



NET **ZERO** VERMONT

A Connector for Real Change

SUSTAINABLE MONTPELIER 2030

DESIGN COMPETITION

THE CHALLENGE FOR DESIGN PROFESSIONALS

Registration Deadline September 8, 2016

Stage One – Submissions due 5:00 PM, September 30, 2016

Net Zero Vermont, Inc. is inviting submittals from multi-disciplinary teams to engage Montpelier Vermont residents and community leaders to embrace a sustainably designed 21st century Net Zero future city. The winning team of this competition will receive a \$10,000 award, and help set the course for the future plans of America's greenest state capitol. The winning team will also be recognized for creating a design vision that can inspire similar small cities around the US.

SUSTAINABLE MONTPELIER SPONSORS



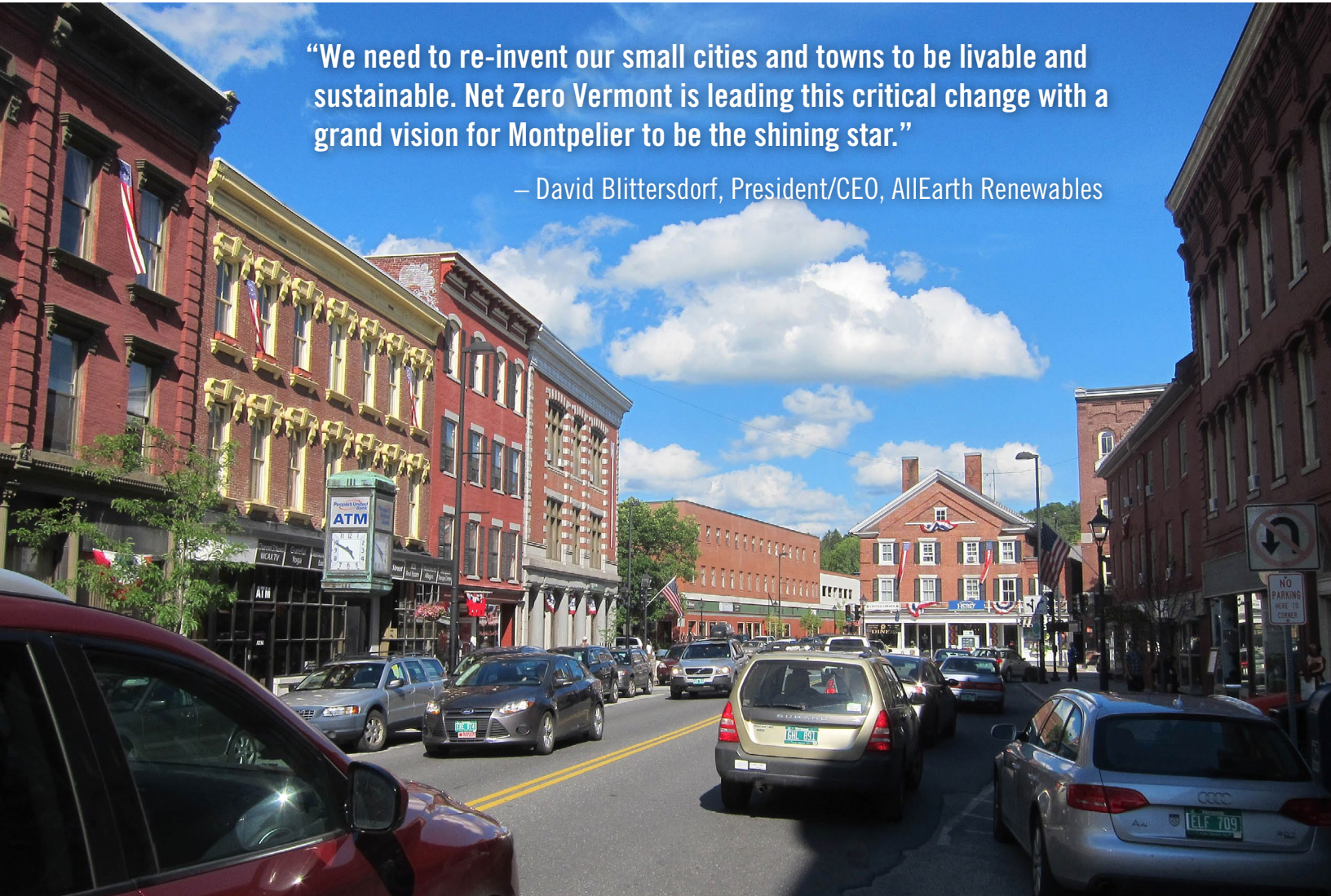
INTRODUCTION

Montpelier is a Special Place

Montpelier, Vermont is the smallest state capital in the nation. It is a mix of small town and vibrant city, both historic and progressive. Home to many state offices, the city population swells during the brief legislative session and the busy summer tourist season. The need for economic development continues to be important, as does more affordable housing and senior living options. Approximately one half of residents own their homes and the vacancy rate for rentals remains extremely low. The city has pledged to become Net Zero by 2030, thus needs a vision and ways to achieve that goal.

KEY OBJECTIVES

The competition challenges multi-disciplinary design teams to envision a Net Zero downtown Montpelier in 2030 that retains the existing historic fabric of the city while providing new concepts that focus on sustainable human centered design. Teams should consist of individuals with design expertise in: net zero strategies, the built environment, transportation, landscape and public spaces, and the cultural and visual arts.



“We need to re-invent our small cities and towns to be livable and sustainable. Net Zero Vermont is leading this critical change with a grand vision for Montpelier to be the shining star.”

