

NORTON COMMONS®

More Life Per Square Foot



A **NIBE** GROUP MEMBER

**THE FUTURE OF RESIDENTIAL GEOTHERMAL
PLANNED COMMUNITIES**



YOUR PRESENTER TODAY
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**IS GEOTHERMAL THE FUTURE OF
PLANNED DEVELOPMENTS IN THE US?**

WE THINK SO.



NORTON COMMONS DEVELOPMENT, LLC



Total Entitlements:

- 600 Acres
- 2,880 Dwelling Units
- 500,000 sf commercial
- Total Civic: 290,000 sf

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HERE'S WHAT WE WANNA TALK ABOUT

□ **TIMELINE AND ORIGIN**

of the Norton Commons planned community

□ **TRANSFORMATION**

to a successful Geothermal commitment

□ **WHAT NOW? FUTURE FORWARD**

Scaling and selling Geothermal communities

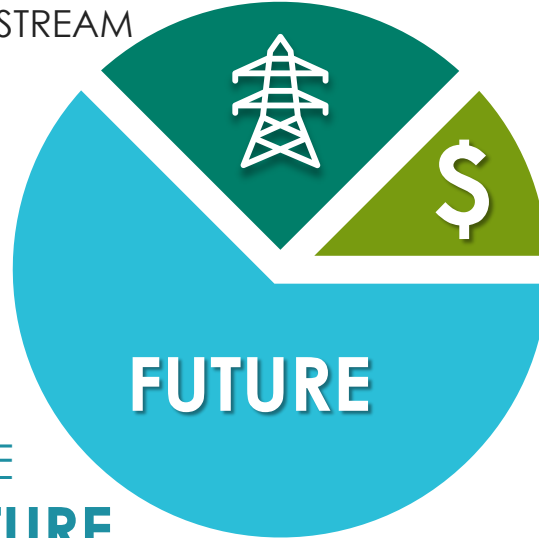


WHAT YOU WILL TAKE AWAY



THERE'S A NEW GRID

GEO LOOPS ARE POISED TO GO
MAINSTREAM



FINANCIALS

LET'S CHANGE THE
GEO THERMAL VALUE
CONVERSATION

THIS MODEL CAN BE
SCALED FOR THE **FUTURE**



TIMELINE / OVERVIEW

The vision changed in 2012, when research first began to find a solution to eliminate the noise pollution caused by crowded outdoor condenser units in residential areas

Introduce new Government regulations, and a beneficial electrification and sustainability focus which have culminated into momentum for the future of geothermal living.

2003

2012

2018

2023

FUTURE

Construction began in September of 2003, and now Norton Commons consists of more than 1500 homes, multi-family units, and town center businesses



Since 2018, Norton Commons requires every home to be built with geothermal HVAC. In addition, business, office buildings exceeding 20,000 square feet, and even the post office have been built and equipped with the same ground source technology

Norton Commons has become a blueprint for success. This model can be scaled and replicated.

This group and other likeminded innovators are set up to repeat this process in planned communities nationwide.





Before

2012

**Phase 1 Residential
Construction**

Extremely High Utility Bills





Before

2012

Phase 1 Residential Construction

- Close Proximity
- Frequent Unit Failure
- Excessive Noise



THE VISION CHANGED IN 2012

Research first began to find a solution to eliminate the noise pollution caused by crowded outdoor condenser units in residential areas

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CLIMATEMASTER[®]

Between

2012

2018



Phase 2 Residential Construction

- Ground Loop Installation
- Estimated 1800 Individual Loop Fields

Between

2012

2018

Phase 2 Residential Construction

- Loop Installation- Under
Garage Floor

Between

2012

2018



Phase 2 Residential Construction

- Ground Loop Installation- Wall
Penetration



Between

2012

2018

**Phase 2 Residential
Construction**

Residential Mechanical Space



PHASE 2 RESIDENTIAL OUTCOME

- Low Noise
- 40-60% increase on HVAC Efficiencies per home
- Unit serviceable life increased
- No outside condensers / noise
- Happy HOA
- Load leveling effect on utility grid
- Major reduction in fossil fuel use

