

# RUSHING

March 19, 2024



# MEP 2040 COMPANY PLAN

## INTRODUCTION

Rushing is proud to publish our MEP 2040 Company Plan – a milestone in fulfilling our commitment as a signatory of MEP 2040. Alarmed by the rapid melting of the Portage Glacier in her home state of Alaska, our co-founder and CEO Rae Anne Rushing created Rushing, a midsize engineering and consulting firm. Rushing was born out of the desire to use expert engineering to do better in the world and protect the natural beauty and resources that it provides. Since Rushing's inception, we have put sustainability at the forefront of our projects, and we view our participation in MEP 2040 as the logical next step in formalizing our approach to reduce our projects' MEP-related carbon emissions as well as to foster collaboration within the MEP industry towards this goal.

By publishing this plan and taking the actions outlined within it, we aim to continuously improve our own practices and to lead the larger MEP industry to take the necessary actions to limit global greenhouse gas emissions. The MEP industry is a key player in determining whether global emissions will be contained in the timeframe needed to mitigate the worst effects of climate change. At Rushing, we are empowered with the knowledge that our work to curb emissions, including the work that we undertake as part of the MEP 2040 Commitment, is instrumental in protecting the world for future generations.

While our participation in MEP 2040 underscores Rushing's longstanding commitment to sustainability, this publication is our first MEP 2040 Company Plan. We are excited to see how our pursuits evolve as a result of our efforts and in response to the changing industry. The future starts today.

## TEAM

To track progress related to the MEP 2040 Commitment, Rushing has created an interdisciplinary committee comprised of members of Rushing's Sustainability, Energy, and Mechanical Studios. Rushing's MEP 2040 Committee members have already proven themselves to be driving forces in integrating sustainability throughout Rushing's project portfolio and are passionate about providing clients with the tools they need to make impactful emissions-related decisions. Now, the committee feels energized by the focus and sense of urgency that the MEP 2040 Commitment has brought to the world of MEP design and is eager to continue to advocate for meaningful change. The committee consists of:

Kaylee Levine, Senior Sustainability Consultant, Committee Captain

Austin Bonnes, Senior Mechanical Engineer, P.E.

Lindsey Gaunt, Energy Analyst/Mechanical Engineer, P.E.

Rachel Thompson, Energy Analyst

Nina Olivier, Manager of Sustainability

## COMMONLY USED TERMS

The worlds of MEP and LCA, acronyms themselves, are unsurprisingly flush with more acronyms, jargon, and potentially confusing terms. In an effort to demystify this subject, below are definitions for some technical terms as used in this Company Plan.

Mechanical, Electrical, Plumbing (MEP) – The HVAC, electrical, and plumbing systems designed and installed in a building.

Heating, Ventilation, Air Conditioning (HVAC) – Mechanical systems designed and installed to provide fresh air and condition a space for occupant health and comfort.

Significant New Alternative Policy (SNAP) – An EPA policy that identifies and evaluates substitutes in end-uses that have historically used ozone-depleting substances (ODS). It was enacted under Section 612 of the Clean Air Act (CAA). SNAP looks at many different industry sectors, different types of aerosols, and other substances that affect both people’s health or the environment and gives the authority to make restrictions on those substances.

Global Warming Potential (GWP) – A quantification of climate change impacts corresponding to total amount of greenhouse gases emissions. Also commonly referred to as carbon emissions, GWP reports the collective emissions of carbon dioxide, methane, nitrous oxide, and fluorinated gases (such as those used as refrigerants) in units of kilograms of carbon dioxide equivalents (kgCO<sub>2</sub>e).

Operational Carbon – Greenhouse gas emissions due to building energy consumption. Operational carbon is typically calculated using energy usage data and annualized average emissions factors (as opposed to hourly emissions factors). Because operational carbon emissions are highly dependent on fuel type and thus time of day, hourly emissions factors are considered more accurate than annualized average emissions factors but are not standard in calculating operational carbon due to their complexity. Operational carbon in this Company Plan refers to annualized average operational carbon.

Embodied Carbon – Greenhouse gas emissions due to the manufacturing, transportation, installation, maintenance, and disposal of building materials.

Environmental Product Declarations (EPDs) – A “nutrition facts label” for the environmental impacts of products and materials. A Type III EPD is a transparent, objective, third-party verified document that reports what a product is made of and how it impacts aspects of the environment. EPDs are a much-needed tool for accurate embodied carbon accounting, but they are not currently widely available for many MEP products.

