-use filters to Flint residents who became trainers for other Flint residents. Syndicated the curriculum to other communities with input from Flint community and partners. 2018 - present
- **K-12 Drinking Water Filtration.** Working with multiple organizations in the following ways: (a) developing and providing technical guidance on assessing the performance of point-of-use filters and advanced hydration stations used in schools (Flint Community Schools, Ann Arbor Public Schools); (b) provided technical input to the development of a model law by the National Resources Defense Council; (c) serving in a technical advisory role to the FilterFirst grassroots initiative that has successfully introduced bipartisan legislation in the State of Michigan to require point-of-use filtration of drinking water in schools and daycare centers throughout the state. 2018 - present
- **Partnerships around Research and Education in Ethiopia.** Partnering with faculty in various Institutes at Addis Ababa University in Ethiopia to advance graduate education as new Ph.D. programs are implemented. Create opportunities for AAU students to visit U-M for beneficial research experiences and partner those students with U-M Ph.D. students who serve as peer collaborators. Serve on the Ph.D. committees of AAU students. 2017 - 2019
- **Community-Targeted Scholarship**
N. G. Love, R. Jackson, S. P. McElmurry. Water Stays in the Pipes Longer in Shrinking Cities – A Challenge for Public Health. *The Conversation*, May 24, 2019. <http://theconversation.com/water-stays-in-the-pipes-longer-in-shrinking-cities-a-challenge-for-public-health-116119>
N. G. Love. We All Deserve to Have Confidence in Our Water. *Medium*. May 10, 2019. https://medium.com/@nglove/we-all-deserve-to-have-confidence-in-our-water-6994b2f7e00c?source=friends_link&sk=a1703f45b60797717658138319b971b1

MAJOR UNIVERSITY, COLLEGE & DEPARTMENT SERVICE/PROGRAMMATIC RESPONSIBILITIES

University of Michigan

- President's Public Health Advisory Committee on COVID Fall 2020-present
- UM Center for Global Health Equity Leadership Council, and co-chair of Climate Vulnerability and Health group. \$20 million center that is launching in 2021. Aug 2020-present
- University of Michigan Scientific Reviewer, Institutional Biosafety Committee (IBC), appointed by Vice President for Research July 1, 2020 – June 30, 2023
- CEE Diversity, Equity, and Inclusion Chair (through 2020), then committee member Aug 2020-present
- CEE Executive Committee (elected position) 2019-2021
- Undergraduate Recruitment Committee 2019-2020
- Richart Lecture Committee 2017-2018

	2019-2020
• Advisory Group on University of Michigan activities in Ethiopia, Provost's office	2017-2019
• Advisory Group: U-M Lead and Copper Rule Project, Graham Institute overseeing Mott Foundation project.	2018-2019
• Civil and Environmental Engineering Strategic Plan Implementation and Development Committee, Revising plan in 2017-2018	2013-2018
• College of Engineering Graduate Recruitment, Retention & Summer Programs Advisory Group	2017-2018
• Internal Advisory Board Member, Center for Socially-Engaged Design	2017-2020
• Administrative Structure Working Group, School of the Environment and Sustainability Transition Subcommittee	2017
• U-M ADVANCE LAUNCH Committee Chair	2016-2017
• College of Engineering Promotion, Tenure and Reappointment Process Review Committee, Chair	2017
• UM Energy Institute Faculty Affiliate (https://energy.umich.edu/)	2018-present
• College of Engineering Faculty Search Committee for positions in Engineering Education Research (EER)	2015-2016
• Ethiopia – Michigan Collaborative Consortium (EMC2) Planning Committee, appointed by Assoc Provost James Holloway	2015-2018
• Provost's Committee on Environment and Sustainability	2016
• Provost's Poverty Visioning Committee	2015-2016
• Integrated Training in Microbial Systems (ITIMS) (Burroughs Wellcome Fund training program) Faculty Affiliate	2015 - present
• President's Advisory Commission on Women's Issues	2014-2015
• President's Postdoctoral Fellowship Advisory Committee	2014-2015
• Rackham Graduate School Dean Search Committee	2014
• Provost's Promotion and Tenure Committee	2013
• Mentoring Others Results in Excellence (MORE) Committee, Rackham Graduate School, Member and Chair	2012 - 2013
• Alumni Liaison Committee, Civil and Environmental Engineering	2012-2014
• Deans Advisory Committee on Female Faculty, College of Engineering	2012-2013
• Faculty Search Committee Co-Chair, Civil and Environmental Engineering	2011-2012
• Center for Molecular and Clinical Epidemiology of Infectious Diseases (MAC-EPID) Faculty Affiliate	2009 - present
• Graham Sustainability Institute Faculty Affiliate	2009 - current
• College of Engineering Alumni Awards Selection Committee	2011
• Graham Environmental Sustainability Institute, Executive Committee	2009 - 2011
• College of Engineering Dean's Advisory Committee on Faculty Diversity	2010 - 2012
• Provost's Office - Classroom Emergency Training Video Planning Group	Fall 2008 – 2009
• College of Engineering <i>ad hoc</i> Committee on Graduate Student Excellence	Summer 2008
Virginia Tech	
• Chair, College of Engineering "Think Tank" Committee (6 faculty)	2006 – 2007
• Space/Overhead Return Allocation <i>ad hoc</i> Committee, Provost apptmt	2005

- College of Engineering Dean's Search Committee 2005
- co-Coordinator, Via Academic Preparation Program for graduate student professional development, Dept of Civil and Environmental Engineering 2004 – 2007
- co-Principal Investigator and Advance Professor for \$3.5 million NSF Advance Institutional Transformation grant focused on increasing the participation and advancement of women in academic STEM careers. Chair: Advancing Women into the Profession 2003 – 2006
- Environmental Public Health Committee 2003 – 2004
- Provost's Implementation Committee, Biomedical & Public Health Institute 2002
- Board of Directors, WPI, Inc., a Virginia Tech affiliated company. 2001 – 2003
- Provost's Environmental Health Committee 2002
- Provost's Committee on Biomedical Research 2001 – 2002
- College of Engineering Diversity Committee 2001 – 2005
- Environmental Engineering Laboratory Coordinator & staff supervisor 1997 – 2005
- University Cross Cutting Initiatives Committee, Environment & Energy 1998 – 2000
- Fralin Biotechnology Center 5 Year Review Committee 2000
- Environmental Engineering Graduate Student Recruitment Officer 2000

UNIVERSITY TEACHING RESPONSIBILITIES

Introduction to Environmental Engineering; Models in Environmental Engineering; Water and Wastewater Treatment Design; Applied Biology of Environmental Systems; Biological Treatment Processes: Theory and Design; Environmental Microbiology; Introduction to Civil and Environmental Engineering; Engineering Solutions to Global Water Issues (Freshmen Design-Build-Test course); Decentralized Water Supply, Hygiene and Sanitation (co-produced with faculty at Addis Ababa University, Ethiopia); Urban Environmental Systems: Project-based Experiences for Students (focused on a diverse group of students in Engineering; Urban Planning, Public Health, Environment & Sustainability); Robots, Sensors and Smart Water Systems (co-developed Freshmen Design-Build-Test Course)

ADVISING RESPONSIBILITIES

Currently serving as advisor for 2 undergraduate research students, 1 master's students, and 8 Ph.D. students. Previously advised 44 M.S. students with thesis or significant project, 18 Ph.D. students, 7 post-doctoral research associates, and 36 undergraduate research projects/theses.

Major Undergraduate Research Projects

1. Harrison Suchyta. Summer 2019-current. Developing urine-derived fertilizers for flowering and woody plants at UM's Botanical Garden.
2. Leah Pifer. Fall 2019 – current. Developing an algorithm for a hand-held water quality monitoring strip.
3. Julia Raneses. Fall 2019 – Aug 2020. Building-Scale Urine Separation Systems.
4. Kensey Dahquist. Spring 2019 – current. Projects in support of building-scale urine separation, collection and processing for nutrient-energy-water cycling.
5. Yen Jee Ooi. Summer 2018 (at Rich Earth Institute), then Fall 2018-2019. Nutrient analysis for NSF INFEWS project.
6. Brittany Brown. Summers 2017 and 2018. Characterization of *Stenotrophomonas maltophilia* from drinking water through culturing and qPCR, and bioavailability of high versus low water age carbon.
7. Myriam Sarment. 2018 summer. Bioavailability of high versus low water age carbon in drinking water isolates.
8. Alexi Sinanaj. 2017 – 2018. Pharmaceutical removal from urine through activated carbon adsorption.
9. Brady Nishimiya. 2017-2018. Disinfection residual effectiveness of point-of-use product.
10. Nicholas Lowe. 2017-2018. Automated flushing device to improve water quality through point-of-use drinking water filters.

11. Dylan Raye-Leonard. 2016-2018. Urine-derived fertilizer project.
12. Brittany Brown. 2016. Microbial ecology of novel nitrogen removal systems.
13. Ishi Keenum. 2015 – 2016. Plasma treatment of source-separated urine for fertilizer development (co-mentor with K. Wigginton).
14. Mariah Gnegy. 2015-2016. DNA-based analysis of bacteria and viruses in source separated urine (co-mentor with K. Wigginton).
15. Weitian Wang. 2010-2011. Microaerobic Removal of Pharmaceuticals from Wastewater
16. Celine Saucier. 2010-2011. Nitrate Removal to Enable the Effluent Organic Nitrogen Bioassay
17. Bryan VanDuinen. 2009. Life Cycle Assessment of Various Disposal Methods for Unused Pharmaceuticals.
18. Shayan Sengupta. 2009: Assessing the Toxicity of Pharmaceuticals at Doses Expected from Secondary Infections Experienced During a Pandemic.
19. Genevieve Ho. 2008-2009: First project - Assessing a Thin-Film pH Biosensor. Second project – Abiotic Ammonia release from Effluent Organic Nitrogen Along Salinity Gradients.
20. Brian Harris. 2007: Assessing Oxidative Stress Response Function of Alginate-Immobilized Bacteria
21. Zachary Frye. 2006. Assessing the Feasibility of Nanostructure-Enhanced Nitrifying Microbial Fuel Cells
22. Brian Segal. 2006-2007. Evaluation of Ammonia Oxidizing Bacterial Biofilms.
23. Stephanie Harris. 2005-2006. Development of a Microfluidic Immunomagnetic Separation Biosensor for Detecting Bacterial Pathogens.
24. Beth McConnell. 2003-2004. The Affect of Physiology on Bacterial Responses to Oxidative Uncouplers
25. Suzanne Ayers. 2002. VIA Undergraduate Scholar: Evaluating the Impact of Toxic Shocks on Wastewater Treatment Performance
26. Felicia Glapion. 2001-2002. NEM-Induced Potassium Efflux in *Pseudomonas aeruginosa*
27. Monica Mace. 2000-2001. GE Scholarship: Denitrification of Aquaculture Wastewaters
28. Denise Gillam. 2000. Water Center Undergraduate Fellowship: The Impact of Potassium Efflux on Biofilm Treatment Systems Exposed to Electrophilic Toxins
29. Mike Gatz. 1999-2000. Using Two-Dimensional Gel Electrophoresis to Characterize Stress Proteins (Co-advised with Dr. Ann Stevens)
30. Bethany McRae. 1999-2000. NSF REU: Induction of the Glutathione-Gated Potassium Efflux System in *Sphingomonas capsulata* Exposed to HOCl
31. Jennifer Abrajano. 1999-2000. NSF REU: Assessing the Metabolism of Xenobiotic Compounds by Microaerobically-Grown Magnetotactic Bacteria
32. Scott Phipps. 1998-1999. Dewatering of Oily Wastewater Sludges. (Co-advised with Dr. John Novak)
33. Katya Bilyk. 1998-1999. NSF REU: Nitrite Inhibition and Toluene Degradation Under Denitrifying Conditions
34. Julie Wheeler. 1997-1998. NSF REU: Impact of Xenobiotic Stressors on Activated Sludge System Performance
35. Mary Rust. 1996-1997. Water Center Undergraduate Fellowship and NSF REU: Development and Isolation of Acetaldehyde Oxime and Methylethyl Ketoxime Degrading Cultures
36. Elliott Wheeler. 1995-1996. The Role of Various Cations in Settling and Dewatering of Biological Wastewater Treatment Sludges
37. Jon Treadway. 1995. Determination of Proteins in Activated Sludge Using Commercial Assays
38. Kevin Gilmore. Fall 1995: The Impact of Oximes on the Degree and Rate of Nitrification in Activated Sludge Cultures. Spring 1996: Evaluation of Chemical Oxidation as Pretreatment for Wastewaters Containing Aldicarb Oxime

Masters Students with Theses, Extensive Research Project, or Project Report

1. Julia Raneses. 2019 – current. Nutrient balances at the community scale.
2. Nick J. Lowe. 2018 – 2019. Toxicological monitoring of SWIFT effluent from Hampton Roads Sanitation District.

3. Avery Carlson. 2016 – 2018. Isolating and identifying comma-shaped nuisance bacteria in Traverse City's membrane bioreactor treatment system. (co-advised with Glen Daigger)
4. Enrique Rodriguez. 2016 – 2018. Plasma as a platform for advanced oxidation of urine to generate safe fertilizers (co-advised with Krista Wigginton)
5. Zixu Zhao. 2016-2017. Optimizing flushing to reduce microbial contamination of point-of-use filtered drinking water.
6. Andrea McFarland. 2015 – 2018. NSF Fellowship Recipient. Water quality benefits due to green infrastructure. (Co-advised with Larissa Larsen, Urban Planning). National Achievement: NSF Graduate Research Fellowship.
7. Samayyah Williams. 2014-2015. Modeling, understanding, and assessing technologies for the Detroit Water and Sewerage Department (DWSD) Wastewater Treatment Plant.
8. Nigel Beaton. 2014-2015. Low energy-demanding nitrogen removal from anaerobic effluents using biofilm technologies.
9. Anton Dapcic. 2013 – 2014. A performance evaluation of the WASAC™ energy recovery process.
10. Angelica Perez De La Rosa. 2010-2012. The impact of chlorinated phenols on the microbial ecology of point-of-use drinking water filters.
11. C. Davis Powell. 2011-2014. Evaluating the environmental impacts of urine source separation.
12. Chris Moline. 2010-2011. The fate of pharmaceuticals in microaerobic biological treatment processes.
13. Alexi Ernstoff. 2009 – 2011. The impact of culturing buffer on the ability of *Nitrosomonas europaea* to biotransform 17 α -ethinylestradiol. Current affiliation – Ph.D. student, Technical University of Denmark.
14. Sam Hardin. 2006-2011. The effectiveness of corrective action strategies on chemically stressed biological wastewater treatment systems. Current affiliation – environmental engineering consulting. National Achievement: WEFTEC Best Poster, 1st Place, 2008.
15. Romeo Capuno. 2005-2007. Modeling anaerobic ammonia oxidizing biofilms. Current affiliation – environmental engineering consulting.
16. Jason Beck. 2005-2007. Evaluating deammonification processes to achieve nitrogen removal from dairy waste. Current affiliation – environmental engineering consulting.
17. Jeremy Guest. 2005-2007. Laboratory testing of process controls for the mitigation of toxic shock events at enhanced biological phosphorus removal wastewater treatment plants. Current affiliation – Assistant Professor, University of Illinois.
18. Kaoru Ikuma. 2004-2007. The development of a bacterial biosensor designed to detect oxidative chemicals in water: correlating sensor relevance to mammalian brain cells and assessing bacterial cell immobilization strategies. Current affiliation – Assistant Professor, Iowa State University.
19. Mert Muftugil. 2004-2011. Enhanced Biological Phosphorus Removal of Dairy Manure using Sequencing Batch Reactors: Performance, Kinetics and Model Development. Current affiliation – environmental engineering consulting.
20. Anna Zaklikowski. 2004-2006. Evaluating the Effectiveness of Disinfection Strategies in the Inhibition and Inactivation of Ammonia Oxidizing Bacteria. Current affiliation – environmental engineering consulting.
21. Ka Man Chan. 2004-2005. Feasibility Study of In Situ Bioremediation of Bis(2-Chloroethyl) Ether and 1,2-Dichloroethane. Affiliation upon graduation – water utility.
22. Paul Sweetman. 2004-2005. Evaluating the Fate of Manure Nitrogen in Confined Dairy Waste Operations: A Full-Scale Waste Analysis and Start-up Protocol for an Anammox –Based Treatment Technology Applicable to Dairy Waste Management. Affiliation upon graduation – government position in Ireland.
23. Irina Chakraborty. (Degree from University of Helsinki, Finland) 2002-2005. Characterizing the Adaptation of a Subsurface Microbial Community using Biomolecular Tools (co-advised with Dr. Ann Stevens, Biology). Affiliation upon graduation – Ph.D. student in environmental microbiology.
24. Katharine Linares. 2002-2004. Development of a Biosensor for Detecting Toxic Electrophilic Chemicals in Waters. Current affiliation – environmental engineering consulting.

25. Jennifer Dauphinais. 2002-2003. Effects of Toxic Chemicals on Biological Wastewater Treatment Processes. Current affiliation – US government-based environmental services.
26. Rachelle Rhodes. 2002-2004. Subsurface Microbial Community Adaptation to Xenobiotic Influx. Current affiliation – environmental engineering consulting.
27. Susanna Leung. 2001-2003. Oxygen Transfer Efficiency in a Biological Aerated Filter (co-advised with John Little). Current affiliation – environmental engineering consulting.
28. Giacomo Sonzini. (Degree from Politecnico Di Milano, Italy) 2001. Investigation of K⁺ Efflux as Response to Intoxication for Nitrifying Activated Sludge. Affiliation upon graduating – financial analyst in Italy.
29. Kristina Yanosek (Biological Systems Engineering). 2000-2002. Enhanced Biological Phosphorus Removal from Dairy Manure to Meet Nitrogen and Phosphorus Crop Nutrient Requirements (co-advised with Dr. Mary Leigh Wolfe). Affiliation upon graduation – US Dept of Interior.
30. David Whichard. 2000-2001. Nitrogen Removal from Dairy Manure Wastewater Using Sequencing Batch Reactors. Affiliation upon graduating – environmental services in industry.
31. Kofi Asiedu. 2000-2001. Evaluating Biological Treatment Systems: I. Moving Bed Biofilm Reactor Versus Biological Aerated Filter. II. Sulfide-Induced Corrosion in Anaerobic Digester Gas Piping. Current affiliation – Engineer III, Prince William County, Virginia.
32. Melissa Fouratt (Biological Sciences). 1998-2001. Application of Molecular Techniques to the Characterization of a Nitrifying Bioaugmentation Culture (co-advised with Dr. Ann Stevens). Position upon graduation – pharmaceutical sales.
33. Scott Phipps. 1999-2001. Performance Evaluation and Yield Determination of a Full-Scale Biological Aerated Filter. Current affiliation – environmental engineering consulting.
34. Brian Brazil. 1999-2001. Evaluation of an Effluent Treatment Strategy to Control Nitrogen from a Recirculating Aquaculture Facility. Current affiliation – environmental engineering consulting.
35. Robert Wimmer. 1998-2001. Development of a Biosensor to Predict Activated Sludge Deflocculation and the Link Between Chlorination and Potassium Efflux. Current affiliation – environmental engineering consulting.
36. Arnaud Delahaye. 1997-1998. Distribution and Characteristics of Biomass in an Upflow Biological Aerated Filter. Affiliation upon graduation – Civil servant in France.
37. Kari Husovitz. 1997-1998. The Influence of Hydraulic Loading Rate on Nitrification Performance in a Two-Stage Biological Aerated Filter Pilot System. Current affiliation – environmental engineering consulting.
38. Kevin Gilmore. 1997-1999. Using Oligonucleotide Probes to Characterize Nitrification in a Two-Stage Pilot Plant Scale Biological Aerated Filter System. Current affiliation – Associate Professor, Bucknell University.
39. Jeff McGinnis. 1996-2003. Biodegradation and Dewatering of an Industrial Waste Oil. Current affiliation – environmental engineering consulting.
40. Jennifer Phillips. 1996-1997. Denitrification or Recirculating Aquaculture System Waters Using an Upflow Biofilter and a Fermented Substrate. Current affiliation – environmental engineering consulting.
41. Kristina Perri. 1996-1997. The Effectiveness of Multiple Redox Treatment Strategies on the Treatability of a High Strength Industrial Wastewater. Current affiliation – environmental engineering consulting.
42. James Drew Fettig. 1995-1998. A Study of the Patterns, Stoichiometry, and Kinetics of Microbial BTX Degradation Under Denitrifying Conditions by an Activated Sludge Consortium Receiving a Mixed Waste. Current affiliation – environmental engineering consulting.
43. Michelle Smith. 1995-1996. The Effect of Cation Addition on the Settling and Dewatering Properties of an Industrial Activated Sludge. Affiliation upon graduation – environmental engineering consulting in Canada.
44. Erika Lubkowitz (Bailey). 1995-1996. Biological Treatment Schemes for Preventing Oxime Inhibition of Nitrification. Current affiliation – environmental engineering consulting.

45. Patrick Brooks. 1995-1996. An Investigation of Temperature Effects on Denitrifying Bacterial Populations in a Biological Nutrient Removal System. Current affiliation – environmental engineering consulting.

Ph.D. Dissertations, Student Placement and Nationally Recognized Achievements by Mentees

1. Brittany Brown Hicks. 2019 – 2024 (anticipated). Project being defined. *National Achievement*: Ford Foundation Predoctoral Fellowship.
2. Alyssa Schubert. 2018 – 2023 (anticipated). Crowd-sourced water quality monitoring and community access to water monitoring.
3. Lucinda Li. 2018 – 2023 (anticipated). The impact of urine derived fertilizers on soil health (co-advised with Krista Wigginton).
4. Enrique Rodriguez. 2018 – 2022 (anticipated). Suspect screening, effect directed analysis and chemical risk of resource efficiency processes (co-advised with Krista Wigginton).
5. Hollie Adejumo. 2017 – 2022 (anticipated). The Toxicity and Transformation of Nitrogenated Disinfection Byproducts in the Human Gut (co-advised with Laura Rozek). *National Achievement*: NSF Graduate Research Fellowship.
6. Avery Carlson. 2018 – 2021 (anticipated). Project topic being developed (co-advised with Glen Daigger).
7. Brett Wagner. 2016 – 2021 (anticipated). Membrane aerated biofilm reactor technology (co-advised with Glen Daigger). *National Achievement*: NSF Graduate Research Fellowship.
8. Sara Troutman. 2015-2020. Integrated urban water infrastructure systems modeling at the green and grey infrastructure interface. (co-advised with Branko Kerkez). *Current Affiliation*: Xylem, Inc. *National Achievement*: NSF Graduate Research Fellowship.
9. Zerihun Bekele Alemayehu. 2015-2020. Use of sensor-mediated controls to achieve enhanced, low energy nitrogen removal during mainstream wastewater treatment. (Co-advised with Charles Bott, Hampton Roads Sanitation District). *Current Affiliation*: Engineer with BASF Corporation.
10. Chia-Chen Wu. 2013- 2018. Bacterial colonization of point-of-use (PoU) drinking water filters, selection of opportunistic pathogens and presence of antibiotic resistance genes. (Co-advised with Terese Olson). *Current Affiliation*: Postdoctoral Research Associate, Wayne State University
11. Heather Goetsch. 2014 –2018. Evaluating the benefits and risks of source separation as a nutrient management strategy. (Co-advised with Krista Wigginton). *Current Affiliation*: Department of Energy. *National Achievement*: AAAS Fellow with the Dept of Energy.
12. Jeseth Delgado-Vela. 2012 –2018. NSF Fellowship Recipient and Ford Foundation Fellow. Nitrogen and Sulfur Cycling During Wastewater Treatment. (Co-advised with Greg Dick). *Current Affiliation*: Assistant Professor, Howard University, Washington D.C. *National Achievements*: NSF Graduate Research Fellowship; Ford Foundation Fellowship; AEESP Conference Best Student Presentation.
13. Lauren Stadler. 2010 – 2015. Fate of trace contaminants in bacterial communities under low dissolved oxygen environments. *Current Affiliation*: Assistant Professor, Rice University, Houston. *National Achievement*: NSF Graduate Research Fellowship; 2016 CH2M/AEESP Best Dissertation Award; AEESP Conference Best Student Presentation.
14. Sherri M. Cook. 2008-2014. Sustainable Waste Management: Modeling and Decision Strategies for Unused Medications and Wastewater Solids (Co-advised with Steve Skerlos). *Current Affiliation*: Assistant Professor, University of Colorado, Boulder. *National Achievement*: NSF Graduate Research Fellowship
15. Jeremy S. Guest. 2007-2012. Sustainable design of wastewater treatment systems: Evaluations of operational flexibility and phototrophs for resource recovery. (Co-advised with Steve Skerlos). *Current Affiliation*: Associate Professor, University of Illinois, Urbana-Champaign. *National Achievements*: 2014 NSF CAREER Award Recipient; 2016 Paul L. Busch Award, Water Research Foundation.
16. Ameet J. Pinto. 2005-2009. Upset Events at Wastewater Treatment Plants: Implications for Mitigative Strategy Development and Bioreactor Microbial Ecology. *Current Affiliation*: Assistant Professor, Northeastern University, Boston. *National Achievements*: 2018 NSF CAREER Award Recipient; 2018 ISME/IWA Rising Star Bio Cluster Award; 2019 Paul L. Busch Award, Water Research Foundation .