– David Blittersdorf, President/CEO, AllEarth Renewables

THE DESIGN CHALLENGE

Develop a cohesive design for the Civic & Central Business areas of Montpelier (designated as CIV and CB-1 on the current zoning map) that addresses as many of the following as practical:

Redevelop land currently in off-street parking lots (see Appendix A, page 14) leading to:

- an increase of 1,000 to 1,500 dwelling units for multiple income and physical abilities (especially senior housing) as well as appealing, affordable units to attract young people to an aging city.
- greenspace and pedestrian access to the riverfront.
- opportunities for pedestrians, bicycles, and pedestrian streets.
- potential for shared office and commercial spaces.
- enclosed farmers market & local food processing.
- a conference/training center.
- hospitality & tourism opportunities.
- a fully utilized multi-modal transit center (part of the marked Taylor St. development).
- a complementary architectural style in downtown Montpelier. Assume that current downtown buildings will remain, with new building in parking lots and other proximate infill areas.
- expanded public art spaces (i.e., Langdon Street Alive and Main St. Pocket Park).
- contemporary storm-water controls including rain gardens, green roofs and reclamation systems.
- an integrated built and natural environment.
- a sustainable model adapted to future development of other communities.
- an integrated transportation system of shared mobility options.

The winning team's design will also be used by the larger community to coordinate strategies:

- Gateways and wayfinding for the downtown.
- Develop comprehensive options for public transportation including buses, shuttles, on-demand jitney service, trains, and other alternatives.
- Strategies to relocate on-site parking to satellite lots with shuttles and bikes, etc. (outside the districts).
- Ways of using the built environment to provide long term resilience within a challenging climate changed future.