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GEOHERMAL PLANNED COMMUNITY

PHASE 2 RESIDENTIAL OUTCOME

NORTON COMMONS®

More Life Per Square Foot



Church



Retail



Schools



Heat Pumps

FORWARD TO THE FUTURE

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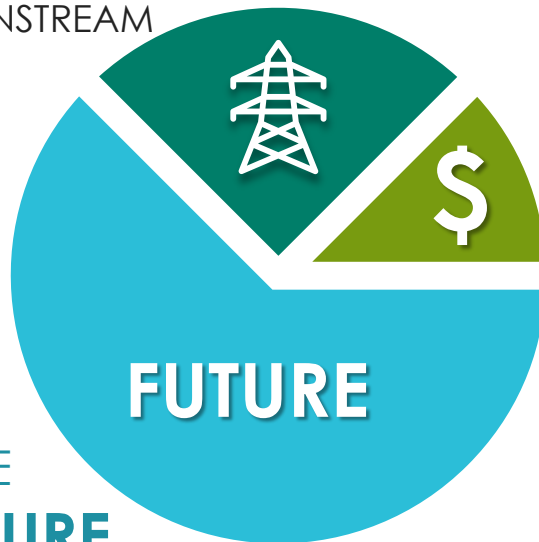


FORWARD TO THE FUTURE

2023

THE NEW GRID

GEO LOOPS ARE POISED
TO GO MAINSTREAM



FINANCIALS

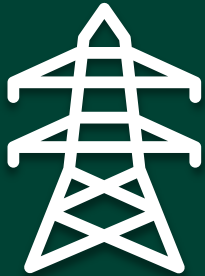
LET'S CHANGE THE
GEO THERMAL VALUE
CONVERSATION

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FORWARD TO THE FUTURE

THE NEW GRID

GEO LOOPS ARE POISED
TO GO MAINSTREAM



Taking geothermal mainstream will require you to **think differently** about how to develop land, similar to water/sewer lines.



Planned communities can use an individual loop per house, or an integrated community system of vertical bore holes- either planned and installed up front, similar to water/sewer lines.

FORWARD TO THE FUTURE

GEO LOOPS ARE POISED TO GO MAINSTREAM

INDIVIDUAL LOOP

Ground loops are in the ground prior to construction of the house. As they're grading lots, they're putting in loops.

Drilling each loop individually requires less upfront engineering, but requires having a strong team of local contractors, loop installers, product support.

COMMUNITY LOOP

Installing up front can translate to 40 percent lower installation costs on the community loop vs. individual.

This simplifies the process for a production builder and homeowners "plug" into the system similar to a sewer system.





600 acres, single-family homes, townhomes ... because of the variation and size of the project, each property needed to be on its own loop,

INDIVIDUAL LOOPS

600 Acres, Single Family Town Homes

Loops are largely placed under garage slabs, where they won't be disturbed — something that's important in a high-density area like Norton Commons, where lot lines are sometimes only 6 feet apart

Infrastructure Pre-Planning is Key

Ground loops in the ground, prior to construction of each home. As they're grading these lots, they're putting in these loops; they just tap into it

Talking the Talk – Get Buy-In

Ground loops are already in the ground, prior to construction of each home





Build Strong Manufacturer Relationships

Installed Heat Pumps



HOW TO PREPARE FOR THE FUTURE

PLANNING FOR GEOTHERMAL COMMUNITIES IS THE FUTURE

1. **Build Strong Relationships** with local developers, contractors, loop installers, drillers and product support / manufacturers.
2. Build relationships with **production builders**.
3. Educate yourself and your community by **changing the Financial & Utility Narrative**.

FORWARD TO THE FUTURE

FINANCIALS

LET'S CHANGE THE
GEOHERMAL VALUE
CONVERSATION



Many start with conversations around energy savings, and say it will take three, five, seven years to payback,”

That's the wrong start



CHANGE THE CONVERSATION

TALK THE TALK

CASH POSITIVE FROM DAY ONE

More expensive to build? Yes. But the monthly payment for a geo home might be more than a home with a traditional HVAC system. But that increased monthly payment was less than their increased energy bill would have been.

COST OF OWNERSHIP

Over the life of the unit, you can quantify less maintenance, less care, piping, not to mention reinstatement of the geothermal tax credits, more cities and states adopting progressive building requirements and more homebuyers interested in an energy-efficient lifestyle

NOISE ABATEMENT

Homebuyers are interested in an energy-efficient lifestyle
But what will ultimately end up drawing people to geothermal?
No noisy outside condensing unit, it opens eyes (and ears).

WHAT NOW?



Understand how to talk to your community about the future and evangelize geothermal



Change the financial conversation, stop focusing on ROI and build a better argument for planned developments.



Relationships with the right folks. Know your drillers, your installers, your manufacturers—so you can promote effective planning with developers. **Be the Network.**





CLIMA COOL



ClimateCraft

YES. We would love to follow up with you.

We know you couldn't make it to all of our presentations, it's a busy week! We hope you enjoyed your time. Let us know which content you'd like us to send you and we will reach out to you next week!



Let's Talk

Scan me