17. Wendell Khunjar. 2004-2009. Elucidating Factors that Impact the Removal of Organic Microconstituents by Heterotrophic and Ammonia Oxidizing Bacteria. *Current Affiliation:* Hazen and Sawyer Consultants.
18. Martin Musabyimana. 2005-2008. Deammonification Process Kinetics and Inhibition Evaluation. *Current Affiliation:* East Bay Municipal Utility District, San Francisco, CA.
19. Kevin R. Gilmore. 2005-2008. Treatment of High-Strength Nitrogen Wastewater With a Hollow-Fiber Membrane-Aerated Biofilm Reactor: A Comprehensive Evaluation. *Current Affiliation:* Associate Professor, Bucknell University.
20. Jocelyn Fraga Muller. 2002-2006. The Role of Multidrug Efflux Pumps in the Stress Response of *Pseudomonas aeruginosa* to Organic Contamination. (Co-advised with Ann Stevens) *Current Affiliation:* Community College Instructor.
21. Ines D. S. Henriques. 2001-2006. The Response of Activated Sludge Cultures to Toxic Chemicals: Process Performance Effects, Role of Floc Structure, and Detection of Physiological Changes by Footprinting Methods. *Current Affiliation:* Business CEO, Portugal. National Achievement: WEFTEC Best Poster 1st Place, 2003.
22. Richard T. Kelly II. 2001-2005. Chemical Inhibition of Nitrification: Evaluating Methods to Detect and Characterize Inhibition and the Role of Selected Stress Responses Upon Exposure to Oxidative and Hydrophobic Toxins. *Current Affiliation:* Brown and Caldwell, Seattle, Washington.
23. R. David Holbrook. 2000-2003. The Role of Colloids in Defining the Fate of Endocrine System Disrupting Chemicals in Wastewater Treatment Systems (Co-advised with Dr. John Novak). *Current Affiliation:* Chief, Surface and Microanalysis Sciences Division, National Institute of Standards and Technology. *National Achievement:* 2010 PECASE (Presidential Early Career Award for Scientists and Engineers) recipient.
24. Charles B. Bott. 1997-2001. Elucidating the Role of Toxin-Induced Microbial Stress Responses in Biological Wastewater Treatment Process Upset. Affiliation upon graduation: environmental engineering consulting, then Assistant and Associate Professor at Virginia Military Institute. *Current Affiliation:* Director of Water Technology and Research, Hampton Roads Sanitation District, Virginia. *National Achievements:* Parsons Engineering Science/AEESP Doctoral Thesis Award; AEESP Fred Pohland Medal.
25. Guihua Ma. 1995-1999. The Kinetics, Biochemical Patterns, and Microbial Ecology in Multiredox Activated Sludge Systems Treating BTX Containing Wastewater. *Current Affiliation:* KCI, Inc., Baltimore, MD.

Post-Doctoral Research Associates

1. William Tarpeh, 2017-2018. Pharmaceutical transformation products through urine-derived fertilizer processing technologies. Co-advised with K. R. Wigginton. *Current Affiliation:* Assistant Professor of Chemical Engineering, Stanford University.
2. Rebecca Lahr, 2015-2016. Microbial fate in source-separated urine. Co-advised with K. R. Wigginton. *Prior Affiliation:* Assistant Professor, Michigan State University.
3. Dr. Kelly Martin. 2013 – 2015. Innovative, Low Energy Nitrogen Removal from Anaerobic Effluents. *Current Affiliation:* Black and Veatch, Inc.
4. Dr. Sudeshna Ghosh. 2008-2012. Chemical stressor-induced antibiotic resistance. *Current Affiliation:* Self Employed.
5. Dr. Kartik Chandran. 2004-2005. Chemical stress mechanisms in nitrifying bacteria. *Current Affiliation:* Associate Professor, Columbia University. *National Achievements:* NSF CAREER Award recipient; 2015 MacArthur Fellow; 2010 Paul L. Busch Award, Water Research Foundation.
6. Dr. Jane Duncan. 1998-1999. Heat shock protein expression in response to chemical stress in activated sludge. *Current Affiliation:* Research Scientist, Dept of Biochemistry, Virginia Tech.
7. Dr. Kathy Terlesky. 1996-1997. Heat shock protein expression in response to chemical stress in activated sludge. *Current Affiliation:* Vice President, Division Manager, SAIC, Inc., Charlottesville, Virginia.

PUBLICATIONS

Textbooks

1. Grady, C. P. L. Jr., G. T. Daigger, N. G. Love and C. Filipe. 2011. *Biological Wastewater Treatment*, 3rd Edition, Taylor and Francis Publishers.

Peer-Reviewed Journal Articles (undergraduate students; graduate students; post-doctoral research associates; *corresponding or senior author)

2. Wigginton, K. R., P. J. Arts, H. Clack, W. J. Fitzsimmons, M. Gamba, K. R. Harrison, W. LeBar, A. S. Luring, L. Li, W. W. Roberts, N. Rockey, J. Torreblanca, C. Young, L. G. Anderegg, A. M. Cohn, J. M. Doyle, C. M. Meisenholder, L. Raskin, N. G. Love*, and K. S. Kaye*. 2021. Validation of N95 filtering facepiece respirator decontamination methods available at a large university hospital. *Open Forum Infectious Diseases*. Accepted. DOI: 10.1093/ofid/ofaa610.
3. Delgado-Vela, J., L. A. Bristow, H. K. Marchant, N. G. Love and G. J. Dick*. 2021. Sulfide alters microbial functional potential in a methane and nitrogen cycling biofilm reactor. *Environmental Microbiology*. Accepted.
4. Hilton*, S., G. Keoleian, G. T. Daigger, B. Zhou, N. G. Love. 2021. Life-cycle assessment of urine diversion and conversion to fertilizer products at the city scale. *Environmental Science & Technology*. 55:593-603.
5. Anderegg, L., J. Doyle, M. L. Gardel, A. Gupta, C. Hallas, Y. Lensky, N. G. Love, B. A. Lucas, E. Mazenc, C. Meisenholder, A. Pillarissetti, D. Ranard, A. H. Squires, J. Vechakul, N. B. Vilas, S. Williams, D. Wilson, *Chen, T. and the N95DECON consortium. 2021. Heat and humidity for bioburden reduction of N95 filtering facepiece respirators. *Applied Biosafety*. In press. DOI:10.1089/apb.20.0053.
6. Rockey, N., P. J. Arts, L. Li, K. R. Harrison, K. Langenfeld, W. J. Fitzsimmons, A. S. Luring, N. G. Love, K. S. Kaye, L. Raskin, W. W. Roberts, B. Hegarty, K. R. Wigginton*. 2020. Humidity and deposition solution play a critical role in virus inactivation by heat treatment on N95 respirators. *mSphere*. 5(5):e00588-20. DOI:10.1128/mSphere.00588-20.
7. Admassu Abate, T., A. F. Desta, F. Assefa, N. G. Love*. 2020 The performance of an Ethiopian tannery wastewater treatment system based on chemical and microbiological water quality. *Water Environment Research*. In press. DOI:10.1002/wer.1364.
8. Segrè Cohen*, A., N. G. Love, J. Arvai. 2020. Communicating the risks and benefits of human urine-derived fertilizer. *Sustainability*. 12(23): 9973. DOI:10.3390/su12239973.
9. Troutman, S. C., N. G. Love and B. Kerkez*. 2020. Balancing water quality and flows in combined sewer systems using real-time control. *Environmental Science: Water Research & Technology*. 6:1357-1369. DOI: 10.1039/c9ew00882a.
10. Schreiber*, T., S. Opperman, K. Nace, A. N. Pallmeyer, N. Love and R. Hardin. 2020. Leveraging integrative research for inclusive innovation: urine diversion and re-use in agriculture. *Elementa Science of the Anthropocene*. 8:12. doi.org/10.1525/elementa.408
11. Cohen, A. S.*, N. G. Love, K. K. Nace and J. Arvai. 2020. Consumers' acceptance of agricultural fertilizers derived from diverted and recycled human urine. *Environmental Science & Technology*. 54(8):5297-5305. DOI:10.1021/acs.est.0c00576.
12. Carlson, A. L., G. T. Daigger*, N. G. Love and E. Hart. 2020. Multi-year diagnosis of unpredictable fouling occurrences in a full-scale membrane bioreactor. *Water Science and Technology*. 82(3):524-536. DOI: 10.2166/wst.2020.354.
13. Bekele, Z. A., J. Delgado Vela, C. B. Bott, N. G. Love*. 2020. Sensor-mediated granular sludge reactor for nitrogen removal and reduced aeration demand using a dilute wastewater. *Water Environment Research*. 92(7):1006-1016. DOI: 10.1002/wer.1296. Honor: Editor selected for issue cover art
14. Goetsch, H. E., N. G. Love, K. R. Wigginton*. 2020. Fate of extracellular DNA in the production of fertilizers from source-separated urine. *Environmental Science & Technology*. 54 (3):1808-1815. DOI:10.1021/acs.est.9b04263.
15. Brown, M., F. Karimova, N. Love, K. Pagilla, C. Bott, Z. He, B. Liner and S. Merther. 2020. University-utility partnerships: Best practices for water innovation and collaboration. *Water Environment Research*. 92(3):314-319. DOI:10.1002/wer.1252.

16. Brouwer, A. F., M. C. Eisenberg, N. G. Love, J. N. S. Eisenberg*. 2019. Phenotypic variations in persistence and infectivity between and within environmentally transmitted pathogen populations impact population-level epidemic dynamics. *BMC Infectious Diseases*, 19(1):449-461. DOI:10.1186/s12879-019-4054-8.
17. Daigger*, G. T., S. Sharvelle, M. Arabi, N. G. Love. 2019. Progress and Promise Transitioning to One Water/Resource Recovery Integrated Urban Water Management Systems. *Journal of Environmental Engineering*. 145 (10), 10 pages. DOI: 10.1061/(ASCE)EE.1943-7870.0001552. Recipient of the ASCE Wesley W. Homer Award.
18. McFarland, A. R., L. Larsen*, K. Yeshitela, A. N. Engida and N. G. Love. 2019. Guide for using green infrastructure in urban environments for stormwater management. *Environmental Science: Water Research & Technology*, 5(4):643-659. DOI:10.1039/C8EW00498F.
19. Liang, S., S. Qu, Q. T. Zhao, X. L. Zhang, G. T. Daigger, J. P. Newell, S. A. Miller, J. X. Johnson, N. G. Love, L. X. Zhang, Z. F. Yang, M. Xu*. 2019. Quantifying the urban food-energy-water nexus: The case of the Detroit Metropolitan Area. *Environmental Science & Technology*, 53(2):779-788. DOI:10.1021/acs.est.8b06240.
20. Stadler, L. B. and N. G. Love*. 2019. Oxygen half-saturation constants for pharmaceuticals in activated sludge and microbial community activity under varied oxygen levels. *Environmental Science & Technology*. 53(4):1918-1927. DOI:10.1021/acs.est.8b06051.
21. Delgado Vela, J., G. J. Dick and N. G. Love*. 2018. Sulfide inhibition of nitrite oxidation in activated sludge depends on microbial community composition. *Water Research*. 138:241-249, DOI:10.1016/j.watres.2018.03.047.
22. Byrne, B. G., S. McColm, S. P. McElmurry, P. E. Kilgore, J. Sobek, R. Sadler, N. G. Love, M. S. Swanson*. 2018. Prevalence of infection-competent serogroup 6 *Legionella pneumophila* within premise plumbing in Southeast Michigan. *mBio*, 9(1): DOI: 10.1128/mBio.00016-18.
23. Zahran, S., S. P. McElmurry, P. E. Kilgore, D. Mushinski, J. Press, N. G. Love, R. C. Sadler, M. S. Swanson*. 2018. Assessment of the Legionnaires' Disease Outbreak in Flint, Michigan. *Proceedings of the National Academy of Sciences USA*, 115(8):E1730-E1739. DOI: 10.1073/pnas.1718679115.
24. Goetsch, H. E., L. B. Zhao, M. Gnegy, M. J. Imperiale, N. G. Love, K. R. Wigginton*. 2018. The fate of urinary tract virus BK human polyomavirus in source-separated urine. *Applied and Environmental Microbiology*, 84(7): DOI:10.1128/AEM.02374-17.
25. Stadler, L. B.[†], J. Delgado Vela[†], S. Jain, G. J. Dick, and N. G. Love*. 2017. Elucidating the impact of microbial community biodiversity on pharmaceutical biotransformation during wastewater treatment. *Microbial Biotechnology*, 11(6):995-1007. DOI: 10.1111/1751-7915.12870. [†]These authors contributed equally to this work.
26. Mullen, R. A., K. R. Wigginton, A. Noe-Hays, K. Nace, N. G. Love, C. B. Bott and D. S. Aga*. 2017. Optimizing extraction and analysis of pharmaceuticals in human urine, struvite, food crops, soil, and lysimeter water by liquid chromatography-tandem mass spectrometry. *Analytical Methods*. 9(41):5952-5962.
27. Troutman, S. C., N. Schambach, N. G. Love and B. Kerkez*. 2017. A self-calibrating framework for the sensor-driven and dynamical modeling of combined sewer systems. *Water Research*, 126:88-100. DOI: 10.1016/j.watres.2017.08.065
28. Wu, C.-C., S. Ghosh, K. J. Martin, A. J. Pinto, V. J. Deneff, T. M. Olson, N. G. Love*. 2017. The microbial colonization of activated carbon block point-of-use (PoU) filters with and without chlorinated phenol disinfection byproducts. *Environmental Science: Water Research & Technology*, 3(5):830-843. DOI: 10.1039/C7EW00134G.
29. Cook, S.M., S. J. Skerlos, L. M. Raskin and N. G. Love*. 2017. A sustainability assessment tool for anaerobic digestion. *Water Research*. 112:19-28.
30. Daigger*, G. T., J. Sandino, S. Murthy, N. G. Love. 2017. Transforming environmental engineering and science education, research and practice. *Environmental Engineering Science*, 34(1):42-50.
31. Lahr, R.H., H. E. Goetsch, S. J. Haiq, A. Noe-Hays, N. G. Love, D. S. Aga, C. B. Bott, B. Foxman, J. Jimenez, T. Luo, K. Nace, K. Ramadugu and K. R. Wigginton*. 2016. Urine bacterial community

- convergence through fertilizer production: storage, pasteurization, and struvite precipitation. *Environmental Science and Technology*, 50(21):11619-11626.
32. Lester, Y., D. Aga, N. G. Love, R. Singh, I. Morrissey and K. Linden*. 2016. Integrative advanced oxidation and biofiltration for treating pharmaceuticals in wastewater. *Water Environment Research*. 88(11):1985-1993. DOI:10.2175/106143016X14504669767454
 33. Stadler, L. B. and N. G. Love*. 2016. Impact of microbial physiology and microbial community structure on pharmaceutical fate driven by dissolved oxygen concentration in nitrifying bioreactors. *Water Research*, 104:189-199. DOI: 10.1016/j.watres.2016.08.001
 34. Keen, O., N. G. Love, D. S. Aga and K. Linden*. 2016. Biodegradability of iopromide products after UV/H₂O₂ advanced oxidation. *Chemosphere*, 144:989-994.
 35. Delgado Vela, J., L. B. Stadler, K. J. Martin, L. Raskin, C. B. Bott and N. G. Love*. 2015. Prospects for biological nitrogen removal from anaerobic effluents during mainstream wastewater treatment. *Environmental Science and Technology Letters*, 2(9):234-244. DOI: 10.1021/acs.estlett.5b00191.
 36. Muller, J. F., S. Ghosh, K. Ikuma, A. M. Stevens and N. G. Love*. 2015. Chlorinated phenol-induced physiological antibiotic resistance in *Pseudomonas aeruginosa*. *FEMS Microbiology Letters*, 362(21):fnv172, DOI: 10.1093/femsle/fnv172.
 37. Jimenez*, J., C. Bott, N. Love, and J. Bratby. 2015. Source separation of urine as an alternative solution to nutrient management in biological nutrient removal treatment plants. *Water Environment Research*. 87(12):2120-2129. DOI:10.2175/106143015X14212658613884.
 38. Singh, R., Y. Lester, K. Linden, N. G. Love, G. Ekin Atilla-Gokcumen, D. S. Aga*. 2015. Application of metabolite profiling tools and time-of flight mass spectrometry in the identification of transformation products of iopromide and iopamidol during advanced oxidation. *Environmental Science and Technology*, 49(5):2983-2990.
 39. Stadler, L. B., L. Su, C. J. Moline, A. S. Ernstoff, D. S. Aga, and N. G. Love*. 2015. Effect of redox conditions on pharmaceutical loss during biological wastewater treatment using sequencing batch reactors. *Journal of Hazardous Materials*, 282:106-115. DOI/10.1016/j.jhazmat.2014.08.002
 40. Smith*, A. L., L. B. Stadler*, L. Cao, N. G. Love, L. Raskin, and S. J. Skerlos*. 2014. Navigating wastewater energy recovery strategies: A life cycle comparison of anaerobic membrane bioreactor and conventional treatment systems with anaerobic digestion. *Environmental Science and Technology*, 48:5972-5981. DOI/10.1021/es5006169. *These authors contributed equally to this work.
 41. Syed, A. K., S. Ghosh, N. G. Love, B. R. Boles*, 2014. Triclosan promotes *Staphylococcus aureus* nasal colonization, *mBio*, 5(2):e01015-13. doi:10.1128/mBio.01015-13.
 42. Orfield, Nolan D., G. A. Keoleian* and N. G. Love. 2014. A GIS-based national assessment of algal bio-oil production potential through flue gas and wastewater co-utilization. *Biomass and Bioenergy*, 63:76-85.
 43. Clouzot, L., J.-M. Choubert, F. Cloutier, R. Goel, N. G. Love, H. Melcer, C. Ort, D. Patureau, B. G. Plósz, M. Pomiès and P. A. Vanrolleghem*. 2013. Perspectives on modeling micropollutants in wastewater treatment plants. *Water Science and Technology*. 68(2):448-461. DOI/10.2166/wst.2013.272.
 44. Guest, J., M.C.M vanLoosdrecht, S. J. Skerlos and N.G. Love*. 2013. A lumped pathway metabolic model of organic carbon accumulation and mobilization by the alga *Chlamydomonas reinhardtii*. *Environmental Science and Technology*, 47:3258-3267. DOI/10.1021/es304980y.
 45. Gilmore*, K.R., A. Terada, B. F. Smets, S. Lackner, J. L. Garland, and N. G. Love. 2013. Autotrophic nitrogen removal in a membrane-aerated biofilm reactor under continuous aeration: A demonstration. *Environmental Engineering and Science*, 30(1):38-45. DOI: 10.1089/ees.2012.0222.
 46. Smith, A. L., L. B. Stadler, N. G. Love, S. Skerlos, and L. Raskin*. 2012. Perspectives on anaerobic membrane bioreactor treatment of domestic wastewater: A critical review. *Bioresource Technology*, 122 (Special Issue, SI):149-159. DOI: 10.1016/j.biortech.2012.04.055
 47. Pinto, A.J. and N. G. Love*. 2012. Bioreactor function under perturbation scenarios is affected by interactions between bacteria and protozoa. *Environmental Science and Technology*, 46(14):7558-7566. DOI: 10.1021/es301220f

48. Keen, O., N. G. Love, and K. G. Linden*. 2012. The role of effluent nitrate in contaminant oxidation during UV disinfection. *Water Research*, **46**(16):5224-5234. DOI:10.1016/j.watres.2012.06.052
49. Keen, O. S., S. Baik, K. G. Linden*, D. S. Aga and N. G. Love. 2012. Enhanced biodegradation of carbamazepine after UV/H₂O₂ advanced oxidation. *Environmental Science and Technology*, **46**:6222-6227. DOI: 10.1021/es300897u.
50. Cook, S. M., B. J. VanDuinen, N. G. Love and S. J. Skerlos*. 2012. Life cycle comparison of environmental emissions from three disposal options for unused pharmaceuticals. *Environmental Science and Technology*, **46** (10):5535-5541. DOI: 10.1021/es203987b
51. R. Mesfioui, N. G. Love, D. A. Bronk, M. R. Mulholland, P. G. Hatcher*. 2012. Reactivity and chemical characterization of effluent organic nitrogen from wastewater treatment plants determined by Fourier transform ion cyclotron resonance mass spectrometry. *Water Research*, **46**(3):622-634. DOI:10.1016/j.watres.2011.11.022
52. Lamp, J. L., J. S. Guest, S. Naha, K. A. Radavich, N. G. Love*, M. W. Ellis* and I. K. Puri. 2011. Flame synthesis of carbon nanostructures on stainless steel anodes for use in microbial fuel cells. *Journal of Power Sources*, **196**(14):5829-5834. † These authors contributed equally to this work.
53. Khunjar, W. O., S. A. Mackintosh, J. Skotnicka-Pitak, S. Baik, D. S. Aga, N. G. Love*. 2011. Elucidating the relative roles of ammonia oxidizing and heterotrophic bacteria during the biotransformation of 17 α -ethinylestradiol and trimethoprim. *Environmental Science and Technology*, **45**(8):3605-3612. DOI:10.1021/es1037035.
54. Ghosh, S., C. M. Cremers, U. Jakob, and N. G. Love*. 2011. Chlorinated phenols control the expression of the multi-drug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa* by activating NaIC. *Molecular Microbiology*, **79**(6):1547-1556. DOI:10.1111/j.1365-2958.2011.07544.x.
55. Filippino*, K. C., M. R. Mulholland, P. W. Bernhardt, G. E. Boneillo, R. E. Morse, M. Semcheski, H. Marshall, N. G. Love, Q. Roberts and D. A. Bronk. 2011. Bioavailability of effluent-derived organic nitrogen along an estuarine salinity gradient. *Estuaries and Coasts*. **34**:269-280.
56. Zhao, Z., K. F. Knowlton*, N. G. Love, and J. A. Ogejo. 2011. Estrogen removal from dairy manure by pilot-scale treatment reactors. *Transactions of the American Society of Agricultural and Biological Engineers (ASABE)*. **53**(4):1295-1301.
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58. Ghosh, S. and N. G. Love*. 2011. Molecular diversity of algae assemblages at wastewater treatment plants. *Bioresour. Technology*, **102**: 3619-3622.
59. *Guest, J. S., S. J. Skerlos, G. T. Daigger, J. R. E. Corbett, N. G. Love. 2010. The use of qualitative system dynamics to identify sustainability characteristics of decentralised wastewater management alternatives. *Water Science and Technology*, **61**(6):1637-1644.
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Reviews, Discussions, Editorials and General Technical News Pieces