Whole Building Life Cycle Assessment (WBLCA) – A type of Life Cycle Assessment (LCA) – a methodology for assessing environmental impacts over all stages of a product, process, or service – applied specifically to construction of buildings. One such environmental impact that a WBLCA assesses is GWP. Currently, the majority of WBLCAs are limited to architectural and structural components of a building due to a lack of data (from EPDs) for MEP components.

## PLAN

### OUR GOAL

Advocate for and aim to achieve net-zero carbon emissions in our projects for:

1. Operational carbon emissions by 2030.
2. Embodied carbon emissions by 2040.

This goal is aligned with the MEP 2040 Challenge and the consensus in the greater scientific community that radical carbon emissions reduction is needed as soon as possible. These goals are ambitious but necessary.

### TARGETS

The table on the following page lists ten targets and associated tasks that will strategically aid in achieving these goals and fulfilling the four commitments of MEP 2040, listed below.

#### MEP 2040 Commitments

1. Establish a company plan to reduce operational and embodied carbon across MEP systems on all projects, targeting zero by 2040. Measure and report progress against that plan annually.
2. Request low-GWP refrigerant availability when designing systems to reduce or eliminate GHG emissions from refrigerants.
3. Request Environmental Product Declarations (EPDs) in project specifications for MEP system components.
4. Participate in a quarterly MEP 2040 Forum and a CLF Community discussion group to share lessons learned and contribute to a growing body of knowledge.

The pursuit and achievement of our goals and actions is limited by Rushing's specific scope of work on our projects, the state of project completion, and clients' goals. While we advocate for these ideals for all of our projects, the specific tasks that we undertake will be evaluated for each project and pursued as related to our scope of work and with consideration of opportunities for the greatest impact.

## RUSHING MEP 2040 TARGETS AND TASKS

Target		Current Tasks	Future and Ongoing Tasks
1	Track project metrics related to MEP 2040 goals through a portfolio-wide dashboard.	Create pilot version of dashboard.	Populate and maintain the dashboard across our project portfolio.
2	Implement a checklist of MEP 2040 items for projects to incorporate into their workflow.	Create pilot version of checklist.	Implement the checklist across our project portfolio.
		Train Rushing staff on MEP 2040 goals and the Checklist.	
3	Advocate for whole-building embodied carbon emissions reductions.	Develop strategies for informing clients of the importance of whole-building carbon reductions.	Educate clients on MEP 2040 goals and whole-building carbon reductions.
4	Advocate for industry-wide development of EPDs and adoption of low-GWP refrigerants.	Send advocacy letters to commonly used MEP manufacturers.	Keep track of existing and new EPDs as they are published.
			Maintain a list of manufacturers and advocacy letters sent. Send advocacy letters when working with a new manufacturer.
5	Measure operational carbon associated with relevant scope of projects.	Incorporate energy model projections of current projects into dashboard. Create benchmark of projected operational emissions from energy model results.	Track operational carbon emissions of projects.
		Request access to utilities data for previous projects.	
6	Measure embodied carbon associated with relevant scope of projects.	Until data is more readily available, estimate impacts using existing resources, such as CLF's MEP LCA Calculator.	When availability of data and software allows, perform MEP LCAs.

7	Calculate projects' carbon emissions due to refrigerants.	Research methodologies available for calculating GHG emissions due to refrigerants.	Track refrigerant GWP of projects.
		Research product availability and options for equipment that uses low-GWP refrigerants.	Advocate for proper refrigerant management per SNAP requirements and provide options to clients of lower GWP refrigerants.
8	Reduce projects' carbon emissions through incorporating life-cycle-based decision-making into the MEP design process.	Investigate strategies and workflow for operational and embodied carbon reductions.	Educate clients to allow them to make informed decisions that consider whole-life emissions of MEP systems.
			Provide projects with a pathway for overall carbon reductions that can contribute to achieving net zero emissions.
9	Report carbon emissions annually.	Determine temporary reporting mechanism.	Report emissions compliant with future reporting framework created by the ECHO (Embodied Carbon Harmonization and Optimization) project.
10	Participate in the MEP 2040 community.	Attend MEP 2040 Quarterly Forums and working group meetings.	Continue to attend Forums and working group meetings.
			Participate in future opportunities presented to the MEP 2040 community to progress MEP 2040 goals, such as testing MEP embodied carbon software.