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Refereed Conference Presentations (presenter in bold)

145. Hicks, B., C. C. Wu, M. B. Perri, Z. Zhao, M. Zervos, S. P. McElmurry, N. G. Love. Isolating and characterizing *Stenotrophomonas maltophilia* from drinking water point-of-use filters in an aged distribution system. Poster presentation. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 17-20, 2019.
146. Love, N. G. The International Water Association Specialists Group on Environmental Engineering Education: History and Background. Podium Presentation for pre-conference workshop. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 17-20, 2019
147. Love, N.G., A. Noe-Hays, D. Aga, J. Arvai, A. Cohen, G. Dalgger, A. Davis, R. Dickman, R. Hardin, S. Hilton, G. Keoleian, L. Li, N. Lowe, R. Mullen, K. Nace, E. Rodriguez, T. Schreiber, S. Skerlos, W. Tarpeh, K. Wigginton. Achieving Nutrient Resource Efficiency through Urine Separation, Processing and Reuse: A Comprehensive Study. Podium Presentation. 3rd IWA Resource Recovery Conference, Venice, Italy, September 2019.
148. Carma Lewis*, Elizabeth Burtch*, Nick J. Lowe, Audrey Rose Zarb, Alyssa Schubert, Janée Rankin*, Lydia Starrs*, Rochelle Kelly*, Richard Kelley*, Alyssa Schubert, Enrique Rodriguez, Lucinda Li, Audrey Palmeyer, Shawn P. McElmurry, Nancy G. Love (*community collaborators from Flint, Ms. Lewis and Ms. Schubert gave the talk). Community-driven Train-the-Trainers program for point-of-use

- filter maintenance in communities affected by drinking water lead contamination. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
149. **Tarpeh, W., Y. Du, C. Carpenter, D. Helbling, N. G. Love, K. R. Wigginton.** Suspect screening of pharmaceuticals during urine treatment processes. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 150. **Goetsch, H., L. Li, N. G. Love and K. R. Wigginton.** Understanding microbial agents in source-separated urine for the production of urine-derived fertilizers. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 151. **A. Noe-Hays, A. Davis, N. J. Lowe, J. Eraci, Y. J. Ooi, A. Sabido, K. Nace, E. Rodriguez, K. Wigginton, N. Love.** Onsite production of concentrated urine-derived fertilizer in building-scale systems using remote process monitoring and control. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 152. **Kerkez, B., N. G. Love, R. L. McCaffery, M. Bartos, J. Montgomery, E. TerBeek.** A First Year College Course on Smart Water Systems. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 153. **Cohen, A. S., N. G. Love, J. Árvai.** Consumers' preferences and perceptions regarding the use of urine-derived fertilizer for domestic agriculture. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 154. **Pallmeyer, A. and N. G. Love.** Achieving Resource Efficiency with Resource Recovery: Introduction the NSF INFEWS Project on Urine-Derived Fertilizers. Podium Presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.
 155. **Bekele, Z., J. Delgado Vela, C. B. Bott, N. G. Love.** Sensor-mediated Control for Aerobic Granular Sludge Process Treating Mainstream Anaerobic Effluent. Podium presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.
 156. **Troutman, S.C., N. G. Love and B. Kerkez.** Evaluating market-based algorithms for system-level TSS control. 13th International Conference on Hydroinformatics. Palermo, Italy, July 1-6, 2018.
 157. **Troutman, S. C., N. G. Love and B. Kerkez.** Market-based real-time control of TSS across large sewer systems. World Environmental & Water Resources Congress, EWRI. Minneapolis, MN, USA. June 3-7, 2018.
 158. **Tarpeh, W., D. S. Aga, N. G. Love, K. Wigginton.** Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers. Podium presentation. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
 159. **Troutman, S.C., N. G. Love and B. Kerkez.** Evaluating market-based algorithms for system-level TSS control. Podium presentation. 13th International Conference on Hydroinformatics. Palermo, Italy, July 1-6, 2018.
 160. **Wagner, B., G. T. Daigger, N. G. Love.** Partial nitrification/anammox membrane aerated biofilm reactor for nitrogen removal from aerobic secondary effluent. Podium presentation. Water Environment Federation Nutrient Removal and Recovery Conference, Raleigh North Carolina, June 18-21, 2018. Presentation with associated conference paper.
 161. **Love, N. G., A. Noe-Hays, K. R. Wigginton, L. Macpherson, D. S. Aga, C. B. Bott, G. T. Daigger, A. P. Davis, J. Eisenberg, A. Gagnon, Z. Getaneh, H. Goetsch, P. Gooding, R. Hardin, S. Hilton, J. Jimenez, G. Keoleian, N. J. Lowe, W. Mui, R. Mullen, K. Nace, A. Pallmeyer, N. Patel, D. Raye-Leonard, E. E. Rodriguez, T. Schreiber, A. Sinanaj, W. Tarpeh, R. Wombacher, B. Zhou.** Advancing Nutrient Recovery through Urine-Derived Fertilizers (UDF) in the United States. Podium presentation. Water

- Environment Federation Nutrient Removal and Recovery Conference, Raleigh North Carolina, June 18-21, 2018. Presentation with associated conference paper.
162. **Troutman, S. C., N. G. Love and B. Kerkez.** Market-based real-time control of TSS across large sewer systems. Podium presentation. World Environmental & Water Resources Congress, EWRI. Minneapolis, MN, USA. June 3-7, 2018.
 163. **Rodriguez, E., W. Tarpeh, H. Clack, N. G. Love, K. Wigginton.** 2018. Degradation of pharmaceuticals in synthetic urine treated with plasma. Poster Presentation. American Chemical Society Meeting, New Orleans, LA, March 18-22, 2018.
 164. **Zerihun A. Bekele, Imre Takacs, Charles B. Bott, and Nancy G. Love.** Harnessing biofilm models to advance nitrogen removal from mainstream anaerobic wastewater treatment processes. Poster presentation. WRRMod2018 conference, Quebec, Canada, March 2018.
 165. **Tarpeh, W., D. S. Aga, N. G. Love, K. Wigginton.** Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers. Podium presentation. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
 166. **Carlson, A., N. G. Love, G. T. Daigger and E. Hart.** Trouble-shooting long-term biofouling in full-scale membrane bioreactor. International Water Association Young Water Professionals Conference, South Africa. December 10-14, 2017.
 167. **Goetsch, H.E., Love, N.G., Imperiale, M.J., Wigginton, K.** Fate of Human BK polyomavirus through urine diverted for fertilizer. 2nd International Resource Recovery Conference: New York City, NY, USA August 5-9, 2017.
 168. **Delgado Vela, J., Dick, Gregory J., Love, N.G.** The Impact of Sulfide on Nitrification: Implications for Nitrification Processes. Fifth International Conference on Nitrification and Related Processes (ICoN5): Early Career and Graduate Student Workshop. Vienna, Austria, July 23-27, 2017.
 169. **Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Using sensor-mediated control and modeling to develop an aerobic granular sludge technology for low energy nitrogen. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017.
 170. **Troutman, S. C., N. G. Love, B. Kerkez.** 2017. Controlling a Sewer Network as an Extension of the Wastewater Treatment Plant. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 171. **Chia-Chen Wu, Katie Stroh, Shawn P. McElmurry, Terese M. Olson, and Nancy G. Love.** Understanding the transmission of planktonic and sessile bacteria across point-of-use (PoU) filters. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 172. **Delgado Vela, J., Dick, Gregory J., Love, N.G.** Managing Healthy Activated Sludge Communities: Understanding the Impact of Sulfide on Nitrogen Removal. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 173. **Bekele, Z. A., Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Aerobic granular sludge process optimization and modeling for mainstream anaerobically treated wastewater. Poster presented at IWA Biofilm Reactors Conference, Dublin. Ireland, May 2017
 174. **Troutman, S. C., N. G. Love, B. Kerkez.** 2017. Understanding Combined Sewer Flow Dynamics through Data-Driven Modeling. World Environmental & Water Resources Congress, EWRI. Sacramento, CA, USA. May 21-25 2017.
 175. **Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Aerobic granular sludge process optimization and modeling for mainstream anaerobically treated wastewater. Poster presented at IWA Biofilm Reactors Conference, Dublin. Ireland, May 2017
 176. **Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton.** 2017. Fate of human polyomavirus in urine diverted for fertilizer use. American Chemical Society 253rd National Meeting, San Francisco, CA, April 2017.

177. **Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton.** Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Oral presentation. Borchardt conference, Ann Arbor, Michigan, February 2017.
178. **Troutman, S., N. G. Love, B. Kerkez.** Use of Real-Time Sensor Data in City-Scale Water Modeling. Poster presentation presented at two different conferences: Borchardt conference, Ann Arbor, Michigan, February 2017; and CUAHSI Biennial Symposium
179. **Zhao, Z., M. P. Runho, C.-C. Wu, A. Zarb, T. M. Olson, S. P. McElmurry, and Nancy G. Love.** 2017 Effect of flushing on microbiological quality of water effluent from point-of-use filters. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.
180. **Alenayehu, Z., C. B. Bott and N. G. Love.** 2017. Achieving nitrogen removal from mainstream anaerobically treated wastewater using aerobic granular sludge with low aeration rate. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.
181. **Delgado Vela, J., Z. A. Bekele, A. McFarland, A. Arcelay, K. J. Martin, C. B. Bott, G. J. Dick and N. G. Love.** 2016. The membrane aerated biofilm reactor for nitrogen removal from mainstream anaerobic processes. 89th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, Sept 25-28, 2016.
182. **Desta, A. F., N. G. Love, K. R. Wigginton, H. Goetsch and R. Lahr.** 2016. Keynote lecture: Metagenomic analysis of biological contaminants in source-separated urine undergoing sanitization.: A way towards sustainable development in low-income countries. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
183. **Stadler, L. and N. G. Love.** 2016. Associations between microbial community activity, pharmaceutical biotransformation rates, and DO concentration in wastewater treatment. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
184. **Goetsch, H., M. Imperiale, N. G. Love and K. R. Wigginton.** 2016. Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
185. **Wu, C.-C., T. M. Olson and N. G. Love.** 2016. Prevalence of Antibiotic Resistance Genes (ARGs) in Point-of-Use (PoU) Drinking Water Filters. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
186. **Troutman, S., N. G. Love, B. Kerkez.** 2016. Predicting combined sewer flow through use of real-time, city-scale sensor data. Oral presentation, World Environmental and Water Resources Congress, ASCE, West Palm Beach, Florida, May 2016.
187. **Goetsch, H., R. Mullen, R. Lahr, A. Noe-Hays, D. Aga, C. Bott, B. Foxman, J. Jimenez, N. Love, T. Luo, K. Nace, K. Ramadugu, K. Wigginton.** 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine derived fertilizers. International Water Association First Resource Recovery Conference. Ghent, Belgium, Aug 30-Sept 2, 2015.
188. **Delgado Vela, J., Martin, K. J., McFarland, A., Beaton, N., Stadler, L.B., Skerlos, S.J., Raskin, L., Bott, C. B., Love, N.G.** Removing nitrogen from effluents of anaerobic wastewater treatment processes: Understanding control and operation through biofilm modeling. 250th American Chemical Society National Meeting and Exhibition. Boston, MA, August 16-20, 2015. (podium).
189. **Delgado Vela, J., K. J. Martin, A. R. McFarland, N. L. Beaton, L. B. Stadler, C. B. Bott, L. Raskin, S. J. Skerlos, N. G. Love, A. Salvesson, T. Rauch-Williams.** 2015. Advancing energy neutral wastewater treatment: removing nitrogen and dissolved methane from dilute anaerobic effluents. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
190. **Stadler, L. B., J. Delgado Vela and N. G. Love.** 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. AEESP Biannual Conference, Yale University, June 14-16 (podium presentation), *winner of best student paper award*.
191. **Goetsch, H., R., Lahr, R. Mullen, A. Noe-Hays, D. Aga, C. B. Bott, J. Jimenez, N. G. Love, K. Nace and K. Wigginton.** 2015. Fate of organic contaminants in urine-derived fertilizers. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).

192. **Lahr, R., H., Goetsch, A. Noe-Hays, D. Aga, C. B. Bott, B. Foxman, J. Jimenez, N. G. Love, T. Luo, R. Mullen, K. Nace, K. Ramadugu and K. Wigginton.** 2015. Microbial communities in urine separated for nutrient recovery. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
193. **Stadler, L. B., J. Delgado Vela and N. G. Love.** 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. American Society for Microbiology, New Orleans, LA, May 30-June 2 (Poster Presentation).
194. **Goetsch, H., R. Lahr, A. Desta, N. G. Love, C. Bott, A. Gagnon, K. Nace, A. Noe-Hays, D. S. Aga, R. Mullen, J. Jimenez, K. Wigginton,** 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine-derived fertilizers. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
195. **Stadler, L., J. Delgado Vela and N. G. Love.** 2015. Impact of low dissolved oxygen and microbial community on pharmaceutical biotransformations during wastewater treatment. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
196. **Delgado-Vela, J., K. J. Martin, N. Beaton, A. McFarland, L. B. Stadler, C. B. Bott, S. J. Skerlos, L. Raskin, N. G. Love.** 2015. Nutrient removal from mainstream anaerobic processes using a membrane aerated biofilm reactor and a granular sludge sequencing batch reactor. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
197. **Delgado Vela J., Martin, K. J., Beaton, N., McFarland, A., Stadler, L., Bott, C. B., Raskin, L., Skerlos, S.J., and Love, N.G.** 2014. Nitrogen Removal Downstream of an Anaerobic Membrane Bioreactor for Domestic Wastewater Treatment. IWA Global Challenges: Sustainable Wastewater Treatment and Resource Recovery. Kathmandu, Nepal, October 26-30.
198. **Delgado Vela, J., Martin, K.J., Stadler, L.B., Bott, C. Skerlos, S.J., Raskin, L., Love, N.G.,** 2014. Nutrient Removal from Mainstream Anaerobic Effluents: Linking Biofilm Modeling to Experimental Design. 87th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 28-October 1. (poster presentation)
199. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22, 2014.
200. **Love, N. G.** 2014. Achieving resilience and sustainability in the global urban water sector – a role for environmental chemistry. Special Seminar Series: Women in Environmental Chemistry and Engineering, Abstract 312-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10-14. (podium presentation)
201. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. Abstract 415-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
202. **Wu, C.-C., K. J. Martin, A. Perez De La Rosa, G. Ryskamp, N. G. Love and T. M. Olson.** 2014. Effect of disinfection by-products on antibiotic resistance in the bacterial communities of point-of-use (PoU) drinking water filters. Abstract 473-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
203. **Lester, Y., N. G. Love, D. S. Aga, R. Singh and K. G. Linden.** 2014. Demonstrating advanced oxidation/biofiltration to remove emerging contaminants from wastewater: A pilot study. Abstract 130-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
204. **Aga, D. S., K. G. Linden, N. G. Love, R. Singh, Y. Lester, O. S. Keen and S. Baik.** 2014. Identification of degradation products of carbamazepine and iopromide after UV/H₂O₂ advanced oxidation and

- biodegradation. 283-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
205. **Stadler, L. B., Smith, A. L., Jain, A. K., Martin, K. J., Delgado Vela, J., Puente, P., Cao, L., Frenette, S., Bott, C. B., Rauch-Williams, T., Shimada, T., Salveson, A., Love, N. G., Raskin, L., and Skerlos, S. J.** 2014. Integrating Life Cycle Assessment and Experimental Research: Evaluating Anaerobic Membrane Bioreactors in Domestic Wastewater Treatment for Energy Recovery. Borchardt Conference. Ann Arbor, MI, February 25 – 26, 2014. (podium presentation)
 206. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22. (podium presentation)
 207. **Stadler, L. B., Smith, A. L., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J.** 2013. Life Cycle Comparison of Emerging and Established Wastewater Energy Recovery Systems. In Mainstream Anaerobic Treatment Systems for Energy Neutral Wastewater Management Workshop at the 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.
 208. **Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos,** 2013. Energy Recovery from Wastewater: Life Cycle Comparison of Carbon Removal Technologies Upstream of Autotrophic Nitrogen Removal. *WEF/IWA Nutrient Removal and Recovery 2013: Trends in Resource Recovery and Use*, July 28-31, Vancouver, British Columbia, Canada.
 209. **Smith, A.L., T. Shimada, and L. Raskin,** 2013. Syntrophic interactions in full-scale two-phase anaerobic digesters determined by pyrosequencing. *5th International Conference on Microbial Ecology and Water Engineering Conference*, July 7-10, Ann Arbor, Michigan.
 210. **Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos,** 2013. Life cycle comparison of emerging and established wastewater energy recovery systems. Poster presentation. *2013 AEESP Education & Research Conference*, July 14-16, Denver, Colorado.
 211. **Delgado-Vela, J., Stadler, L.B., and Love, N. G.** 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors 50th Anniversary Conference. Golden, CO, July 14 – 16.
 212. **Moline, C. J., Stadler, L. B., Su, L., Ernstoff, A. S., Dapcic, A. D., Vela, J. D., Aga, D., and Love, N. G.** 2012. Pharmaceutical Fate Under Varying Redox Treatment Environments. Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29 - October 3.
 213. **Smith, A. L., Stadler, L. B., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J.** 2012. Performance and environmental impacts of anaerobic membrane bioreactor for low-strength wastewater treatment, Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29-October 3.
 214. **Jimenez, J., C. B. Bott, N. G. Love and J. Bratby.** 2012. Source separation of urine as an alternative solution to nutrient management in wastewater treatment plants: a model-based analysis. Water Environment Federation Technical Exhibition and Conference. New Orleans, LA. Sept 30-Oct 3, 2012. Podium presentation.
 215. **Love, N.G.** 2012. Challenges in predicting micropollutant fate in biological processes. WWTMod2012 workshop on modelling micropollutant fate in biological processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012. Podium presentation
 216. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** Impact of Copper Stress on Nitrification Performance and the Ammonia Oxidizer Community Structure in Activated Sludge. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.

217. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** 2011. Psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.
218. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin,** 2012. Effects of changes in temperature and hydraulic retention time on performance and environmental impacts of anaerobic membrane bioreactors for domestic wastewater treatment. *Leading-Edge Conference on Water and Wastewater Technologies*, June 3-7, Brisbane, Australia.
219. **Smith, A.L., Z. Li, H. Dorer, N.G. Love, S. Skerlos, and L. Raskin,** 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. *2011 Borchardt Conference*, February 23-24, Ann Arbor, Michigan.
220. **Guest, J. S., N. G. Love, S. Snowling, C. B. Bott, G. T. Daigger and S. J. Skerlos.** Quantitative sustainable design of wastewater treatment plants. *Water Environment Federation Technical Exhibition and Conference*. Los Angeles, CA. October 15-19, 2011. Podium presentation.
221. **Keen, O., S. Baik, K. Linden, D. Aga and N. G. Love.** 2011. Degradation of carbamazepine during UV/H₂O₂ treatment of wastewater. *Water Environment Federation Technical Exhibition and Conference*. Los Angeles, CA. October 15-19, 2011. Podium presentation.
222. **Smith, A., N. G. Love, S. J. Skerlos, and L. Raskin.** Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *Water Environment Federation Technical Exhibition and Conference*. Los Angeles, CA. October 15-19, 2011. Podium presentation.
223. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** Impact of Copper Stress on Ammonia Oxidizer Activity and Community Structure in Nitrifying Activated Sludge. *Water Environment Federation Technical Exhibition and Conference*. Los Angeles, CA. October 15-19, 2011. Podium presentation.
224. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin,** 2011. Analysis of microbial communities in an anaerobic membrane bioreactor for domestic wastewater treatment at psychrophilic conditions. *2011 Biogas Microbiology Conference*, September 14-16, Leipzig, Germany.
225. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** 2011. Effect of Copper Stress on Ammonia Oxidizer Community Structure and Nitrification Performance in a Nitrifying Activated Sludge Wastewater Treatment Process. *2nd International Conference on Nitrification*. Nijmegen, the Netherlands. July 1-7.
226. **Guest, J.S., S.J. Skerlos, N.G. Love.** 2011. Quantitative sustainable design of wastewater treatment plants. *Engineering Sustainability 2011*, Pittsburgh, PA, March 10-12, 2011, Podium presentation.
227. **Cook, S. M., B.J. VanDuinen, S.J. Skerlos, N.G. Love.** Life cycle comparison of environmental impacts from alternative pharmaceutical disposal methods. *Engineering Sustainability 2011 Conference*, Pittsburgh, PA, April 11, 2011
228. **Smith, A.L., N.G. Love, S.J. Skerlos, and L. Raskin.** 2010. Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *Proceedings of the 12th World Congress on Anaerobic Digestion*, Guadalajara, Mexico, November 1-4, 2010
229. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** 2011. Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *Proceedings of the 84th Annual Water Environment Federation Technical Exhibition and Conference*, Los Angeles, California, October 15-19, 2011.
230. **Pinto, A.J. and N.G. Love.** Impact of chemical perturbation on trophic interactions and its implications for ecosystem function in an engineered environment. *13th International Symposium on Microbial Ecology 2010*, Seattle, Washington. August 22-27, 2010
231. **Love, N.G., W. O. Khunjar, S. Mackintosh, S. Baik, and D. Aga.** The Relative Roles of Ammonia Oxidizing and Heterotrophic Activated Sludge Bacteria in Biotransforming 17 α -Ethinylestradiol and Trimethoprim. Podium presentation, *AEESP Special Session. 83rd Water Environment Federation Technical Exposition and Conference 2010*, New Orleans, LA, October 3-6, 2010.

232. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin, 2010.** Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *12th World Congress on Anaerobic Digestion*, October 31 - November 4, Guadalajara, Mexico. International Water Association.
233. **N. G. Love, W. O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, D. S. Aga, T. Yi, and W. F. Harper Jr. 2010.** Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria during the biotransformation of 17 α -ethinylestradiol and trimethoprim. Podium presentation. International Water Association World Water Congress and Exposition, Montreal, Quebec, Canada, Sept 20-24, 2010.
234. **W.O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, N. G. Love, D.S. Aga, W.F. Harper Jr. 2010.** Elucidating factors that influence the biotransformation of 17 α -ethinylestradiol and trimethoprim. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.
235. **Guest, J. S., S. J. Skerlos and N. G. Love. 2010.** An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.
236. **Pinto, A.J., Hardin, S.C., Love, N.G., Fairey, A., Earle, J., Washington, P., Iler, P., Doane-Weideman, T., and Lagrange, R.** Remedial Intervention Strategies for Wastewater Treatment Plant Exposed to Heavy Metal Stress: Laboratory and Pilot Scale Evaluations. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.
237. **Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Baik, S., Love, N.G., Aga, D.S., Harper Jr., W.F.** The Impact of Physiological State and Residual Organic Carbon on the Biotransformation of 17 α -Ethinylestradiol and Trimethoprim by Heterotrophic Bacteria. Podium Presentation. *82nd Annual Water Environment Federation Technical Exposition and Conference*, Orlando, Florida, October 10-14, 2009.
238. **Guest, J. S.; Cook, S. M.; Skerlos, S. J.; Love, N. G. 2009.** A methodology to assess the environmental impacts of upgrading wastewater infrastructure: A case study to evaluate energy recovery from black water. Podium presentation. *Proceedings of the 82nd Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC)*, Orlando, Florida, October 10-14, 2009.
239. **Thomas, W.A., Bott, C.B., Regmi, P., Schafran, G., Pinto, A., Love, N.G., McQuarrie, J., Rutherford, B., Baulmer, R., Waltrip, D.** Evaluation of Nitrification Kinetics for a 2.0 MGD IFAS demonstration project. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.
240. **Cook, S. M., J. S. Guest, S. J. Skerlos, N. G. Love. 2009.** Environmental characteristics of different energy recovery systems from the management of sewage sludge and food waste. Podium presentation, *IWA Sustainable Management & Technologies of Sludges Conference*, Harbin, China, August 8-11, 2009.
241. **Pinto, A.J., N. G. Love, A. Fairey, J. Earle, P. Washington, P. Iler, T. Doane-Weideman, and R. Lagrange. 2009.** Integration of online sensors with corrective action strategies to detect, monitor, and mitigate toxic shock events at nutrient removal wastewater treatment plants. *Water Environment Federation: Nutrient Removal Conference*. Washington, DC. June 28-July 1, 2009.
242. **Pinto, A.J. and N. G. Love.** Post-stress recovery of a complex ammonia oxidizing bacterial community following heavy metal cadmium stress. Short podium presentation and poster presentation. *International Conference on Nitrification 1*. Louisville, KY, July 5-9, 2009.
243. **Guest, J. S.; Skerlos, S. J.; Daigger, G. T.; Corbett, J. R. E.; Love, N. G. 2009.** The use of qualitative system dynamics to identify sustainability characteristics of decentralised wastewater management alternatives. *Proceedings of 6th IWA Leading Edge Conference on Water and Wastewater Technologies*, Singapore, June 22-25, 2009. *Invited for consideration in Water Science and Technology*.
244. **Pinto, A.J., S. C. Hardin, and N. G. Love. 2009.** Cadmium-induced short-term structural and functional changes in ammonia oxidizing community in conventional laboratory and pilot scale activated sludge

- systems. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009.
245. Gilmore, K. R., B. F. Smets, A. Terada, S. Lackner, J. L. Garland, N. G. Love. 2009. Microbial community analysis in an autotrophic hollow-fiber membrane-aerated biofilm reactor (HFMBR) treating a high-strength nitrogen wastewater. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009, pp 146-148.
 246. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17 α -ethinylestradiol. Poster presentation. *Proceedings of the Activated Sludge Population Dynamics 5 (ASPD5): Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009.
 247. Loh, K. J., J. S. Guest, G. Ho, J. P. Lynch, and N. G. Love. 2009. Layer-by-layer carbon nanotube bio-templates for in situ monitoring of the metabolic activity of nitrifying bacteria. *SPIE Smart Structures and Materials*, San Diego, CA.
 248. Ghosh, S. and N. G. Love. MexAB-OprM efflux pump mediated changes in antibiotic susceptibilities of *Pseudomonas aeruginosa*. ASM General Meeting, Philadelphia. May 19, 2009.
 249. Love, N. G., D. Bronk, E. Canuel, M. Poteat, Q. Roberts, K. C. Filippino, P. Hatcher, R. Mesfioui, M. M. Mulholland, and G. Ho. The importance of effluent organic nitrogen fate and its contribution to N management in N-limited regions. Podium presentation. *Association of Environmental Engineering and Science Professors Conference*, July 26-29, 2009, Iowa City, IA.
 250. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria in the biotransformation of 17 α -ethinylestradiol. Poster Presentation. *Association of Environmental Engineering and Science Professors Conference*, July 26-29, 2009, Iowa City, IA.
 251. Pinto, A.J., J. S. Guest, R. Roots, N. G. Love, and S. Skerlos. 2009. A project-based active learning framework to introduce freshman engineering students to sustainable waste management and waste-to-energy technologies. Podium presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.
 252. Pinto, A.J. and N. G. Love. 2009. Structural and Functional Response of the Ammonia Oxidizing Bacterial Community to Acute Cadmium Stress in Laboratory and Pilot Scale Activated Sludge Systems. Poster presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.
 253. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17 α -ethinylestradiol. Poster presentation. *Micropol and Ecohazard 2009, 6th IWA/GRA Specialized Conference on Assessment and Control of Micropollutants/Hazardous Substances in Water* June 2009, San Francisco, CA.
 254. Cook, S. M., J. S. Guest, M. G. Christianson, N. G. Love, S. J. Skerlos. 2009. Energy Recovery from Wastewater: Evaluation of Resource Management Alternatives for Appropriate and Environmentally Sustainable Energy Production. Podium presentation, *Engineering Sustainability 2009 Conference*, Pittsburgh, PA, April 21, 2009.
 255. H.A. Tucker, K.F. Knowlton, and N.G. Love. 2009. Fecal and urinary estrogens in dairy heifers during the estrous cycle. *J. Dairy Sci.* 92 (Suppl. 1).
 256. Hardin, S., A. Pinto, N. G. Love, and A. Shaw. 2008. Impact of Contaminant-Specific Corrective Action Strategies on Wastewater Treatment Plant Performance and Recovery. Poster presentation. *Water*

Environment Federation 81st Annual Conference and Exposition, Chicago, IL, October 19-22, 2008. 1st Place - Best Poster Award.

257. **Khunjar, W. O., Skotnicka-Pitak, J., Yi, T., Love, N.G., Aga, D.S., Harper Jr., W.F.** 2008. Biotransformation of pharmaceutical, personal care products during nitrification – the role of nitrifiers vs. heterotrophs. Podium presentation. *ASCE World Environmental & Water Resources Congress 2008*. Honolulu, HI.
258. **Aga, D., N. G. Love, W. Harper, W. O. Khunjar, J. Skotnicka-Pitak, T. Yi.** 2008. Biotransformation of pharmaceuticals by nitrifying and heterotrophic cultures: Investigation of degradation kinetics and metabolite identification. Keynote Address - International Water Association Leading Edge Technology Conference, Zurich, Switzerland, June 1-4, 2008.
259. **Shaw, A., deBarbadillo, C., Pinto, A. J., Guest, J. S., Love, N. G., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., and Barker D.** 2008. Dynamic whole plant modeling to investigate mitigation strategies for toxic shocks. 1st *IWA/WEF Wastewater Treatment Modeling Seminar*. Mont-Sainte-Anne, Quebec, Canada. June-1-3, 2008.
260. **Love, N. G. and Skerlos, S. J.** 2008. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. *Graham Environmental Sustainability Institute Water, Health + Environment Workshop*, University of Michigan, March 26-27, 2008.
261. **Musabyimana, M., N. G. Love, C. B. Bott and S. Murthy.** 2008. Evaluation of nitrite inhibition and toxicity in the deammonification process. Podium presentation alternate. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
262. **O'Shaughnessy, M., M. Musabyimana, J. Sizemore, S. Murthy, B. Wett, I. Takacs, D. Houweling, P. Sanjines, N. Love, K. Pallansch,** 2008. Operations and process control of the deammonification process as a sidestream option for nutrient removal. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
263. **Khunjar, W. O., J. Skotnicka-Pitak, N. G. Love, D. Aga, W. F. Harper Jr.** 2008. Elucidating the role of nitrifiers versus heterotrophic bacteria in the biotransformation of 17 α -ethinylestradiol during wastewater treatment. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
264. **Gilmore, K. R., N. G. Love, B. F. Smets, A. Terada, J. Garland.** 2008. Nitrifier and anammox population dynamics in an autotrophic nitrogen removal membrane biofilm reactor. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
265. **Pinto, A., S. Hardin and N. G. Love.** 2008. Structural and functional responses of the ammonia oxidizing community in activated sludge exposed to cadmium stress. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
266. **Gilmore, K. R., B. F. Smets, J. L. Garland, A. Terada, and N. G. Love.** 2008. Controlling gaseous nitrogen oxide emissions and nitrogen removal performance in hollow fiber membrane aerated biofilm reactors. *Proceedings of the WEF Membrane Technology 2008 Conference*, Atlanta, Georgia, January 27-30, 2008.
267. **DeBusk, J. A., J. Arogo Ogejo, N. G. Love, K. F. Knowlton.** 2007. Adjusting nitrogen to phosphorus ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Podium presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, Paper No. 074048, June 17-20, 2007.
268. **Guest, J. S., A. J. Pinto, N. G. Love and A. Shaw.** 2007. Corrective action strategies for enhanced biological phosphorus removal WWTPs during short-term and prolonged toxic shock events. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

269. **Khunjar, W. O., C. Klein, T. Yi, N. G. Love, D. Aga, and W. F. Harper Jr.** 2007. Cometabolism of pharmaceutical, personal care products (PPCPs) by the ammonia oxidizing bacterium *Nitrosomonas europaea*. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
270. **Ikuma, K., I. D. S. Henriques, B. J. Love and N. G. Love.** 2007. Immobilization of *Pseudomonas aeruginosa* in alginate microbeads for use in a biosensor designed to detect oxidative toxins. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
271. **Gilmore, K. R., N. G. Love and B. F. Smets.** 2007. Oxygen mass transfer in a flow-through hollow fiber membrane aeration reactor. Poster presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
272. **Beck, J. L., K. R. Gilmore, N. G. Love, K. F. Knowlton and J. Arogo Ogejo.** 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
273. **Pinto, A.J., Guest, J.S., Love, N.G., and Shaw, A.** 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition (WEFTEC)*, San Diego, CA, October 14-17, 2007.
274. **Khunjar, W. O., Klein, C., Skotnicka-Pitak, J., Yi, T., Love, N. G., Aga, D. Harper, W. F. Jr.** 2007. Biotransformation of pharmaceuticals and personal care products (PPCPs) during nitrification: the role of ammonia oxidizing bacteria versus heterotrophic bacteria. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.
275. **Fang, Y., Zhao, Z., Love, N. G., Knowlton, K. F., Novak, J. T.** 2007. Detecting endocrine disrupting compounds in various waste matrices using a bioassay. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.
276. **Ikuma, K. Fraga Muller, J., Stevens, A. M., Hagedorn III, C., Love, N. G.** 2007. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.
277. **Khunjar, W. O., Klein, C., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., Harper Jr., W. F.** 2007. The relative roles of ammonia oxidizing bacteria versus heterotrophic bacteria in biotransforming 17 α -ethinylestradiol under low growth rate conditions. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.
278. **Zhao, Z., K. F. Knowlton, N. G. Love and Y. Fang.** 2007. Advanced treatment to reduce the estrogen content of dairy manure. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007. Podium presentation.
279. **Zhao, Z., Knowlton, K.F., Love, N. G., and Fang, Y.** 2007. Dairy manure estrogens with advanced treatments. *Journal of Dairy Science*, 90:332, Supplement 1.
280. **Pinto, A. J., Love, N. G.** 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. Poster presentation. *Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
281. **Beck, J. L., N. G. Love, K. F. Knowlton and J. Arogo Ogejo.** 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Poster presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, June 17-20, 2007.

282. **Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I.D.S., Love, N. G., Aga, D. S., Harper Jr., W. F.** 2007. Evaluation of the fate of environmentally relevant micropollutants. Podium presentation. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007.
283. **Aga, D. S., Harper Jr., W. F., Love, N. G. Khunjar, W. O., Klein, C., Celiz, D. M., Baik, S., Yi, T.** 2007. Investigating the connection between nitrification and the removal of pharmaceuticals using engineered bioreactors. *Micropol and Ecohazard 2007*, Frankfurt, Germany. Podium Presentation.
284. **Pinto, A. J., Guest, J. S., Love, N. G., Shaw, A., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., Barker, D.** 2007. Process control at nutrient removal wastewater treatment plants during toxic shock events. *State of the Art Nutrient Removal Design*, Water Environment Federation and International Water Association, March 3-7, 2007, Baltimore, Maryland.
285. **Klein, C., Aga, D. S., Love, N. G., Khunjar, W. O., and Harper Jr., W. F.** 2007. Characterizing the degradation products of 17 alpha-ethinylestradiol in activated sludge systems by LC/MS. 58th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. Chicago, IL, Feb 25-March 2, 2007. Podium presentation.
286. **Harper Jr. W.F., Love, N.G., Aga, D.S., Yi, T., Khunjar, W.O., Klein, C., O'Connor, S.** Evaluating the link between nitrification and the removal of 17 α -ethinylestradiol. Poster presentation. *Nutrient Removal 2007: The State of the Art. Water Environment Federation Specialty Conference*, Baltimore, MD.
287. **Ikuma, K., Rzigalinski, B. A. and Love, N. G.** 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. 233rd American Chemical Society National Meeting, Chicago, Illinois, March 25-29, 2007.
288. **Chandran, K. and Love, N. G.** 2006. Cd(II) mediated inhibition of *Nitrosomonas europaea* is linked to oxidative stress and is impacted by physiological state and growth mode. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006. (Number 1 Abstract out of 120+ submissions for Research Symposium)
289. **Kelly, R. T. Jr. and Love, N. G.** 2006. The role of glutathione mediated stress response mechanisms in nitrifying bacteria. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006.
290. **Capuno, R. E., Love, N. G., and Smets, B. F.** 2006. Mathematical modeling of start-up scenarios for nitrogen removal via a nitrification:anaerobic ammonia oxidation-coupled biofilm in a hollow fiber membrane bioreactor. *International Water Association Biofilm Systems VI*, Amsterdam, The Netherlands, September 24-27, 2006.
291. **Gilmore, K. R., R. E. Capuno, Jr., N. G. Love, and B. F. Smets.** 2006. Anaerobic stabilization of early planetary base ersatz wastewater formulation. Society of Automotive Engineers (SAE) Technical Paper Series 2006-01-2255. 36th International Conference on Environmental Systems, SAE, Norfolk, VA.
292. **Zaklikowski, A., Love, N. G., Vikesland, P. and Chandran, K.** 2006. The effect of breakpoint chlorination practices on the activity, viability and recovery of nitrifying bacteria in chloraminated water. *American Water Works Association Annual Meeting, Universities Forum*. June 12, 2006.
293. **Rushing, J. C., Vikesland, P., Love, N. G., Mutuc, M., Chan, K. M., Casselberry, R. and Cichy, P.** 2006. Evaluating in situ chemical and biological treatment approaches for two chlorinated aliphatic ethers: BCEE and BCEM. *The Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds*. Battelle, May 22-25, 2006, Monterey, California.
294. **Xu, Y., Lei, G., Linares, K. A., Fleming, D. L., Meehan, K., Lu, G. Q., Love, N. G. and Love, B. J.** 2005. Maximizing dye fluorescence via incorporation of metallic nanoparticles in solution. *SPIE (The International Society for Optical Engineering)*, 5591:175-183.
295. **Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G.** 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds.

- Proceedings of the Water Environment Federation 78th Annual Conference and Exposition*, Washington DC, Oct 31-Nov 2, 2005, 12 pages.
296. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Poster presentation at Water Environment Federation 78th Annual Conference and Exposition, Washington DC, Oct 31-Nov 2, 2005.
 297. Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G. 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds. *Proceedings of the 4th International Water Association Activated Sludge Population Dynamics Specialist Conference*, Gold Coast, Australia, 12 pages.
 298. Henriques, I. D. S., Aga, D., Mendes, P., and Love, N. G. 2005. Metabolic Footprinting: A New Approach to identify Changes in Activated Sludge Physiology upon Exposure to Toxic Compounds. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.
 299. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. Using Whole Genome Arrays to Investigate Functional Response to Contaminant Stress: the Response of *Pseudomonas aeruginosa* to Pentachlorophenol. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.
 300. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. The Stress Response of *Pseudomonas aeruginosa* to Pentachlorophenol. *Abstracts of the 105th General Meeting of the American Society for Microbiology*, Atlanta Georgia.
 301. Kelly II, R. T. and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically-inhibited nitrifiers. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.
 302. Kelly II, R. T. and Love, N. G. 2004. A critical comparison of methods used to determine nitrification inhibition. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 15 pages.
 303. Henriques, I. D. S., Stevens, A. M. and Love, N. G. 2004. Is biomass concentration a factor determining the sensitivity of activated sludge to toxic shocks? *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.
 304. Linares, K., Fleming, D., Xu, Y., Love, N. G., Love, B. J. and Meehan, K. 2004. Evaluating strategies for integrating bacterial cells into a biosensor designed to detect electrophilic toxins. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 17 pages.
 305. Henriques, I. D. S., Kelly II, R. T. and Love, N. G. 2004. Deflocculation Effects Due to Chemical Perturbations in Sequencing Batch Reactors. 3rd International Symposium on Sequencing Batch Reactors, International Water Association, Brisbane, Australia.
 306. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.
 307. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.
 308. Yanosek, K.A., Wolfe, M. L. and Love, N. G. 2003. Assessment of enhanced biological phosphorus removal for dairy manure treatment. In the *Animal, Agricultural and Food Processing Wastes*, *Proceedings of the Ninth International Symposium*, 11-14 October 2003 (Raleigh, North Carolina, USA), ed. Robert Burns. ASAE Pub #701P1203. pp. 212-220.
 309. Henriques, I. D. S. and Love, N. G. 2003. The role of floc morphology and composition on susceptibility of biomass to shock loads of chemical toxins. Poster presentation at Water Environment

- Federation 76th Annual Conference and Exposition, Los Angeles, CA October 2003. *1st Place - Best Poster Award*.
310. Holbrook, R.D., Novak, J. T. and Love, N. G. 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 311. Leung, S., Holst, T., Love, N. G. and Little, J. C. 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 312. Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G. 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 313. Wimmer, R. F. and Love, N. G. 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 314. Love, N. G., Wimmer, R. F., Barker, S., Travis, J., Love, B. J., and Locascio, L. 2002. Developing sensing technologies to enable proactive operations in biological wastewater treatment. Association of Environmental Engineering and Science Professors/American Academy of Environmental Engineers Conference, August 10-14, University of Toronto, Toronto, Canada, p. 24.
 315. Love, N. G. 2002. Invited keynote speaker. Status and Potential for Biosensors in Wastewater Treatment. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy.
 316. Holbrook, R. D., Novak, J. T. and Love, N. G. 2001. Process considerations for the reduction of endocrine disruption potential in wastewater effluents. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 317. Wimmer, R. F., Waddell, E., Barker, S. L. R., Suggs, A., Locascio, L., Love, B. J. and Love, N. G. 2001. Development of an upset early warning device to predict deflocculation events. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 318. Phipps, S. D. and Love, N. G. 2001. Quantifying observed biomass yield in a biological aerated filter. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 319. Love, N. G. and Bott, C. B. 2001. Evaluating the Role of Microbial Stress Response Mechanisms in Causing Biological Treatment System Upset. Microorganisms in Activated Sludge and Biofilm Processes, Rome, Italy [see associated *Water Science and Technology* publication above].
 320. Love, N. G., C. B. Bott, K. C. Terlesky. 2001. Proteomic approach to assessing environmental stress in complex microbial communities." Oral presentation at the 221st American Chemical Society National Meeting, San Diego, CA. April 2, 2001.
 321. Bott, C. B., Abrajano, J. and Love, N. G. 2000. A physiological mechanism for activated sludge deflocculation caused by shock loads of toxic chemicals. *Proceedings of the Water Environment Federation 73rd Annual Conference and Exposition*, Anaheim, CA, October 14-18, 2000.
 322. Bott, C. B., Duncan, A. J. and Love, N. G. 2000. Stress Protein Expression in Domestic Activated Sludge in Response to Xenobiotic Shock Loading. First World Congress of the International Water Association, Paris France [see associated *Water Science and Technology* publication above].
 323. Ma, G. and Love, N. G. 2000. Creating Anoxic and Microaerobic Conditions in Sequencing Batch Reactors Treating Volatile BTX Compounds. 2nd International Symposium on Sequencing Batch Reactor Technologies, Narbonne, France [see associated *Water Science and Technology* publication above].
 324. Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M. 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.

325. **Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M.** 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.
326. **Delahaye, A., Gilmore, K. R., Husovitz, K. J., Love, N. G., Holst, T., Novak, J. T.** 1999. Distribution and characteristics of biomass in pilot-scale upflow biological aerated filters treating domestic wastewater. Podium presentation. *Proceedings of the International Association on Water Quality Conference on Biofilm Systems*, New York, NY, October 17-21.
327. **Love, N. G., Gilmore, K. G., Husovitz, K. J., Delahaye, A. P., Novak, J. T. and Little, J. C.** 1999. Performance of a Biological Aerated Filter System Treating Domestic Wastewater for BOD, Ammonia and TSS Removal: Pilot Plant Results. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
328. **Husovitz, K. L., Gilmore, K. R., Delahaye, A. P., Love, N. G., and Little, J. C.** 1999. The influence of upflow liquid velocity on nitrification in a biological aerated filter. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
329. **Love, N. G., Bott, C. B., Duncan, A. J., Terlesky, K. C.** 1999. Using the molecular stress response as an indicator of system stress in complex environmental systems. Selected Podium Presentation, Association of Environmental Engineering and Science Professors Research Frontiers Conference, Pennsylvania State University, University Park, PA.
330. **Bott, C. B., Terlesky, K. C., Duncan, A. Jane, Wheeler, J., and Love, N. G.** 1998. The immunochemical detection of stress proteins as an indicator of toxic discharges to activated sludge systems. Podium presentation. *Proceedings of the Water Environment Federation 71st Annual Conference and Exposition*, Orlando, FL, October 3-7, 1998. 1:203-214.
331. **Phillips, J. B., and Love, N. G.** 1998. Biological denitrification using upflow biofiltration in recirculating aquaculture systems: pilot-scale experience and implications for full-scale. Podium presentation. *Proceedings of the Second International Conference on Successes and Failures in Commercial Recirculating Aquaculture*, Roanoke, VA. pp 171-178.
332. **Gilmore, K. R., K. J. Husovitz, T. Holst, and N. G. Love.** 1998. Influent of organic and ammonia loading on nitrifier activity and nitrification performance for a two-stage biological aerated filter system. 1998. *Proceedings of the International Specialty Conference on Microbial Ecology of Biofilms: Concepts, Tools, and Applications*, International Association on Water Quality, Lake Bluff, Illinois, October 8-10, 1998. 309-316.
333. **Terlesky, K. C. and Love, N. G.** 1998. Detection of Hsp60 in activated sludge following exposure to xenobiotic compounds. Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 444.
334. **Terlesky, K. C., and Love, N. G.** 1998. Photoheterotrophy in activated sludge, Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 423.
335. **Fettig, J. D., and Love, N. G.** 1997. BTX degradation in activated sludge culture under denitrifying conditions. Podium presentation. *Proceedings from the 2nd International Conference on Microorganisms in Activated Sludge and Biofilm Processes*, International Association on Water Quality, Berkeley, CA, pp 579-582.
336. **Lubkowitz, E. M. and Love, N. G.** 1997. Development of a single sludge biological treatment scheme that incorporates nitrogen removal for a wastewater containing compounds inhibitory to nitrification. Podium presentation. *Proceedings of the Water Environment Federation 70th Annual Conference and Exposition*, Chicago, IL, October 18-22, 1997. 3(2):577-588.
337. **Rasnake, W. J., Love, N. G., Black, W. L., and Gruber, D.** 1997. Application of a toxicity reduction evaluation at a seafood processing facility which emphasized source reduction and treatment

- efficiency to minimize environmental risk. Podium presentation. *Proceedings of the 29th Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Roanoke, VA, pp 263-269.
338. Terlesky, K. C. and Love, N. G. 1997. Analysis of total protein present in activated sludge: applicability to monitoring the induction of indicator proteins in a microbial consortium. Poster presentation. *Abstracts of the 97th General Meeting of the American Society for Microbiology*, Miami Beach, Florida, p. 469.
 339. Novak, J. T., Smith, M. L., and Love, N. G. 1996. The impact of cationic salt addition on the settleability and dewaterability of an industrial activated sludge. Podium presentation. *Proceedings of the Water Environment Federation 69th Annual Conference and Exposition*, 2:211-222.
 340. Love, N. G. and Grady, C. P. L. Jr., 1995. Impact of glucose and m-toluate on the rate and extent of benzoate-mediated TOL plasmid instability. Poster presentation. *Abstracts of the 95th General Meeting of the American Society for Microbiology*, Washington, D.C.
 341. Lu, Y.-T., Love, N. G., and Grady, C. P. L. Jr. 1993. A microscopic technique to detect plasmid-free cells in a background of plasmid-containing cells. Poster presentation. *Abstracts of the 93rd General Meeting of the American Society for Microbiology*, Atlanta, Georgia.

Published Reports (not peer reviewed)

342. Margaret R. Mulholland*, Nancy G. Love*, Deborah A. Bronk, Vikram Pattarkine, Amit Pramanik, H. David Stensel. 2009. Establishing a research agenda for assessing the bioavailability of wastewater treatment plant-derived effluent organic nitrogen in treatment systems and receiving waters. Chesapeake Bay Scientific and Technical Advisory Committee Publication 09-002, <http://www.chesapeake.org/stac/Pubs/eonreport.pdf>. (*co-chairs)
343. Mulholland, M. R., Love, N. G., Pattarkine, V. M., Bronk, D. A. and Canuel, E. 2007. Bioavailability of Organic Nitrogen from Treated Wastewater. Chesapeake Bay Scientific and Technical Advisory Committee Publication 07-001.

Conference Presentations (not listed elsewhere; presenter in bold, student designations as defined previously)

344. Several posters to be presented at the Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 - A. Noe-Hays, A. Davis, **N. J. Lowe**, **J. Eraci**, **Y. J. Qoi**, A. Sabido, K. Nace, **E. Rodriguez**, K. Wigginton, N. Love. Onsite production of concentrated urine-derived fertilizer in building-scale systems using remote process monitoring and control.
 - **E. Rodriguez**, **W. Tameh**, K. Wigginton, N. G. Love. Comparative Examination of Pharmaceutical Degradation in Synthetic Urine by a Dielectric Barrier Discharge Plasma Jet and UV/H₂O₂ Reactor.
 - Kerkez, B., N. G. Love, R. L. McCaffery, **M. Bartos**, J. Montgomery, **E. TerBeek**. A First Year College Course on Smart Water Systems.
345. Several talks were given by invitation at the Rich Earth Institute's Urine Summit, August 16-17, 2017 in Brattleboro, VT. As PI, Nancy Love was involved with developing content for all these slides and overseeing their presentations.
 - Malavika Sahai. Social Research for the UM INFEWS Project.
 - Heather Goetsch. Microbial risks in source-separated urine.
 - Enrique Rodriguez. Urine-derived fertilizer tool.
 - Dylan Raye-Leonard. Pilot-scale urine diversion and processing @ UMICH
346. **Enrique Rodriguez**, **Dylan Raye-Leonard** and **Heather Goetsch**. 2017. Overview and tour of the urine-diversion and urine processing @Michigan. AEESP Biannual Conference, June 21, 2017.
347. **McFarland, A.**, Larsen, L., Love, N.G. Stormwater Management in Low-Resource Settings Using Green Infrastructure. Fall 2017. Dow Sustainability Symposium, Poster Presentation, Ann Arbor, MI.

348. **Delgado Vela, J., Stadler, L., Love, N.G.** 2014. Elucidating Biotransformation of Pharmaceuticals by the Methanotroph *Methylosinus trichosporium* Ob3b. Gordon Research Conference Environmental Sciences: Water, Plymouth, NH, June 22-27. (poster presentation)
349. **Stadler, L. B., Su, L., Stevens, L., Delgado Vela, J., Aga, D. S., and Love, N. G.** 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation. Poster presentation. IWA 5th International Conference on Microbial Ecology and Water Engineering, Ann Arbor, MI, July 7 – 10. (poster presentation)
350. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2013. Impact of Dissolved Oxygen Concentration on Pharmaceutical Biotransformations during Wastewater Treatment. Poster presentation. Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI, November 15. (1st place in Civil & Environmental Engineering track poster competition).
351. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation during Wastewater Treatment. Poster presentation. 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.
352. **Delgado Vela, J., Stadler, L., Love, N.G.** 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors (AEESP) 50th Anniversary Conference, Golden CO, July 14-16.
353. **Stadler, L. B., Moline, C. J., Ernstoff, A. S., Su, L., Dapcic, A. D., Aga, D., and Love, N. G.** 2012. Pharmaceutical Fate in Biological Treatment Reactors Across Varying Redox Environments. Poster presentation. Gordon Research Conference, Environmental Science: Water. Holderness, NH, June 25 - 29.
354. **Love, N.G.** Challenges in Predicting Micropollutant Fate in Biological Processes. WWTMod2012 Workshop on Modelling Micropollutant Fate in Biological Processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012.
355. **Keen, O., Baik, S., Stadler, L. B., Linden, K. G., Aga, D. S., and Love, N.G.** 2011. Assessing the Use of Advanced Oxidation and Biofiltration to Remove Recalcitrant Pharmaceuticals Downstream of Biological Treatment. Borchardt Conference, University of Michigan, Ann Arbor, MI, February 23.
356. **Cook, S. M.** and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. Oral presentation at *Biogas Summit*. Flint, MI, October 29, 2010.
357. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** Methane Production from Domestic Wastewater using Anaerobic Membrane Bioreactors. Oral presentation at *Biogas Summit*, Flint, Michigan, October 29, 2010.
358. **Cook, S. M.** and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. *Michigan Food Processors Summit*. Mt. Pleasant, MI, October 20, 2010
359. **S. Ghosh, C. M. Cremers, U. Jakob, and N. G. Love.** Chlorophenols modulate expression of the multidrug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa*. Gordon Research Conference on Environmental Sciences: Water. Holderness, New Hampshire. June 20-25, 2010
360. **Guest, J.S., S. J. Skerlos, N. G. Love.** 2011. Quantitative sustainable design of wastewater treatment plants. Borchardt 2011 Conference: A Seminar on Advancements in Water and Wastewater, Ann Arbor, MI. February 24, 2011. Podium presentation.
361. **Cook, S. M.** and N.G. Love. 2011. Two-phase anaerobic codigestion of septage and food processing waste: designing a reliable, regional waste management strategy. *Borchardt 2011 Conference*, Ann Arbor, MI, February 23-24, 2011. Poster presentation.
362. **S. Ghosh, J. F. Muller, A. M. Stevens and N. G. Love.** Chlorinated phenols and multidrug resistance in *Pseudomonas aeruginosa*. *Borchardt 2011 Conference*, Ann Arbor, Michigan. February 23-24, 2011. Poster presentation

363. Smith, A.L., Z. Li, H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. Presented at *Borchardt 2011 Conference*, Ann Arbor, Michigan, February 23-24, 2011. Podium presentation.
364. Guest, J.S., S.J. Skerlos, N.G. Love. 2010. An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. *IWA Leading Edge Conference on Water and Wastewater Technologies*, Phoenix, AZ, June 2, 2010. Poster presentation.
365. Knowlton, K. F., Love, N. G., Thames, T. H., and Z. Zhao. 2010. Is manure turning boy fish into girl fish? An emerging environmental challenge for livestock producers. In *Proceedings of the Virginia State Feed Association Conference*, Roanoke, VA February 19, 2010, pp 83-89.
366. Guest, J. S., Love, N. G., Lamp, J., Ellis, M. W., Naha, S., and Puri, I. K. 2008. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb 27, 2008.
367. Khunjar, W. O., Love, N. G., Skotnicka-Pitak, J., Aga, D. S., Yi, T., and Harper, W. F. Jr. 2008. Biotransformation of pharmaceuticals and personal care products during nitrification: the role of ammonia oxidizing bacteria. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb. 27, 2008.
368. Aruguete, D.M., Guest, J.S., Shrout, J. D., Love, N. G., Hochella, Jr., M. F. 2008. Bacteria quantum dot interactions and their environmental implications. Poster presentation. *Environmental Nanoparticles: Science, Ethics and Policy*, University of Delaware, Newark, DE, November 10, 2008.
369. Skotnicka-Pitak, J., Aga, D. S., Khunjar, W. O., Love, N. G., Yi, T., Harper Jr., W. F. 2007. Characterization of EE2 metabolite in bioreactors with pure cultures of *Nitrosomonas europaea* and in activated sludge using LC/ITMS. *56th ASMS Conference on Mass Spectrometry*.
370. Aruguete, D.M., J.S. Guest, J.D. Shrout, N.G. Love, and M.F. Hochella, Jr. 2007. Bacterial physiology and viability in the presence of quantum dot nanoparticles: towards an environmental perspective. American Geophysical Union Fall Meeting, San Francisco, California, December 10, 2007.
371. Pinto, A.J., Hardin, S.C., Guest, J.S., Love, N.G., Shaw, A. 2007. Comparing toxic shock event response protocols for wastewater treatment plants. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Joint Annual Meeting (WaterJAM), Hampton, VA, September 16-20, 2007.
372. Guest, J.S., A.J. Pinto, N.G. Love, and A. Shaw. Corrective action strategies for enhanced biological phosphorus removal wastewater treatment plants during short-term and prolonged toxic shock events. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Water Joint Annual Meeting 2007 (Water JAM), Hampton, Virginia, September 16-20, 2007. *Winner 2007 Best Student Paper Award*.
373. Kelly, R. I. and Love, N. G. 2007. Detecting nitrification problems: A comparison of methods. Podium presentation at the Pacific Northwest Clean Water Association Annual Conference, September 9-12, 2007, Vancouver, British Columbia.
374. Guest, J. S., Naha, S., Frey, S., Sole, J.D., Love, N.G., Puri, I.K., Ellis, M. W. 2007. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster – Environmental Technologies Category*.
375. Zhao, Z., Knowlton, K. F., Love, N. G. 2007. Can we remove estrogens in dairy manure during storage? Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster - Natural Environment Category*.
376. Pinto, A.J., Guest, J.S., Love, N.G., Shaw, A. 2007. Process controls at nutrient removal wastewater treatment plants during toxic shock events. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

377. Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., and Harper Jr., W. F. 2007. Evaluation of the fate of environmentally relevant micropollutants. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
378. Gilmore, K. R., Love, N. G. and Smets, B. F. 2007. Nitrification and autotrophic nitrogen removal in a hollow-fiber membrane-aerated biofilm reactor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
379. Ikuma, K., Henriques, I. D. S., Rzigalinski, B. A., Love, B. J., and Love, N. G. 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
380. Fraga-Muller, J., Ikuma, K., Stevens, A. M., and Love, N. G. 2007. Organic contaminants cause increased antibiotic resistance in *Pseudomonas aeruginosa*. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
381. Gungor, K., Arogo Ogejo, J., Knowlton, K. F., Love, N. G. 2007. Biological phosphorus removal to produce "Designer Manures" for dairy farms. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
382. Arogo Ogejo, J., Gungor, K., Wen, Z., Hu, Z., Yao, T., Love, N. G., Knowlton, K. F. 2007. Recovery of phosphorus from dairy manure as struvite. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
383. DeBusk, J., Arogo Ogejo, J., Love, N. G., Knowlton, K. F. 2007. Adjusting N:P ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
384. Beck, J., Gilmore, K. R., Knowlton, K. F., Arogo Ogejo, J., Love, N. G. 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
385. Muller, J. F., Stevens, A. M. and Love, N. G. 2006. Organic contaminants cause increased antibiotic resistance in *Pseudomonas aeruginosa*. Poster presentation. Environmental Science – Water Gordon Research Conference, June 25-30, 2006, Holderness School, Plymouth, New Hampshire.
386. Zhao, Z., Knowlton, K. F., Love, N. G., and Fang, Y. 2006. Estrogen content of treated dairy manure. Virginia Water Science and Technology Symposium, November 1-3, 2006, Blacksburg, VA. 2006 Best Student Presentation Award.
387. Capuno, R. E., Love, N. G. and Smets, B. F. 2006. Mathematical modeling of nitrogen removal via a coupled nitrification:anaerobic ammonia oxidation biofilm in a hollow fiber membrane bioreactor. Virginia Water Environment Association Annual Meeting, May 1-3, 2006, Roanoke, VA. 2006 Best Student Paper Award.
388. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
389. Khunjar, W., Sweetman, P., Knowlton, K. F., Smets, B. F. and Love, N. G. 2005. Treatment of anaerobically stabilized dairy waste with an oxygen limited autotrophic nitrification plus denitrification (OLAND) fixed film reactor: startup and maintenance issues. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
390. Haley, M., Grandstaff, J. and Love, N. G. 2005. Solving a mystery: a case study using root cause analysis to decipher a toxic upset event. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
391. Muftugil, M. B., Love, N. G. and Knowlton, K. F. 2005. Using Enhanced Biological Phosphorus Removal (EBPR) to Alter the Nitrogen:Phosphorus Ratio of Dairy Manure and to Minimize Nutrient

- Delivery to Receiving Waters, Water Environment Federation Innovative Uses of Agricultural Wastes Conference, Chicago, IL, July 1-3, 2005.
392. Xu, Y., Linares, K., Meehan, K. A., Love, N. G. and Love, B. J. 2004. pH dependent optical properties of surface modified gold nanoparticles using bovine serum albumin coating. NSTI Nanotechnology Conference and Trade Show, Boston, MA, March 2004.
 393. Kelly II, R. T., and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically inhibited nitrifiers. Poster presentation. Environmental Science – Water Gordon Research Conference, June 27-July 1, 2004, Holderness School, Plymouth, New Hampshire.
 394. Sandu, S., Hallerman, E. and Love, N. G. 2004. Ozone treatability and pilot-scale treatment for aquaculture effluent recovery and reuse. Presented at the International Conference on Successes and Failures in Commercial Recirculating Aquaculture, Roanoke, VA, July 2004.
 395. Fleming, D., Linares, K., Xu, Y., Love, B., Love, N. and Meehan, K. 2004. Use of immobilized bacterial elements in an environmental biosensor. The Eighth World Conference on Biosensors, Granada, Spain. May 24-26, 2004.
 396. Chakraborty, I., Rhodes, R.R., Stevens, A.M., and Love, N. G. 2004. Monitoring the adaptation of an enriched bacterial consortium in response to chemical stressors using DGGE and sequencing. Poster Presentation, 10th International Symposium on Microbial Ecology, Cancun, Mexico, August 22-27, 2004.
 397. Kelly, R. T. and Love, N. G. Mechanisms of chemical inhibition of nitrification in wastewater treatment. Virginia Water Environment Association, Roanoke, VA, May 2003. 2003 Best Student Paper Award.
 398. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. Virginia Water Environment Association, Roanoke, VA, May 2003.
 399. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. Virginia Water Environment Association, Roanoke, VA, May 2003.
 400. Bott, C.B., Henriques, I. D. S., Kelly, R. T., Dauphinais, J. L., and Love, N. G. 2002. WERF - Upset early warning systems for biological wastewater treatment. *Proceedings of the Water Environment Federation 8th Annual Industrial Wastes Technical and Regulatory Conference*, Atlantic City, New Jersey, August 11-14, 2002.
 401. Holbrook, R.D., Novak, J. T. and Love, N. G. 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 402. Leung, S., Holst, T., Love, N. G. and Little, J. C. 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 403. Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G. 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 404. Wimmer, R. F. and Love, N. G. 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 405. Love, N. G. and Bott, C. B. 2002. In search of physiological mechanisms linked to wastewater treatment malfunctions caused by toxic chemicals. Oral presentation. Gordon Research Conference on Microbial Stress Responses. July 14-19, Salve Regina University, Newport, Rhode Island.

406. **Brazil, B. L.** and Love, N. G. 2002. Design and implementation of a pilot-scale nitrogen removal system employing fermentation of endogenous carbon sources to treat an aquaculture waste stream. Aquaculture America 2002, Jan. 27-30, San Diego, CA.
407. **Wimmer, R. F.** and Love, N. G. 2001. Potassium efflux as a bacterial defense mechanism against chlorinated disinfectants. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA. *2001 Best Student Research Paper Award.*
408. **Brazil, B. L.** and Love, N. G. 2001. Design and implementation of a pilot-scale nitrogen removal system employing fermentation and endogenous carbon sources to treat an aquaculture waste stream. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA.
409. **Bott, C. B.** and Love, N. G. 2000. Mechanistic evaluation of activated sludge deflocculation in response to shock loads of electrophilic xenobiotic chemicals. Virginia Water Environment Association Annual Meeting, May 2000, Roanoke, VA. *2000 Best Student Research Paper Award.*
410. **Ma, G.** and Love, N. G. 1999. BTX biodegradation under anoxic, microaerobic, and aerobic conditions in activated sludge sequencing batch reactors. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA. *1999 Best Student Research Paper Award.*
411. **Love, N.G., Delahaye, A., Gilmore, K. R., Holst, T., Husovitz, K. J., Little, J. C., and Novak, J. T.** 1999. Performance of a two-stage biological aerated filter system treating domestic wastewater for BOD and ammonia removal – pilot-scale results. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA.
412. **Love, N. G.** 1999. The Applicability of the Microbial Stress Response as an Indicator for In Situ and Up-Stream Wastewater Treatment Monitoring. Invited podium presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA.
413. **Ma, G., Bilyk, K.** and Love, N. G. 1999. Nitrite accumulation and inhibition during denitrification. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *2nd Place Best Student Research Award.*
414. **Phippis, S.,** Love, N. G., and Novak, J. T. 1999. Dewatering of oily wastewater sludge. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *3rd Place Best Student Research Award.*
415. **Love, N.G., Duncan, A. J., and Bott, C. B.** 1998. Detection of Hsp60 in activated sludge following heat shock and exposure to xenobiotic compounds. Poster presentation. Gordon Research Conference on the Microbial Stress Response, New England College, Henniker, NH.
416. **McInnis, J.,** Love, N. G., and Novak, J. T. 1998. Pilot Study of Aerobic Treatment of Waste Oily Sludge. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia.
417. **Fallon, A.,** Novak, J. T., and Love, N. G. 1998. Biological Treatment of Oily Sludge: Laboratory Studies. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia. *1998 Best Student Research Paper Award.*
418. **Phillips, J.,** and Love, N. G. 1997. Denitrification of recirculating aquaculture system waters using an upflow fixed film bioreactor. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia. *1997 Best Student Research Paper Award.*
419. **Perri, K. L.,** and Love, N. G. 1997. The effectiveness of sequential treatment strategies on the treatability of a high strength industrial wastewater. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia.
420. **Love, N. G.** and Grady, C. P. L. Jr. 1994. The impact of second substrates on the expression of a TOL plasmid. Poster presentation. Gordon Research Conference on Environmental Sciences: Water, New Hampton, New Hampshire.

421. Hegan (Love), N. G. and Pfeffer, J. T. 1987. Using oxidation-reduction potential as a monitoring device for biological phosphorus removal systems. Podium presentation. Texas Water Pollution Control Association Annual Meeting, Corpus Christi, Texas.

FUNDED PROJECTS

(Total Value: \$29.3 million; Share Value: \$7.4 million)

Research Support Received – External Programs

(Total Value: \$21.6 million; Share Value: \$5.8 million)

- | | |
|---|--|
| 1. Love, N. G. An effect-directed monitoring program for SWIFT effluent-Yr 2. Hampton Roads Sanitation District | \$130,000
3/1/17-continuing
100% share |
| 2. Love, N. G., J. P. Newell, M. Arabi, T. Bradley and S. P. McElmurry. Planning Grant: Engineering Research Center for Regenerative, Restorative and Resilient Community Infrastructure Systems (R3CIS). National Science Foundation. | \$100,000
09/18 – 08/20
100% share |
| 3. McElmurry, S. P., M. Seeger, N. G. Love, B. Kerkez, J. A. MacDonald Gibson. COLLABORATIVE PROPOSAL: CRISP 2.0 Type 2 – Water and Health Infrastructure Resilience and Learning (WHIRL). National Science Foundation. | \$2 million
09/18 – 08/22
5% share |
| 4. Love, N. G., V. Bertacco, B. Kerkez, L. Larsen. IRES: Advancing Cyber-Enabled, Decentralized Water Systems in Rapidly Developing Cities. National Science Foundation. | \$249,989
09/17 – 08/20
25% share |
| 5. Lastoskie, C. and N. G. Love. Workshop: Advancing Healthy Communities – the 2017 AEESP Meeting. National Science Foundation. | \$49,999
01/17 – 12/17
50% share |
| 6. Kerkez, B. and N. G. Love. Dynamic collection system reconfiguration through real-time modeling and control. Great Lakes Water Authority | \$131,864
5/22/17-11/21/18
10% share |
| 7. Daigger, G. T. and N. G. Love. Characterizing the performance and operational characteristics of the bioreactors at the Detroit, MI wastewater treatment plant. Great Lakes Water Authority. | \$100,000
5/1/17-4/30/17
10% share |
| 8. Daigger, G. T. and N. G. Love. Traverse City regional wastewater treatment plant's comma-shaped Gram positive bacteria study. Traverse City Regional Wastewater Treatment Plant. | \$120,000
9/1/16-12/31/17
25% share |
| 9. Love, N.G., D. S. Aga, R. Hardin, A. Noe-Hays, and K. R. Wigginton. INFEWS/T3: Advancing technologies and improving communication of urine-derived fertilizers for food production within a risk-based framework. National Science Foundation. | \$3 million
9/1/16-8/31/20
23% share |
| 10. McElmurry, S. (PI, Wayne State University), multiple co-PIs, N. G. Love is co-PI for project and PI for UM. Flint Area Community Health and Environment Partnership (FACHEP) Phase II Study-Enhanced disease surveillance and environmental monitoring in Flint, Michigan. State of Michigan Department of Health and Human Services. | \$2 million
8/1/16-12/31/17
~4% share |
| 11. Xu, M., J. Johnson, N. G. Love, S. Miller and J. Newell. UNS: U.S.-China: Integrated systems modeling of food-energy-water (FEW) nexus for urban sustainability. National Science Foundation. | \$499,990
6/1/16-5/31/20
10% share |
| 12. Love, N.G. and T. M. Olson. RAPID: Assessing microbiological quality across point-of-use filters deployed in Flint, MI. (\$30,250 cost share from College of Engineering). National Science Foundation. | \$49,999
4/1/16 – 3/31/2017
50% share |
| 13. Newell, J. P., G. T. Daigger, N. McClintock, A. Ramswami, J. Vandermeer. N.G. Love Senior Personnel and one of three proposal authors (with Newell and | \$69,242
7/01/15 – 12/31/15 |

	Daigger). FEW Workshop: "Scaling Up" Urban Agriculture to Mitigate Food-Energy-Water Impacts. National Science Foundation.	30% share
14.	Love, N.G. and C. B. Bott. GOALI: Developing Sensor-Mediated Control Strategies that Allow Innovative Treatment of Nitrogen in Wastewater. National Science Foundation.	\$330,000 9/1/14 – 8/31/18 100% share
15.	Wigginton, K. R., N. G. Love, J. Jimenez, A. Noe Hayes, D. S. Aga, C. B. Bott. Nutrient Recovery Through Urine Separation. Water Environment Research Foundation EPA Water Center.	\$554,034 5/1/14 – 12/31/15 10% share
16.	Raskin, L. and N. G. Love. Evaluation of Waste Activated Sludge Anaerobic Contactor (WASAC™) as a Process for Energy Conservation at Domestic Wastewater Treatment Plants. Carollo Engineering.	\$104,481 3/1/2013-4/30/2014 50% share
17.	Love, N.G., L. Raskin, C. Bott, S. Skerlos and A. Salvesson. Low Energy Alternatives for Activated Sludge-Advancing Anaerobic Membrane Bioreactor Technology. Water Environment Research Foundation.	\$527,000 1/1/2013-12/31/2014 33% share
18.	Burns, M. A. and N. G. Love. Point-of-Use Water Quality Assessment (Sensors for Faucets). MASCO Inc.	\$583,868 9/1/12-8/31/15 10% share
19.	Linden, K., D. S. Aga and N. G. Love. Demonstrating Advanced Oxidation/Biofiltration for Pharmaceutical Removal in Wastewater. Water Environment Research Foundation.	\$150,000 3/1/2012-8/31/2013 10% share
20.	Raskin, L., S. J. Skerlos and N. G. Love. Low-temperature Anaerobic Membrane Bioreactors for Sustainable Domestic Wastewater Treatment. National Science Foundation (CBET-1133793)	\$404,365 9/1/11 – 8/31/14 10% share
21.	Olson, T. and N. G. Love. Point-of-Use Devices as Incubators of Halogenated Phenol-Mediated Antibiotic Resistant Bacteria. National Science Foundation (CBET-1067450) (includes \$55,669 supplement to support dissertation work of Mr. Bayable Atnafu Kassa of Addis Ababa University)	\$373,556 5/1/11 – 4/30/15 50% share
22.	Love, N. G., J. S. Guest and S. J. Skerlos. Quantitative Sustainable Design of Chesapeake-Elizabeth WWTP Upgrade Alternatives	\$8,500 1/1/11-6/30/11 33% share
23.	Love, N. G. Understanding Microaerobic Metabolism in a Sustainable World. Water Environment Research Foundation	\$149,312 2/1/10–3/31/12 100% share
24.	Savage, P. E., G. Keoleian, A. Matzger, S. Linic, and N. Lin (Senior Personnel = H. Wang and N. G. Love). EFRI HyBi: The Science and Engineering of Microalgae Hydrothermal Processing. National Science Foundation (EFRI 0937992)	\$2,000,000 9/1/09-8/31/13 2% share
25.	Love, N. G., K. Linden and D. S. Aga. Demonstrating Advanced Oxidation Technologies on Pharmaceutical Removal Downstream of Biological Treatment. Water Environment Research Foundation.	\$80,000 1/1/10-5/15/11 34% share
26.	Love, N. G. and L. Raskin. MSB – Investigating the Relationship Between Structural Diversity and Functional Resilience to Stress in Ammonia Oxidizers. National Science Foundation (IOS-0919629)	\$312,560 9/1/09-8/31/11 50% share
27.	Raskin, L., S. J. Skerlos and N. G. Love. Anaerobic Membrane Bioreactors for Sustainable Wastewater Treatment. Water Environment Research Foundation	\$159,938 5/1/09-4/30/11 10% share

28. Bott, C. B., Schafran, G., Mulholland, M. and Love, N. G. Integrated Fixed-Film Activated Sludge (IFAS) Demonstration Project at the James River Wastewater Treatment Plant (JRWWTP). Hampton Roads Sanitation District
\$100,000
4/1/08–3/31/09
30% share
29. Bronk, D., Canuel, E., Hatcher, P., Love, N. G. and Mulholland, M. Collaborative Research: Assessing the Bioavailability of Effluent Organic Nitrogen Along a Freshwater to Saltwater Continuum. National Science Foundation (NG Love original PI, shifted to co-PI upon moving to MI)
\$448,073
4/1/08–3/31/10
8% share
30. Love, N. G., Ellis, M., Puri, I. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Water Environment Research Foundation
\$155,869
3/15/07–3/14/09
50% share
31. Edwards, M. and Love, N. G. Effects of Nitrification on Distribution System Materials. American Water Works Research Foundation
\$350,000
1/15/07–11/15/09
8% share
32. Love, N. G. Anammox Studies in Association with DC Water and Sewer Authority. District of Columbia Water and Sewer Authority
\$95,000
9/1/06–8/31/08
100% share
33. Love, N. G. Development of Response Protocols for Wastewater Treatment Plants Exposed to CBR Contaminants. Water Environment Research Foundation.
\$300,000
1/1/06–8/31/08
100% share
34. Love, N. G. Preliminary Nitrification Experiments in Support of the Reject Water Treatment Study for The Blue Plains Advanced Wastewater Treatment Facility. District of Columbia Water and Sewage Authority.
\$32,133
12/24/05–6/24/06
100% share
35. Love, N. G. Planning, Mobilization, Enrichment and Evaluation of Anammox Organisms. District of Columbia Water and Sewage Authority.
\$7,364
11/15/05–9/30/06
100% share
36. Love, N. G. and Love, B. J. Detection of Toxins in the Water Supply. National Institute of Standards and Technology.
\$75,000
10/1/05–9/29/06
50% share
37. Love, N. G., Aga, D. S. and Harper, W. J. Collaborative Research: The Biotransformation of Hydrophobic and Hydrophilic Pharmaceuticals and their Metabolites by Nitrifying and Heterotrophic Cultures, National Science Foundation.
\$414,196
6/1/2005–5/31/2009
26% share
38. Bonner, J. S., Love, N. G., Jones, K. L., Zaslavsky, I., Baru, C. K., Fountain, T., Wentling, T. L., Collaborative Large-Scale Engineering Analysis Network for Environmental Research for the Coastal Margin, National Science Foundation.
\$85,309
8/1/2004–7/31/2005
8% share
39. Love, N. G., Knowlton, K. F. and Smets, B. F. Wastewater Treatment to Minimize Nitrogen Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology.
\$214,200
9/1/2004–8/31/2006
60% share
40. Love, N. G. and Smets, B. F. Integrated Biotreatment Technology for Nitrogen-Rich Wastewaters in Advanced Life Support Systems. NASA.
\$419,119
10/1/2004–9/30/2007
90% share
41. Shaw, A. and Love, N. G. Feasibility Testing of Support Systems to Prevent Upsets. Water Environment Research Foundation.
\$175,000
3/1/04–2/28/06
15% share
42. Vikesland, P. and Love, N. G. Treatability Evaluation of Three Chlorinated Organic Compounds. Parsons Corporation.
\$115,730
12/19/03–12/31/04
50% share

43. Vikesland, P. and Love, N. G. Effects of Dissimilatory Iron Reducing Bacteria on the Longevity of Iron Permeable Reactive Barriers. Virginia Water Resources Research Center. \$18,500
7/1/03–6/30/04
20% share
44. Knowlton, K. F., Love, N. G. and Mullins, G. Wastewater Treatment to Minimize Nutrient Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology. \$278,934
9/1/03–8/31/05
40% share
45. Love, N. G., Meehan, K. A., Love, B. J. A Microfluidic Biosensor for Environmental Monitoring. U. S. Environmental Protection Agency Midwest Hazardous Substances Research Center. \$279,022
10/1/03–9/30/06
34% share
46. Love, N. G. Factors Affecting the Performance of Acid Phase Digesters Treating Municipal Sludges: Stage I. District of Columbia Water and Sewer Authority. \$24,382
6/3/02–11/30/02
100% share
47. Vikesland, P., Love, N. G. and DiGiano, F. Assessment of Seasonal Practices and Impacts to Chloraminating Utilities. American Waterworks Association Research Foundation. \$528,362
7/1/02–1/1/05
22% share
48. Little, J. D. and Love, N. G. Optimizing a Biological Aerated Filter. Virginia Center for Innovative Technology. \$30,000
3/1/02–10/31/02
50% share
49. Little, J. C., Filz, G., Berry, D., Eick, M., Hochella, M., Love, N., Schreiber, M., Widdowson, M. GAANN: An Interdisciplinary Program in Environmental Biogeochemistry. US Dept of Education. Phase I: \$432,855
8/16/01–8/15/04
17% share
Phase II: \$373,599
8/16/04–8/15/07
8% share
50. Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center. \$19,200
7/1/01–6/30/02
33% share
51. Love, N. G. and Little, J. C. Development of a Fundamentally-Based Model of a Biological Aerated Filter. Degremont North American Research and Development, Inc. \$55,420
6/11/01–8/10/02
50% share
52. Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center. \$19,200
7/1/01–6/30/02
33% share
53. Bishop, P., Love, N. G., and Stevens, A. M. Adaptation of subsurface microbial biofilm communities in response to chemical stressors. EPA Hazardous Substance Research Center (Purdue University). \$214,000
9/1/01–8/31/03
50% share
54. Love, N. G., Upset early warning systems for biological treatment processes: fundamental studies on source-cause-effect relationships, Water Environment Research Foundation. \$326,646
1/1/01–4/30/04
100% share
55. Novak, J. T., Love, N. G., and Hughes, J. M. Testing of a Package Wastewater Treatment System and Consultation Services for UTD, Inc., UTD, Inc. STTR II. \$150,100
10/1/00–5/1/02
45% share
56. Love, N. G. and Love, B. J. New technologies: integrating microfluidics, materials science and microbiology: biosensors for protecting wastewater treatment systems. National Science Foundation. \$105,050
9/1/00–12/31/02
75% share
57. Love, N. G., Grizzard, T., and Novak, J. T. Virginia Tech's Plan of Study for the Loudoun County Sanitation Authority Broad Run Advanced Wastewater Treatment Pilot Plant Study. CH2M Hill, Inc. \$126,564
8/15/00–5/31/01
30% share

58.	Love, N. G. Monitoring the full-scale Biofor® biological aerated filter system at Roanoke, VA. Inflico Degremont, Inc.	\$30,000 12/24/99–2/15/01 100% share
59.	Love, N. G. and Bott, C. B. Assessment and framing workshop on upset early warning systems. Water Environment Research Foundation.	\$81,064 6/30/99–7/1/00 75% share
60.	Love, N. G. and Stevens, A. M. Characterizing nitrifying bioaugmentation cultures. Sybron Chemical Company and Virginia Center for Innovative Technology.	\$90,000 9/1/98–6/30/00 50% share
61.	Love, N. G. Evaluating protein induction patterns in industrial activated sludge cultures. Eastman Chemical Company.	\$43,294 12/1/97–12/31/98 100% share
62.	Love, N. G., Little, J. C., and Novak, J. T. A Fundamentally-based investigation into the operational potential of the Biofor® biological aerated filter. Degremont North American Research and Development, Inc., with matching from the Virginia Center for Innovative Technology.	\$95,592 9/97–12/98 50% share
63.	Widdowson, M. A. Love, N. G., and Novak, J. T. Evaluation of intrinsic bioremediation at the Douge Creek Subdivision, Ft. Belvoir, VA. Horne Engineering Services, Inc.	\$28,800 9/16/96–9/16/97 10% share
64.	Love, N. G., Widdowson, M. A., and Novak, J. T. An investigation into the use of biologically-based treatment technologies for waste oil volume reduction at Norfolk Southern Corporation. Norfolk Southern Corporation and Virginia Water Resources Research Center.	\$116,835 8/1/96–8/31/98 45% share
65.	Love, N. G. Laboratory studies to assess wastewater treatment strategies for Eastman Chemical Company. Eastman Chemical Company.	\$10,000 11/15/95–3/1/97 100% share
66.	Love, N. G. The distribution and expression of BTX-degrading microorganisms in anoxic/aerobic single sludge biological treatment processes. National Science Foundation CAREER Award.	\$335,618 7/1/95–6/30/99 100% share
67.	Love, N. G. The role of anoxic zones in preventing methylethyl ketoxime inhibition of nitrification. Virginia Water Resources Research Center and AlliedSignal Chemical Company.	\$20,000 4/1/95–4/30/96 100% share
68.	Love, N. G. and Novak, J. T. The impact of industrial wastewater composition on the bioflocculation of biological sludges. Virginia Water Resources Research Center and Eastman Chemical Company.	\$30,000 2/1/95–2/29/96 50% share
Research Support Received – Internal Programs (Total Value: \$4.0 million Share Value: \$424,850)		
69.	Love, N. G., M. Zimmerman. Partnerships that Support Confident Use and Management of Point-of-Use Drinking Water Units in Flint, MI. University of Michigan Poverty Solutions Center.	\$25,000 Jan 2020–present 90% share
70.	Love, N.G., J. Eisenberg, A. Jones. Addressing the Food-WASH Nexus Across the Urban-Rural Gradient and Impacts on Childhood Stunting. University of Michigan MCubed 2.0 Program.	\$60,000 2015–2017 33% share
71.	Schwank, J., M. Bareau, G. Fisher, P. Adriaens, E. Hill, N. G. Love, R. Clarke, J. Diana, K. Wigginton, D. Scavia, A. Hoffman, S. Miller, A. Huang-Saad, J. Trumpey, L. Raskin, S. Skerfos, A. Todd. REFRESH: Researching Fresh	\$2,998,832 7/1/14 – 6/30/17 1 of 17 co-PIs at 6% share each

- Solutions to the Energy/Water/Food Challenge in Resource-Constrained Environments. University of Michigan Third Century Initiative.
72. Newell, J., N. G. Love and R. Norton. Planning for Technological Innovation: Water, Infrastructure and Sustainability. University of Michigan MCubed program. \$60,000
1/13/13 – 12/31/14
33% share
 73. Kolars, J. D., N. G. Love, S. Fisseha, A. Burton, L. Isom, P. Yadav, J. Godfrey, and K. Sienko. A Proposal to Develop the Ethiopia-Michigan Platform for Advancing Collaborative Engagement (EM-PACE). University of Michigan Third Century Initiative. N. Love co-leads the Environmental Initiative within this program. \$297,800
1/1/14 – 8/31/15
1 of 8 co-PIs at 12% each
 74. Love, N. G., Skerlos, S., and Raskin, L. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. Graham Environmental Sustainability Institute, University of Michigan. \$5,000
1/1/08–8/1/08
34% share
 75. Love, N.G., Muller, J. F., Stevens, A. M. and Hagedorn, C. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. Virginia Water Resources Research Center. \$18,000
7/1/06–6/30/07
25% share
 76. Vikesland, P., Love, N. G. and Knocke, W. R. Construction of the Environmental BioNanoTechnology Laboratory (EB/NL), ASPIRES. \$82,030
7/1/05–6/30/06
33% share
 77. Knowlton, K. F., Love, N. G., and Ogejo, J. A. Fate of endocrine disrupting compounds in dairy manure during storage and treatment. Virginia Water Resources Research Center. \$18,000
7/1/05–6/30/06
33% share
 78. Halleman, E. and Love, N. G. Scale up of water treatment and recovery system at Blue Ridge Aquaculture. Virginia Tech Commercial Fisheries and Shellfish Technologies Program. \$26,569
7/1/01–6/30/02
50% share
 79. Love, N. G., Dietrich, A., Edwards, M., Godrej, A., Grizzard, T., Novak, J. T., Schreiber, M. Acquisition of a gas chromatograph with both mass spectrometer and flame photometric detector in support of water quality research. Virginia Tech ASPIRES program. \$88,340
1/1/01–12/31/01
14% share
 80. Gibson, H. W., Bevan, D. R., Love, N. G. A collaborative effort to establish a research program for developing biomimetic sensors using molecularly imprinted polymers (MIPs). Virginia Tech ASPIRES program. \$50,393
1/1/01–12/31/01
33% share
 81. Widdowson, M., Schreiber, M., and Love, N. G. Evaluating processes that control natural attenuation of nitrate in natural waters. Virginia Water Resources Research Center. \$5,000
7/1/00–6/30/01
33% share
 82. Love, N. G. and Knowlton, K. F. Development of a collaborative effort on environmentally responsible management of dairy wastes. Virginia Tech ASPIRES program plus College and Departmental matching support. \$37,944
1/1/00–5/31/01
50% share
 83. Stevens, A. M. and Love, N. G. Development of a *lux* reporter for the anaerobic human pathogen *Bacteroides*. Virginia Tech Optical Sciences and Engineering Research Center. \$50,000
7/1/00–6/30/01
10% share
 84. Love, N. G. and Brazil, B. L. Performance optimization and economic analysis of a fluidized denitrifying unit for treating aquaculture effluents. Virginia Tech Commercial Fisheries and Shellfish Technologies Program. \$57,456
7/1/99–6/30/01
50% share
 85. Popham, D. L., Brewer, K. J., Esen, A., Love, N. G., Rutherford, C. L., Shirley, S. W., Stevens, A. M., and Walker, R. A. Establishment of a phosphor/fluorescent imaging facility in Derring Hall. Virginia Tech ASPIRES program. \$69,200
1/98–12/99
2% share

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| 86. | Love, N. G. and Stevens, A. M. Development of a collaborative research effort in environmental biotechnology as applied to biological wastewater treatment systems. Virginia Tech ASPIRES program. | \$32,080
1/98–12/99
50% share |
| 87. | Widdowson, M. A., Love, N. G., Novak, J. T., and Berry, D. F. Intrinsic bioremediation of contaminants in groundwater and soil: A strategy for research and partnerships. Virginia Tech ASPIRES program. | \$37,300
4/97–3/98
25% share |
| 88. | Love, N. G. Denitrification of recirculating aquaculture system waters. Virginia Tech Commercial Fisheries and Shellfish Technologies Program. | \$6,000
3/1/95–6/30/96
100% share |
| 89. | Randall, C. W. and Love, N. G. Identification of bacterial groups in biological nutrient removal systems. Virginia CORE Research Program. | \$4,300
7/1/94–6/30/95
50% share |

Institutional/ Educational Support Received – External Programs
(Total Value: \$3.7 million, Share Value: \$1.2 million)

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|-----|---|--|
| 90. | Love, N. G., Thole, K. A. and McCrickard, S. Development and Maintenance of a Portal Website for the NSF Advance Program, National Science Foundation. | \$94,671
9/1/04–8/31/06
12% share |
| 91. | Layne, P., Love, N. G. and Thole, K. A. ADVANCE Engineering Workshop, National Science Foundation. | \$61,381
8/1/04–1/31/05
33% share |
| 92. | McNamee, M., Hyer, P.B, Love, N. G. and Thole, K. A. ADVANCE Institutional Transformation Award for Virginia Tech. NSF. Co-initiated and co-authored proposal. Active participant from 2003-2006. | \$3,460,211
7/1/03–6/30/08
33% share |
| 93. | Oerther, D. and Love, N. G. Workshop to Explore the Value of Applying Molecular Biology Tools in Environmental Engineering, National Science Foundation. | \$21,400
10/1/01–9/30/02
10% share |
| 94. | Love, N. G. Making the Connection Program, Women in Engineering Programs and Advocates Network. | \$5,000
12/1/1999–1/31/2003
100% share |
| 95. | Little, J. C. and Love, N. G. Environmental Engineering: Creation of an electronic textbook. SUCCEED and College of Engineering Green Engineering Program. | \$30,416
1/1/95–5/31/97
50% share |

INVITED SEMINARS AND PRESENTATIONS

- Invited Speaker – My Career Path: Seminar for CWEA-AWWA Student Chapter, California State Polytechnic University, Pomona. November 19, 2020.
- Invited Speaker - Water Infrastructure in Resource-Constrained Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. University of Arizona Department of Chemical and Environmental Engineering. September 21, 2020.
- Invited Speaker: Rethinking America's Urban Water Infrastructure: Resource Efficiency, Access, and Public Health. University of Notre Dame, Civil and Environmental Engineering Challenges and Innovation Seminar Series. Virtual. September 17, 2020.
- Invited Speaker. Water Infrastructure in Resource-Constrained Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. Department of Environmental Engineering, Technical University of Denmark. January 17, 2020.
- American Academy of Environmental Engineers and Scientists Kappe Lecturer

(<https://www.aees.org/kaplectureseries/kaplecturer.php>). 2019-2020. Offered two talks and presented both at most venues. Talk 1: "Rethinking America's Urban Water Infrastructure: Resource Efficiency, Access and Public Health" or Talk 2: "Environmental Engineering and Science Academic Scholarship in Service to Society: Our Role and Responsibility." Seventeen venues were selected among 20 applicants. Most venues involve more than one host school. Host schools include: Carnegie Mellon University and University of Pittsburgh; Clemson University; Georgia Tech; Michigan State University and Wayne State University; North Carolina State University; Old Dominion University; Rice University; University of Houston and University of Texas-Austin; Wilkes University; University of California-Merced; University of Cincinnati; University of Iowa; University of Minnesota; University of Nebraska-Lincoln; University of Rhode Island; University of Tennessee-Knoxville; University of Washington; University of Wisconsin.

6. Invited Keynote Speaker: The Microbiology of Drinking Water Systems in Shrinking and Expanding Resource-Constrained Cities and the Link to Public Health. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 2019.
7. Invited Keynote Speaker: Achieving Resource Efficiency through Urine Separation and Nutrient Recovery: Advancing Hybrid Solutions for a Sustainable Future. Virginia Water Environment Association Education Seminar, May 8-9, 2019, Richmond, VA.
8. Invited Plenary Speaker: Shrinking and Expanding Urban Water Systems in Resource-Constrained Cities: the Link to Public Health. TransCon2019: Understanding and Managing Microbial Transformation of Environmental Contaminants, Monte Verita, Ascona, Switzerland. April 28 to May 3, 2019.
9. Invited speaker: The Microbial Characteristics of Drinking Water in Flint, MI: The Point-of-Use "Lead" Filter Field Study. Texas A&M University Department of Civil Engineering Environmental and Water Resources Seminar Series. March 4, 2019.
10. Invited speaker: Progress with Source Separation and Conversion to Fertilizer. Water Environment Federation Forum 2019: James Barnard Research Conference on Emerging Themes on Biological Phosphorus Removal and Recovery. January 14-15, 2019, Austin, TX.
11. Invited speaker: A Field Study of Microbial Changes Across Activated Carbon Block Point of Use Filters Deployed During the Flint Water Crisis. University of California-Davis. May 22, 2018.
12. Keynote speaker. "Water Infrastructure in Shrinking and Expanding Cities: The Impact on Water Quality and Public Health". Integrity of Creation Conference, The Global Water Crisis, Duquesne University. September 27-28, 2017, Pittsburgh, PA.
13. Invited speaker: Microbiome at the Global Tap: Understanding Microbial Colonization of Point-of-Use Drinking Water Filters. 14th Annual USEPA Drinking Water Workshop: Small Systems Challenges and Solutions, Cincinnati, OH, August 22-24, 2017.
14. Distinguished Lecture. Borchardt and Glysson Collegiate Professorship Induction. "At the interplay of water and health." Borchardt Conference, University of Michigan, February 22, 2017.
15. Distinguished Lecture. "The interplay between chemicals and microbiomes: an environmental biotechnology perspective." Wayne State "Water at Wayne" Lecture Series, Feb 1, 2017.
16. Invited speaker. "Microbiome at the Global Tap: Understanding microbial colonization of point-of-use drinking water filters." Marquette University, January 25, 2017
17. Invited speaker. "A Balancing Act: Achieving Nutrient Recovery via Urine-Derived Fertilizers while Managing Emerging Contaminants." University of Buffalo, November 11, 2016.
18. Distinguished Lecture. "At the Confluence: Nutrients, Trace Chemicals and Sustainability in the Urban Water Sector." Cornell University, October 24, 2016.
19. AEESP Distinguished Lecturer. 2015-2016 academic year. Presented one of two talks: "The Interplay Between Chemicals and Microbiomes: An Environmental Biotechnology Perspective", or "At the



RESOLUTION NO.: 210229
PRESENTED: MAY 19 2021
ADOPTED: _____

RESOLUTION FOR THE APPOINTMENT OF SHAWN P. MCELMURRY TO THE WATER SYSTEM ADVISORY COUNCIL

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.


WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Shawn P. McElmurry to the Water System Advisory Council (See Attached Resume).

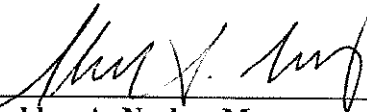
NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Shawn P. McElmurry, address 2153 Engineering Building 5050 Anthony Wayne Drive, Detroit, MI 48202 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:



Angela Wheeler (May 13, 2021 13:09 EDT)

Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:


Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:


Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 05/13/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION APPOINT MEMBERS TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Lottie Ferguson, Chief Resilience Officer
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399.

The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

The names of the individuals who are Mayoral appointed to the Water System Advisory Council are: Dr. Lawrence Reynolds, Shawn P. McElmurry, PhD, and Benjamin Pauli, PhD, Environmental The designated Appointees have either lived or worked within the Flint community during the Flint Water



CITY OF FLINT

BUDGET YEAR 1 \$0

BUDGET YEAR 2 \$0

BUDGET YEAR 3 \$0

OTHER IMPLICATIONS (*i.e., collective bargaining*):

STAFF RECOMMENDATION: (PLEASE SELECT): X ☒ APPROVED ☐ NOT APPROVED

DEPARTMENT HEAD SIGNATURE: Lottie Ferguson, Chief Resilience Officer
(PLEASE TYPE NAME, TITLE)

SHAWN P. MCELMURRY, PhD, PE

2158 Engineering Building
5050 Anthony Wayne Dr
Detroit, MI 48202

Office: (313) 577-3876
E-mail: s.mcelmurry@wayne.edu

EDUCATION

Ph.D. Environmental Engineering, Michigan State University, 2008
Dissertation: *Characterization of Dissolved Organic Carbon: Assessment of Copper Complexation and Export of Carbon from Watersheds as a Function of Land Use*
Co-Advisors: Thomas C. Voice and David T. Long
M.S. Environmental Engineering, Michigan State University, 2002
B.S. Chemistry major, Central Michigan University, 1998

EXPERIENCE

2014-current Associate Professor, Department of Civil & Environmental Engineering, Wayne State University
2008-2014 Assistant Professor, Department of Civil & Environmental Engineering, Wayne State University

RESEARCH PROJECTS IN LAST 5 YEARS (PI listed first, otherwise co-PI unless noted)

2018-2022 McElmurry, S.P.; Seeger, M.; O'Donnovan, K.; Sobeck, J.; Smith, R.; Kilgore, P.; Love, N.G.; Kerkez, B.; MacDonald Gibson, J.A. CRISP 2.0 Type 2: Collaborative Research: Water and Health Infrastructure Resilience and Learning (WHIRL). National Science Foundation. Award #1832692 (\$1,570,000), 9/1/2018-8/31/2022

2020-2021 Harris, A.; Crouch, P.; McElmurry, S.P. Urban Residential Soil Lead Remediation Strategies Project. Erb Family Foundation, subcontract through EcoWorks, Cayuse Award #A17-0555. 1/1/2020-12/31/2021.

2018-2019 Dittrich, T.; Allen, M.; Boukhalfa, H.; Migdissov, A.; Mohanty, S.; McElmurry, S.P. AOI 2 Coupled Hydrothermal Extraction and Ligand-Associated Organosilica Media Recovery of REEs from Coal Fly Ash. U.S. Department of Energy. Award #DE-FE0031565 (\$538,849 total)

2017-2019 Harris, A.; Crouch, P.; McElmurry, S.P. Urban Residential Soil Lead Remediation Strategies Project. Erb Family Foundation, subcontract through EcoWorks, Cayuse Award #A17-0555. 6/1/2017-12/31/2019. (subcontract \$64,646)

2016-2017 McElmurry, S.P.; Kilgore, P.; Sobeck, J.; Seeger, M.; Zervos, M.; Sullivan, L. (+17 other investigators); Flint Area Community Health and Environment Partnership (FACHEP) – PHASE II State of Michigan, Contract #20163753-00. 6/1/2016-12/21/2017 (\$3,350,000 total)

2016-2017 McElmurry, S.P. RAPID: Chemical treatment efficiency of point-of-use filters deployed in Flint, Michigan National Science Foundation, Award #1633013 (\$49,992 total)

2016-2018 McElmurry, S.P.; Miller, C.J.; Pitts, D.K.; Sackey, D.J.; Seeger, M.; Masten, S.J.; Hanna-Attisha, M. Rapid Response to Contaminants in Flint Drinking Water. National Institute of Health; National Institute of Environmental Health Sciences. Award # 1R21ES027199-01 (\$422,110 total)

2016 McElmurry, S.P.; Kilgore, P. Seeger, M.; Zervos, M.; Sullivan, L. Flint Area Community Health and Environment Partnership (FACHEP) – PHASE I State of Michigan (\$123,091 total)

2015-2018 Nassauer, J., McElmurry, S.P., Sampson, J., Webster, J., Dewar, M., Alvarez, A., Schulz, A., Burton, A., Riseng, C. Providing support for watershed based policy and management decisions: Lake Erie and City of Detroit. Erb Family Foundation, subcontract through The University of Michigan (\$1,116,999 total; 82,392 subcontract)

2015-2018 Zhang, Y., Zhou, K., Lemke, L., McElmurry, S.P. (senior personnel) An Integrated Approach to Ensuring Food Safety and Sustainability in Urban Agriculture in the Greater Detroit Area US Department of Agriculture, grant # 2015-70001-23424 (\$272,532 total)

2015-2016 Zhang, Y., Lemke, L., Zhou, K., McElmurry, S.P. Heavy metals and the development of antibiotic resistance in urban agriculture. Center for Urban Responses to Environmental Stressors (CURES) Pilot Project funded through National Institute of Health Grant P30 ES020957 (\$80,000 total)

- 2015 Miller, C., Zhang, Y., **McElmurry, S.**, Lemke, L., Pothukuchi, K. *A Workshop for Integrative and Sustainable Food, Energy, and Water in Transitioning Urban Landscapes*. National Science Foundation, CBET Award # 1541869 (\$28,840 total)
- 2014-2016 Caruso, J.A.; **McElmurry, S.P.**; Moldenhauer, J.; Reynolds, R.; Sackey, D.; Schroeck, N; Stemmer, P; Westrick, J.; Zhang, K; Giblin, F. *Petcoke in an urban environment: A community-based participatory model*. Center for Urban Responses to Environmental Stressors (CURES) Pilot Project funded through National Institute of Health Grant P30 ES020957 (\$150,000 total)

AWARDS, CERTIFICATES, HONORS, and LICENSURE

- 2014, 2015 *Outstanding Reviewer Award*, Journal of Environmental Engineering, American Society of Civil Engineers
- 2013 *2013 ExCEED New Faculty Excellence in Teaching Award*, American Society of Civil Engineering
- 2012 *Outstanding Faculty Service Award*, Engineering Student and Faculty Board, College of Engineering, Wayne State University
- 2012 *Favorite Professor Award*, Wayne State University
- 2010, 2011 *Assistant Mentor ASCE ExCEED Teaching Workshop*–American Society of Civil Engineering (ASCE) – U.S. Military Academy, West Point, NY
- 2010 *Michigan Professional Engineering License* (#6201057641, date issued 09/24/2010)
- 2009 *ExCEED Fellow* –American Society of Civil Engineering (ASCE)

PEER REVIEWED PUBLICATIONS FROM LAST 5 YEARS

*corresponding author, §graduate student, †undergraduate student

- [48] §Alla, L.N.R.; §Monshi, M.; §Siddiqua, Z.; §Shields, J.; §Alame, K.; §Wahls, A.; §Akemann, C.; §Meyer, D.; §Crofts, E.J.; §Saad, F.; §El-Nachef, J.; §Antoon, M.; §Nakhle, R.; §Hijazi, N.; §Hamid, M.; §Gurdziel, K.; **McElmurry, S.P.**; Kashian, D.R.; Baker, T.R.; *Pitt, D.K. (2021) *Detection of endocrine disrupting chemicals in Danio rerio and Daphnia pulex: Step-one, behavioral screen*. Chemosphere, 271, p.129442. DOI:10.1016/j.chemosphere.2020.129442
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- [45] *Sobeck, J.; Smith-Darden, J.; Hicks, M.; Kernsmith, P.; Kilgore, P.E.; Treemore-Spears, L.; **McElmurry, S.P.** (2020) *Stress, Coping, Resilience and Trust during the Flint Water Crisis*. Behavioral Medicine. 46(3-4) DOI: 10.1080/08964289.2020.1729085 (PMID: 32787730)
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- [41] *§Day, A.M.; §O'Shay-Wallace, S.; Seeger, M.W.; **McElmurry, S.P.** (2019) *Informational Sources, Social Media Use, and Race in Flint, Michigan's Water Crisis*. Communication studies. DOI: 10.1080/10510974.2019.1567566 (NIHMS ID: 1518397)
- [40] Zahrán, S.; Iverson, T.; **McElmurry, S.P.**; Weiler, S., & Levitt, R. (2019). *Hidden Costs of Blight and Arson in Detroit: Evidence From a Natural Experiment in Devil's Night*. Ecological Economics, 157, 266-277. DOI: 10.1016/j.ecolecon.2018.11.009
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- [34] [§]Pathirathna, P., [§]Siriwardhane, T., **McElmurry, S.P.**, Morgan, S.L., *Hashemi, P. (2016) *Fast voltammetry of metals at carbon-fiber microelectrodes: towards an online speciation sensor*. Analyst. 141, 6432 – 6437 DOI: [10.1039/C6AN01807F](https://doi.org/10.1039/C6AN01807F)
- [33] [§]Siriwardhane, T., [†]Sulkanen, A., [§]Pathirathna, P., [§]Tremonti, A., **McElmurry, S.P.**, *Hashemi, P. (2016) *Voltammetric Characterization of Cu(II) Complexation in Real Time*. Analytical Chemistry. 88 (15), 7603–7608. DOI: [10.1021/acs.analchem.6b01312](https://doi.org/10.1021/acs.analchem.6b01312)
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- [31] Song, L. Li, L.; Yang, S.; Lan, J.; He, H.; **McElmurry, S.P.**; Zhao, Y. *Sulfamethoxazole, Tetracycline and Oxytetracycline and Related Antibiotic Resistance Genes in a Large-scale Landfill, China*. (2016) Science of the Total Environment, 551, 9-15. DOI: [10.1016/j.scitotenv.2016.02.007](https://doi.org/10.1016/j.scitotenv.2016.02.007)
- [30] Chambers, L.G.; Chin, Y.-P.; Filippelli, G.M.; Gardner, C.B.; Herndon, E.M.; Long, D.T.; Lyons, W.B.; Macpherson, G.L.; **McElmurry, S.P.**; McLean, C.E.; Moore, J.; Moyer, R.P.; Nezat, C.A.; Soderberg, K.; Teutsch, N.; Widom, E. (2016) *Developing the scientific framework for urban geochemistry*. Applied Geochemistry. 67,1-20 DOI: [10.1016/j.apgeochem.2016.01.005](https://doi.org/10.1016/j.apgeochem.2016.01.005)
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- [23] [§]Abkenar, S.M.S., [§]Stanely, S.D., Chase, D.V., Miller, C.J., **McElmurry, S.P.** (2015) *Evaluation of genetic algorithms using discrete and continuous methods for pump optimization of water distribution systems*. Sustainable Computing: Informatics and Systems. 8, 18-23. DOI: [10.1016/j.suscom.2014.09.003](https://doi.org/10.1016/j.suscom.2014.09.003)
- [22] [§]Rogers, M.M., [§]Xu, G., *Miller, C.J., **McElmurry, S.P.**, Shi, W., [§]Wang, Y., Miller, S.S., Wang, C., [§]Xu, C.Z. (2015) *HERO: A Smart-Phone Application for Location Based Emissions Estimates*. Sustainable Computing: Informatics and Systems. 8, 3-7. DOI: [10.1016/j.suscom.2014.09.001](https://doi.org/10.1016/j.suscom.2014.09.001)

For complete list go to: <https://scholar.google.com/citations?user=vtHjmu8AAAAI&hl=en>

OTHER ACADEMIC OUTPUT AND UNIVERSITY SERVICE (select, last 5 years)

- Love, N.G.; Jackson, R.; **McElmurry, S.P.** (2019) Water stays in the pipes longer in shrinking cities – a challenge for public health. The Conversation. 24 May 2019. <https://theconversation.com/water-stays-in-the-pipes-longer-in-shrinking-cities-a-challenge-for-public-health-116119>
- Love, N.G., Gebrie, G.S., Adejumo, H.A., **McElmurry, S.P.** (2019) Drinking Water Infrastructure in Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. In G. Magil and J. Benedict (Eds) Cascading Challenges in the Global Water Crisis. Chapter Three (p. 23-39), Cambridge Scholars Publishing, ISBN: 978-1-5275-2447-7
- Zarb, A.R., **McElmurry, S.P.**, Moldenhauer, J.A. (2017) *Technical to Teachable: The Flint Water Crisis and the Design of Instructions for Assembling Water Sampling Kits*. In Design, User Experience, and Usability: Theory, Methodology, and Management, Springer.

- Zahran, S., Laidlaw, M.A.S., McElmurry, S.P., Filippelli, G.M., Taylor, M. (2015) Linking Source and Effect: Re-suspended Soil Lead, Air Lead, and Children's Blood Lead Levels in Detroit, Michigan. In A. Hassan (Ed) *Everyday Environmental Toxins: Children's Exposure Risks* (p. 163-181). Apple Academic Press: Waretown, NJ. ISBN: 978-1-77188-101-2
- US EPA Workshop titled Michigan Water, Public Health and Healthcare Coordination Workshop, 9/16/2019, Wayne State University, Detroit, MI (Organizer and presenter)
- US EPA Webinar titled A Critical Connection: The Water and Healthcare/Public Health Sectors Webinar - Healthcare/Public Health Sector Focus, 9/26/2019 (Presenter)
- US EPA Webinar titled A Critical Connection: The Water and Healthcare/Public Health Sectors Webinar - Water Sector Focus, 9/19/2019 (Presenter)

TEACHING AND ADVISING

Undergraduate Courses

- CE4210 – Introduction to Environmental Engineering (2014, 2015)
- CE4140 – Environmental Engineering Design (2017, 2018, 2019, 2020)
- CE5220 – Environmental Chemistry (2014, 2016)
- CE5230 – Water Supply and Wastewater Engineering (2017, 2019, 2021)
- CE5995 – Special Topics: Advanced Drinking Water Treatment (2016, 2019)

Graduate Courses

- CE 6150 – Hydrologic Analysis and Design (2015, 2018, 2020)
- PSC/CE6910 – Waste Pharmaceuticals: Environmental Impact and Management (2015)
- CE7260 – Surface Water Quality Modeling (2015)
- CE7580 – Environmental Remediation (2016)
- CE7995 – Special Topics: Advanced Drinking Water Treatment (2016, 2019)

Committee Chair of 4 Ph.D. and 4 M.S. Thesis Students

Committee Member of 15 Ph.D. and 4 M.S. Thesis Students

OTHER SERVICE

Committee Assignments

- Michigan State University Department of Civil and Environmental Engineering Professional Advisory Board (2016-current)
- Graduate Program Officer, Department Civil & Environmental Engineering (2014-2016, 2020-current)
- College of Engineering P&T Committee (2016-2019)
- Wayne State University Water Safety Committee (2018-current)
- Technical Advisory Committee, Flint, MI (2015-current)
- Great Lakes Science Advisory Board's Taking Action on Lake Erie (TAcLE) work group (2012-2013). Work resulted in the following report:

Lake Erie Ecosystem Priority | Scientific Findings and Policy: Recommendations to Reduce Nutrient Loadings and Harmful Algal Bloom, Draft Summary Report, August 2013. International Joint Commission.
 Available at: <http://www.ijc.org/files/tinymce/uploaded/Draft%20LEEP-Aug29Final.pdf>

Public Presentations as an Expert in Discipline

- Featured in "Flint's Deadly Water" produced by FRONTLINE, SEASON 2019: EPISODE 16; premiered September 10, 2019 on PBS. Available at <https://www.pbs.org/wgbh/frontline/film/flints-deadly-water>.
- 67TH DISTRICT COURT FOR THE COUNTY OF GENESEE. THE PEOPLE OF THE STATE OF MICHIGAN v. NICHOLAS LYON (Nov. 15, Dec. 1, 2017)
- 67TH DISTRICT COURT FOR THE COUNTY OF GENESEE. THE PEOPLE OF THE STATE OF MICHIGAN v. EDEN WELLS (Dec. 11, 12, 2017)
- Featured technical expert on *Secrets of the Earth: Mother Nature Reclaims Buildings*, a TV show that premiered on the Weather Channel on October 27, 2014
- WJBK-TV Health Works, My Fox Detroit. Interviewed regarding Pb research (~133,000 viewers), Aired June 14, 2013 <http://www.myfoxdetroit.com/video?autoStart=true&topVideoCatNo=default&clipId=8991514>
- WDET-Radio Interview discussing resuspension of Pb, Aired March 19, 2013

Proposal Review Panels

- National Institute of Environmental Health Sciences – Special Emphasis Panel
- National Institute of Environmental Health Sciences – Research to Action: Assessing and Addressing Community Exposures to Environmental Contaminants
- National Institute of Health - Social Sciences and Population Studies Study Section

- National Science Foundation - Civil, Mechanical and Manufacturing Innovation
- National Science Foundation – Chemical, Bioengineering, Environmental, and Transport Systems
- National Science Foundation - Geography and Spatial Sciences

Editorial Board Memberships

- *Toxics* (ISSN 2305-63040; Impact Factor = 3.271)

Reviewer

- *Applied Geochemistry*
- *Aquatic Geochemistry*
- *Chemosphere*
- *Desalination Water Treatment*
- *Elementa: Science of the Anthropocene*
- *Environmental Geochemistry & Health*
- *Environmental Research*
- *Environmental Science & Technology*
- *Environmental Science & Technology Letters*
- *Environmental Science: Processes & Impacts*
- *Environmental Science: Water Research & Technology*
- *Geohealth*
- *International Journal of Distributed Sensor Networks*
- *Journal of Environmental Engineering*
- *Journal of Environmental Pollution*
- *Journal of Exposure Science and Environmental Epidemiology*
- *Journal of Health and Place*
- *Landscape Architecture*
- *Photogrammetric Engineering and Remote Sensing*
- *Proceedings of the National Academy of Sciences*
- *Science of the Total Environment*
- *Sustainable Chemistry*
- *Toxics*
- *Water Science and Technology: Water Supply*



210395

RESOLUTION NO.: _____

PRESENTED: AUG 18 2021

ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT JARON HOUSTON TO THE WATER SYSTEM
ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.

WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Jaron Houston to the Water System Advisory Council (See Attached Resume).

NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Jaron Houston address 2621 E. Court Street, Flint MI 48503 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:

Angela Wheeler
Angela Wheeler (Aug 12, 2021 09:51 EDT)

Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:

Sheldon A. Neeley

Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 08/11/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION TO APPOINT JARON HOUSTON TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Qiana Towns-Williams, Manager of Public Health
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399.

The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

Jaron Houston, the designated appointee, is a current resident of Flint and has expressed interest and knowledge concerning lead in drinking water. Appointee's resume is attached.

CITY OF FLINT



CITY OF FLINT

(PLEASE TYPE NAME, TITLE)

Jaron Maurice Houston

2621 E Court St 810-449-4175
Flint, Michigan 48503 jaron.houston@gmail.com

Summary of Qualifications

Over 17 years of experience in education and customer service, engaging in community involvement and building rapport with families.

Work Experience

Genesee Intermediate School District

Flint, MI

Early On Service Coordinator/21st Century Team Leader

01/2018 – 3/2021

- Completed intake appointments for parents and children
- Completed assessments on children concerning their development
- Worked with parents on reaching developmental milestones
- Created lessons plans/activities for students
- Facilitated afterschool programming
- Administered medication to students if needed
- Provided support for youth and their families as we promote success

Baker College of Flint

Flint, MI

Academic Advisor

08/2016 – 10/2017

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation
- Provided students with information on such topics as college degree programs

Big Brothers Big Sisters of Greater Flint

Flint, MI

Case Manager

04/2014 – 8/2016

- Provides facilitation and delivery of all programs design components of program
- Recruit mentors to assist in encouraging and empowering juvenile offenders
- Provides support for youth and their families as we promote success

Human Investment and Development Corporation

Flint, MI

Case Manager

06/2013 - 09/2013

- Maintained documentation of compliance activities
- Filed appropriate compliance reports with regulatory agencies
- Conducted or directed the internal investigation of compliance issues

Baker College

Flint, MI

Academic Advisor

01/2011 - 6/2013

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation
- Provided students with information on such topics as college degree programs

Davenport University

Flint, MI

Advisor

05/2010 - 01/2011

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation.
- Referred students to degree programs based on interests and aptitudes

Baker College

Student Mentor/Academic Advisor

Flint, MI

07/2002-05/2010

- Counseled students to help them understand their educational/vocational situations
- Referred students to degree programs based on interests and aptitudes
- Promoted extracurricular activities such as clubs and student organizations

Education

Southwestern College

Masters in Leadership

Wichita, KS

01/2009 - 08/2011

Baker College

Bachelors of Business Administration

Bachelors of Education

Flint, MI

09/2001 - 06/2010



210396

RESOLUTION NO.: _____

PRESENTED: AUG 18 2021

ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT GINA SMITH TO THE WATER SYSTEM
ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.

WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects.;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded.; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Gina Smith to the Water System Advisory Council (See Attached Resume).

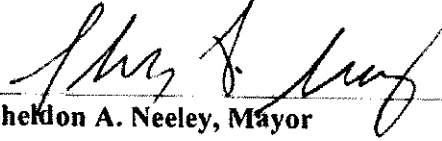
NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Gina Smith, address 210 W. Flint Park Blvd Flint, MI 48505 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:



Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 08/11/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION TO APPOINT GINA SMITH TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Qiana Towns-Williams, Manager of Public Health
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399. The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

Gina Smith, the designated appointee, is a current resident of Flint and has expressed interest and knowledge concerning lead in drinking water. Appointee's resume is attached.



CITY OF FLINT

(PLEASE TYPE NAME, TITLE)

GINA M. SMITH, MPH

210 West Flint Park Blvd.

Flint, MI 48505

Tel: +1 810 394 1996; Email: gjenkins.mph@gmail.com

Mrs. Smith seeks to reduce global health burden by increasing access to quality health care services, products and information in challenging settings. She is an experienced executive with over a decade of leadership in HIV/AIDS, reproductive health and maternal & child health projects management in Sub-Saharan Africa. She has a background in international health care settings, strategic development, business operations, and developing evidence based behavior change communication/marketing materials. In addition, she is a leader in change management, upholding internal controls and executing processes that achieve sustainable performance improvements with extensive experience with donor funds. Through demonstrated skills working with stakeholders she has been an influencer in her field leading to proven high impact results.

- | | | | |
|-------------------------|--------------------------|---------------------|-----------------------|
| •Strategic thinking | •Team leadership | •People management | •Entrepreneurship |
| •Leading change | •Results driven | •Problem solving | •Proposal development |
| •Compliance enforcement | •Supply chain management | •Program management | |

Population Services International, Washington DC, USA

Nov 2006-Present

Senior Program & Supply Chain Manager

(March 2021-Present)

Lead headquarter support for technical, operational, financial and administrative close out of a Global Fund malaria and a Global Fund HIV/TB project in Haiti as well as Haiti office close-out. Provide supervision of international consultants and remote supervision of the Haiti office Supply Chain Management team. Coordinate communications between Haiti team and PSI/Washington departments as relevant to the Global Operations (GAC) & Global Fund projects program support.

Acting Country Representative/Chief of Party-SARAI, Society for Family Health (SFH), Zambia

(July 2019-Feb 2021)

Provide organizational oversight of country office of ~110 employees, implement organizational vision in a continuously changing environment; Retention of high quality staff; Ensure compliance of internal controls and donor rules and regulations; Lead in proposal development and fundraising, manage government, donor and private sector relations; Oversee project implementation

Notable Achievements:

- Successful office closeout of SFH Zambia
- Surpassed USAID Sexual and Reproductive Health for All Initiative (SARAI) target to increase annual mCPR by 2%, achieving 4-6% annually.
- Successful closeout of \$5m UNITAID HIV Self-Testing Africa project with distribution of over 550,000 HIVST
- Authored two abstracts accepted to international conference ICASA 2019
- Surpassed targets for U.S. Department of Defense (DOD) for Voluntary Medical Male Circumcision (VMMC) project

Deputy Country Representative/Chief of Party-SARAI, SFH Zambia (June 2015-June 2019)

Provide oversight to human resources, administrative, operations and program teams; Develop and manage annual workplans and multiple donor budgets; Participate in board meetings; Develop and maintain relations with local authorities and implementing organizations; Manage multiple international implementing partnerships and subaward partners; Participate, and when necessary, lead program design, implementation and evaluation; Assist Country Representative in oversight of office operations

Notable Achievements:

- Facilitated the development and review of SFH Zambia strategic plans
- Increased VMMC uptake of target population using Human Centered Design approach
- Secured additional funding for USAID award Sexual and Reproductive Health for All Initiative (SARAI) increasing budget from \$11million to \$15.25 million
- Appointed as Key personnel position Chief of Party-SARAI in March 2018 by USAID
- Assisted Zambia Ministry of Health in developing and implementation of national roadmap for DMPA-SC
- Assisted South Sudan Ministry of Health with Global fund malaria grant proposal as primary beneficiary

Senior Program Manager, PSI- Washington DC (Jan 2014-June 2015)

Assume direct responsibility for the management support provided to Mali, Niger, Burkina Faso, Cote d'Ivoire and Togo country programs in the West and Central Africa Department; Advise Regional Director, Deputy Regional Director on strategic country issues; Mentor other program managers; Prepare donor budgets and monitor their implementation; Building, maintaining, or strengthening donor relations; Monitor contract compliance and adherence to internal and external reporting requirements; Provide technical assistance travel and proposal development, identifying new capture opportunities, program design, capacity building to achieve programmatic objectives.

Notable Achievements:

- Assisted in securing \$90 million follow-on grant under the Global Fund AIDS, Tuberculosis and Malaria for as principle recipient for Malaria under Zero Cash Policy conditions for Mali
- Led development design of New Funding Model, Modular Framework, for the Global Fund AIDS, Tuberculosis and Malaria with Mali used as a pilot country
- HQ Focal point for USAID Procurement and Supply Chain Management contract with JSI for mass and routine LLIN campaigns in Mali including storage and distribution
- Supervised and mentored a team composed of two Associate Program Managers and a Financial Analyst
- Assisted in development of winning proposal for largest USAID WASH project, Sanitation

Service Delivery, \$15.8m, implemented in Cote d'Ivoire, Ghana and Benin

Operations Technical Advisor, Mali (Feb 2011-Jan 2014)

Maintain operational standards and supervise finance, administration and IT for a staff of 89 employees in Mali while ensuring donor compliance and sustainability; Assist Country Representative in strategic planning initiatives and implementation of project objectives, Advise, Train, support, mentor staff and local partner organizations; Assist Country Representative in management of external relations and fundraising efforts with donors, governments, international and local NGOs, and commercial entities

Notable Achievements:

- *Implemented \$90 million malaria grant under the Global Fund AIDS, Tuberculosis and Malaria for as principle recipient under Zero Cash Policy conditions for the procuring, storage and distribution of LLINs, ACTs and RDTs.*
- *Provided technical assistance in areas of budgeting, monitoring of program expenditures and overall project management based on an annual budget of \$30 million for social marketing of health products and services*
- *Lead the strategic planning process and monitoring of performance*

Program Manager & Associate Program Manager- West and Central Africa, Washington, DC

Nov 2006 – Feb 2011

Advised country program teams on institutional development, strategic planning, budget tracking, contract compliance, systems strengthening, proposal development, fundraising, security, donor reporting and administrative oversight; Assisted in program management of integrated social marketing programs for HIV/AIDS, reproductive health and maternal & child health in Burkina Faso, Democratic Republic of Congo, Mali, Cameroon, C.A.R, Haiti, Rwanda and Burundi with combined annual budgets exceeding \$50 million.

Notable Achievements:

- *Supervised two associate program managers and one financial analyst*
- *Assisted Regional Director in Country Annual Operating Budgeting process for region*
- *Promoted to Program Manager in May 2008*
- *Selected as lead country grant writer for Mali and Cameroon Global Fund malaria proposal*
- *Conducted minimum standards assessments and strategic plan development*
- *Train Francophone countries on use of Disability adjusted life years (DALYs) to measure health impact*

Peace Corps-Master's International Program

Sept 2003 – Oct 2006

BCC Assistant/Rural Health Program Coordinator PSI-Togo (Jan 2005 – Oct 2006)

Served as a liaison between Peace Corps Volunteers in Togo and PSI to increase public-private collaboration and BCC outreach; Assisted in the project implementation, monitoring deliverables and evaluation of health interventions nationwide; Assisted CR in preparation of donor reports, annual reports, quarterly audits and project propositions; and execution of presentations; and monitoring and evaluation

Notable Achievements:

- *Assisted in the development and adaptation of educational materials for behavior change communication & marketing*
- *Managed Global Fund HIV/AIDS rural prevention program, supervising activities of three NGO's subcontracted to manage 2,975 trained community health workers covering 595 villages*
- *Published monthly Peace Corps Volunteer newsletter*

Community Health & AIDS Prevention Educator, Togo (Sept 2003 – Jan 2005)

Work at grassroots level to respond to the HIV epidemic and supporting the healthy and positive development of the host country with a focus on building youth friendly health services and reducing stigma and discrimination at the community level in order to improve access and retention for HIV care and treatment services. Assist youth in schools and across their communities, improving sexual and reproductive health education, economic and nutritional resilience, and adoption of healthy lifestyles.

Notable Achievements

- *Created and trained 6 in-school youth clubs and provided technical assistance in HIV/AIDS prevention, reproductive health and life skills*
- *Provided technical assistance and support to Peace Corps Volunteers and community based organizations*
- *Assisted host government health agents with public mobilization, child vaccination campaigns, infant growth monitoring, health sensitizations and home visits*

Tulane University School of Public Health & Tropical Medicine

Jan 2003 – Aug 2003

Epidemiology Researcher, Delgado STD Clinic, New Orleans, LA

Recruited male urethritis partner treatment study participants; collected and analyzed data; and advised patients on STD prevention/treatment

EDUCATION

MPH, Master's International Student Program, Tulane University School of Public Health & Tropical Medicine, New Orleans, LA.

B.S., Anthropology-Zoology, University of Michigan, Ann Arbor, MI

ADDITIONAL TRAINING

USAID Proposal Writing: From RFA to Proposal Workshop, Inside NGO, Bangkok, Thailand, 2016.

Competing for USAID Contracts in 2007, Center for Public Management, Washington, DC, 2007

USAID Administrative Compliance Requirements, Center for Public Management, Washington, DC, 2007

LANGUAGES

English (native SS/SR), French (fluent 4S/4R)



210398

RESOLUTION NO.: _____

PRESENTED: AUG 18 2021

ADOPTED: _____

**RESOLUTION APPROVING THE APPOINTMENT OF ROBERT WIDIGAN AS
CHIEF FINANCIAL OFFICER**

BY THE MAYOR:


Pursuant to Flint City Charter Section 4-203(D), the Mayor of the City of Flint hereby appoints Robert Widigan as the Chief Financial Officer.

WHEREAS, the Chief Financial Officer shall be paid a salary based on an annual compensation rate of One-Hundred and Thirty-Five Thousand Dollars (\$135,000.00/\$64.90 hourly rate) (\$91,967.90) paid from account 101-191.100-703.000 Wages and Salaries and (\$43,032.10) paid from 296-172.100-703.000 (LCSM-17-FRTA), with the difference in compensation between the Interim Chief Financial Officer and Chief Financial Officer retroactive to August 16, 2021. The terms of appointment and resume are attached.

WHEREAS, Mayor Sheldon Neeley recommends that Robert Widigan be appointed as the Chief Financial Officer.

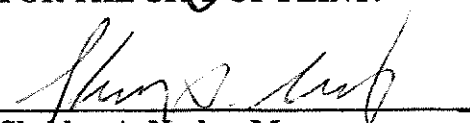
NOW THEREFORE BE IT RESOLVED that the Flint City Council approves the recommendation by Mayor Sheldon Neeley to appoint Robert Widigan as the Chief Financial Officer.

APPROVED AS TO FORM:



Angela Wheeler, Chief Legal Officer

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED AS TO FINANCE:


Shelbi Frayer (Aug 5, 2021 10:04 EDT)

Shelbi Frayer, Chief Financial Officer

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 8.3.2021

BID/PROPOSAL# N/A

AGENDA ITEM TITLE: Resolution Approving Robert Widigan Appointment to Chief Financial Officer

PREPARED BY

City of Flint Legal Department

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

Resolution authorizing the appointment of Robert Widigan as Chief Financial Officer. Mr. Widigan will be paid a salary based on an annual compensation rate of One-Hundred and Thirty-Five Thousand Dollars (\$135,000.00/\$64.90 hourly rate) and paid from account 101-191.100-703.000

FINANCIAL IMPLICATIONS: Payment shall be drawn from appropriated funds in and line item 101-191.100-703.000 (\$91,967.90) Wages and Salaries and account 296-172.100-703.000 (LCSM-17-FRTA) (\$43,032.10)

BUDGETED EXPENDITURE? YES ☒ NO ☐ IF NO, PLEASE EXPLAIN:

WILL YOUR DEPARTMENT NEED A CONTRACT? YES ☐ NO ☒

STAFF RECOMMENDATION: (PLEASE SELECT): ☒ **APPROVED** ☐ **NOT APPROVED**

DEPARTMENT HEAD SIGNATURE:

(PLEASE TYPE NAME, TITLE)

ROBERT J.F. WIDIGAN

310 N. Cedar St., Apt. 411 | Lansing, MI 48912 | 810.569.8296
rwidigan@gmail.com | www.robertwidigan.com

Experienced professional with a proven track record of success working in local and state government. I am looking for the opportunity to build lasting relationships and help the City of Flint move forward towards further success. Over the past 12 years, my work in local and state government has resulted in a deep understanding of the critical financial and operational issues facing local governments and how communities work and interact with each other.

SUMMARY OF PROFESSIONAL EXPERIENCE

- » Manages the fiscal operations of the City of Lansing including accounting, purchasing, budget preparation and monitoring, investment and debt management, reporting and audit compliance, financial projections and analysis, fringe benefits, and retirement funds
- » Serves as the City of Lansing's chief spokesperson regarding City finances and City policy to the City Council and other local community officials
- » Prepare financial forecasts, budgetary assessments, and fiscal policy recommendations
- » Oversees the financial management and planning and acts as the Mayor's representative in various arenas for the City
- » Develops or acquires financial systems for the City to ensure that fiscal management of the City's resources is accomplished in the most cost-effective, efficient manner, consistent with legal and regulating requirements
- » Seasoned municipal administrative professional, experienced in tasks necessary for local governments, served as the chief executive for Shelby, MI
- » Extensive experience working in local, regional, and state government with a focus on administrative, communications, community outreach, municipal finance, and operational functions
- » Oversaw day to day operations of local government
- » Experience leading 15 plus individuals
- » Experience building diverse and sustainable communities throughout Michigan
- » Development of public policies and local ordinances
- » Review and evaluate complex municipal government budgets, cash flows, and other financial reports
- » Recommends alternative strategies and financial and operational structuring to maximize allocated budget resources for municipal government
- » Formally responsible for analyzing trends, compiling local government data, and preparing reports for long-range strategic planning and recommendations for state support directly to local governments at the Michigan Department of Treasury (Treasury)
- » Experience managing multiple complex projects from conception to completion
- » Ability to adapt to diverse and ever-changing work conditions
- » Excellent team player and ability to work independently
- » Served as the communications and social media liaison for the Bureau of Local Government and School Services within Treasury where I developed and maintained daily social content strategies, promoting statewide Treasury news
- » Experience fostering strong community relations

WORK EXPERIENCE

- | | |
|---|-----------------------|
| Finance Director , City of Lansing, Ingham County, MI | Aug. 2020 – Present |
| Village Manager , Village of Shelby, Oceana County, MI | June 2018 – Aug. 2020 |
| Departmental Analyst , Bureau of Local Government and School Services, Michigan Department of Treasury | June 2014 – June 2018 |
| Co-Chair , Clayton Township Planning Commission, Charter Township of Clayton | May 2015 – June 2018 |
| Treasurer , Genesee County Planning Commission Metropolitan Alliance, Charter Township of Clayton | Jan. 2013 – June 2018 |
| » Jan. 2013 to Mar. 2017 served as Trustee; part-time | |
| President and Police Commissioner , Village of Lennon, Lennon, Michigan | Sep. 2009 – Feb. 2017 |
| » Sep. 2009 to Nov. 2016 served as Councilman for the Village | |
| Intern , Office of Fiscal Responsibility, Michigan Department of Treasury | Jan. 2014 – May 2014 |

VOLUNTEER EXPERIENCE

- | | |
|--|-----------------------|
| Shelby Optimist Club Member , Optimist International | Nov. 2018 – Present |
| Vice-President , Oceana County Economic Alliance, 501(c)(3) | Jan. 2019 – Aug. 2020 |
| Shelby Rotary Club Member , Rotary International | July 2018 – Aug. 2020 |
| Founding Member , Shelby Roars, Shelby, Michigan | Aug. 2018 – Aug. 2020 |

EDUCATION

- | | |
|---|------------------------|
| Bachelor of Business Administration (BBA) , University of Michigan – Flint, School of Management | Feb. 2012 – May 2014 |
| » Concentration in Accounting , GPA of 3.19 | |
| » Beta Alpha Psi , International Honor Organization for Financial Information Students and Professionals | |
| Business Transfer , Mott Community College, Flint, Michigan | Sept. 2008 - Apr. 2012 |

HARD SKILLS

- » BS&A and OneSolution
- » Budget Development and Implementation
- » Budgetary Assessments
- » Community Marketing
- » Economic Development
- » Fiscal policy recommendations
- » Microsoft Office Suites and Google Apps
- » Policy and Ordinance Development
- » Project Management

SOFT SKILLS

- » Adaptable
- » Attention to Detail
- » Collaboration
- » Community Outreach and Communication
- » Effective Communication
- » Problem Solving
- » Punctuality
- » Self-Management
- » Time Management

ROBERT WIDIGAN TERMS OF APPOINTMENT

The Mayor of the City of Flint hereby appoints **Robert Widigan** as Chief Financial Officer in accordance with the provisions of Flint City Charter §§4-203(D) & 1-501.

1. **Scope of Services:** Under the general supervision of the Mayor and City Administrator, the Chief Financial Officer duties shall include those enumerated for the Chief Financial Officer in the Flint City Code of Ordinances, Chapter 2, Article XV, Department of Finance, the Chief Financial Officer Job Description and other duties that shall from time-to-time be required, in the absolute discretion of the Mayor, or his designee and; she shall be subject to all work rules and policies established by the City of Flint.

2. **Term of Appointment:** This appointment shall commence on April 15, 2021, 2021 and shall continue at the will of the Mayor.

3. **Compensation:** The Chief Financial Officer shall be paid a salary based on an annual compensation rate of One-Hundred and Forty-Eight Thousand Dollars (\$135,000.00/\$64.90 hourly rate). This salary shall be payable in regular timely installments, in the same manner as other employees of the City of Flint are paid. Such earnings shall be paid from account 101-191.100-703.000 (\$91,967.90), Wages & Salaries and account 296-172.100-703.000 (LCSM-17-FRTA) (\$43,032.10) with the difference in compensation between the Interim Chief Financial Officer and Chief Financial Officer made retroactive to August 16, 2021. The funding from the Mott Capacity Grant is contingent upon the availability of the funding. In the event, that the funding from the Mott Capacity Grant is no longer available, the salary will be reduced to \$91,967.10 unless other funding sources subsequently supplement the \$43,032.10.

4. **Benefits:** The Chief Financial Officer will be provided with fringe equal to those now or hereinafter provided for an exempt employee allocated above Level 23 including, but not limited to health care coverage, dental insurance, life insurance, personal time off, holiday pay, etc.; but expressly excluding membership in the Civil Service System. However, the Chief Financial Officer shall be eligible to participate in the City of Flint Hybrid Pension Plan as provided to other appointed officials, which may change from time-to-time. The Chief Financial Officer shall be 100% vested at all times, with respect to his own contributions.

For the purposes of providing to the Chief Financial Officer the above compensation and fringe benefits, the City of Flint shall place the Chief Financial Officer on the City's regular payroll so that all of said compensation and fringe benefits shall be provided to the Chief Financial Officer in the same manner as other employees of the City of Flint.

5. **Indemnification and Insurance:** The City of Flint shall indemnify and provide appropriate insurance coverage for the Chief Financial Officer for any attorney's fees, reasonable costs, and damage awards incurred by the Chief Financial Officer as a result of any malpractice action brought against him by any person as a result of his performance of duties pursuant to his Appointment. To the fullest extent permitted by law, the City of Flint shall defend, pay on behalf of, indemnify and hold harmless the Chief Financial Officer against any and all claims, demands, suits, or losses, including, but not limited to, civil rights actions, and providing for all costs connected therewith, and for any damages which may be asserted, claimed, or recovered against or from the Chief Financial Officer by reason of any injuries or damages including losses

that may arise as a result of his acts, omissions, faults or negligence in connection with the performance of the terms of his appointment. The City of Flint shall provide appropriate insurance coverage, although, the full indemnification of the Chief Financial Officer as articulated above shall not be in any way limited by the insurance coverage chosen by the City of Flint.

6. **Termination:** The City may terminate, without cause, this Agreement (and the resultant employment relationship) with the Chief Financial Officer before the expiration set forth herein. In the event that this Agreement is terminated without Good Cause, the Chief Financial Officer shall be entitled to accrued PTO.

The City may terminate, for Good Cause, this Agreement (and the resultant employment relationship) with the Chief Financial Officer before the expiration set forth herein. In the event that this Agreement is terminated with Good Cause, the Chief Financial Officer shall be entitled to accrued PTO.

The Chief Financial Officer may voluntarily terminate this Agreement before the expiration of the term set forth herein by providing fourteen (14) days advanced written notice, unless agreed upon otherwise by the Parties. In the event that this Agreement is terminated pursuant to this subsection, the Chief Financial Officer shall be entitled to accrued PTO.

"GOOD CAUSE". For purposes of this Agreement the term "good cause" is defined as sole proven acts or omissions as follows:

A. Any willful, knowing, grossly negligent, or negligent breach, disregard or habitual neglect of any provision of this Agreement, or any willful, knowing, grossly negligent, or negligent breach, disregard or habitual neglect of any duty or obligation required to be performed by the Chief Financial Officer under this Agreement or applicable law.

B. Any misconduct of the Chief Financial Officer involving an act of moral turpitude, criminal illegality (excepting minor traffic violations), or habitual violations of the traffic laws, whether or not related to the Chief Financial Officer's official duties hereunder.

C. Any willful, knowing, grossly negligent, or negligent misapplication or misuse, direct or indirect, by the Chief Financial Officer, of public or other funds or other property, real, personal, or mixed, owned by or entrusted to the City, any agency or corporation thereof, or the Chief Financial Officer in his official capacity.

7. **Waiver of Claims:** Appointee agrees, in consideration for accepting payment pursuant to this Agreement, that Appointee will not file a lawsuit or claim of any type in any forum against the City for actions arising in any way related to employment by the City, and that if Appointee does, the lawsuit or claim will be immediately dismissed; and, notwithstanding the fact that the terms of this Agreement shall otherwise remain in full force and effect, Appointee will return to the City all of the consideration received from the City as a result of this Agreement, and Appointee will pay to the City all of the costs, expenses, and attorney fees incurred by the City in defending against such a lawsuit or claim. However, nothing in this

Agreement shall prevent Appointee from filing suit to challenge this Agreement or to enforce the terms of this Agreement.

8. **Whole Agreement:** Any additions, deletions or modifications to these terms of appointment must be in writing and signed by both parties. This document, consisting of three (3) pages in its entirety, embodies the entire agreement between the parties hereto.

Dated this _____ day of August 2021.

APPOINTEE:

Robert Widigan

FOR THE CITY:

APPROVED AS TO FORM:

Sheldon A. Neeley, Mayor

Angela Wheeler, Chief Legal Officer

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