KEY ELEMENTS OF SUSTAINABLE DESIGN

The following three principles of sustainability (S3) must be integrated into proposed designs:

1. **Environmental Sustainability** – new structures will be Net Zero in their energy demands, and utilize local materials where possible. Convert valuable real estate downtown to an integrated, efficient transportation network emphasizing pedestrian, bicycle and shared transit. The future movement of goods and people will also be more efficient (via rail, transit, vans, or more efficient vehicles, where possible).
2. **Social Sustainability** – Human Centered Design must be incorporated into the envisioned city spaces and buildings, encouraging people of all ages and abilities to make Montpelier a place in which to live, work and play. Successful designs will promote community gathering, shared work and maker spaces and opportunities for celebration. Illustrate how the built environment can encourage people of all abilities to make full use of the future city. Access and use of the surrounding natural environments, particularly the riverfront, must be incorporated, reflecting a nourishing and fun community to live in.
3. **Durable Sustainability** – Designs should consider the long-term effects of time and natural forces. Flood plain areas must be addressed, and durable materials used to survive for 100 years with minimal maintenance and reconstruction, including low carbon concrete and longer life rebar. Designs should allow for the future incorporation of improved technology with minimal disruption and expense, and be adaptable for other uses in the future.



THE PROCESS

Competition and Community Dialog

We invite multi-disciplinary teams to submit schematic sketch designs for public review. Solutions should depict a future Montpelier that preserves the best of the old while delivering a new mix of buildings, infrastructure, and assumed transportation options to service the community for net zero living. The goal is to create a community-embraced, fifteen-year plan for a vibrant downtown of mixed-use spaces, interconnected arteries, efficient buildings and street systems, and linear green spaces, all accessible to young and old, working and retired people of varying abilities. Design submissions should include or assume:

- 1) options for sustainable and inclusive small city living;
- 2) a modern, shared transportation system;
- 3) a lively, high density downtown for living, working, culture, and entertainment; and
- 4) that current zoning and other regulations can be changed for the new vision of a low carbon future.

Public participation and engagement will be central to choosing the winner of the design competition. Net Zero Vermont will be managing this process.

The Competition will consist of two stages. The first stage submissions are due 5:00 PM, September 8, 2016. Second stage submissions are due 5:00 PM, November 11, 2016.

Stage One will be an open public competition for anonymous design solutions available for public review. This will be a conceptual submission including basic design ideas sufficient to engage the public in its possibilities without providing a full scale submission. Montpelier residents and decision-makers will be invited to offer feedback and vote for the top concepts that illustrate the place they want to live, work and play in the future. Net Zero Vermont is committed to citizens determining their collective future. This public visioning process will foster community buy-in and long-term commitment to development of the Net Zero future. A professional review panel will vet the top designs for competency and possibility.

Stage Two will be to open to invite the top five winning design teams to prepare more comprehensive submissions. These will be publicly displayed and vetted through an organized public review forum by the Net Zero Vermont team. The design that excites the most community approval will be awarded the prize.

Following the competition, Net Zero Vermont will assist the community in integrating the winning preliminary and final designs into public development plans that actualize this work. The winning design will help inform and influence future public planning and development projects, and the winning team will be designated to consult on such efforts. By insuring a significant voice for citizens in determining their collective future, this publicly visible visioning process will foster community buy-in and long-term commitment to development of the Net Zero future.

OUTCOMES

The winning concept will:

- I. Illustrate a schematic visual design which integrates historic Montpelier with a new downtown vision as a model sustainable city. The design should reflect a sustainable system of energy and land use that encourages a rich social and cultural fabric: a great place to live, work and play well into the future.
- II. Elicit broad public engagement and acceptance (Net Zero Vermont will facilitate).
- III. Have the capacity to inform and influence future city plans: Master Plan, Economic Development, and Development Regulations (see Resources for links to current Master Plan).
- IV. Characterize an overall vision for Net Zero Montpelier 2030, to help inform future public planning and resources allocated to development projects.

“Montpelier is a perfect candidate for Net Zero Vermont. Residents have chosen Montpelier for the arts, outdoors, environmental ethic, public policy buzz, the authenticity of our merchants, and being part of a thoughtful community. It is time to leverage this good will.”

– Allison Hooper, Co-CEO Vermont Creamery



KEY DATES

JULY 13, 2016 | Request for Design Proposals: Registration opens

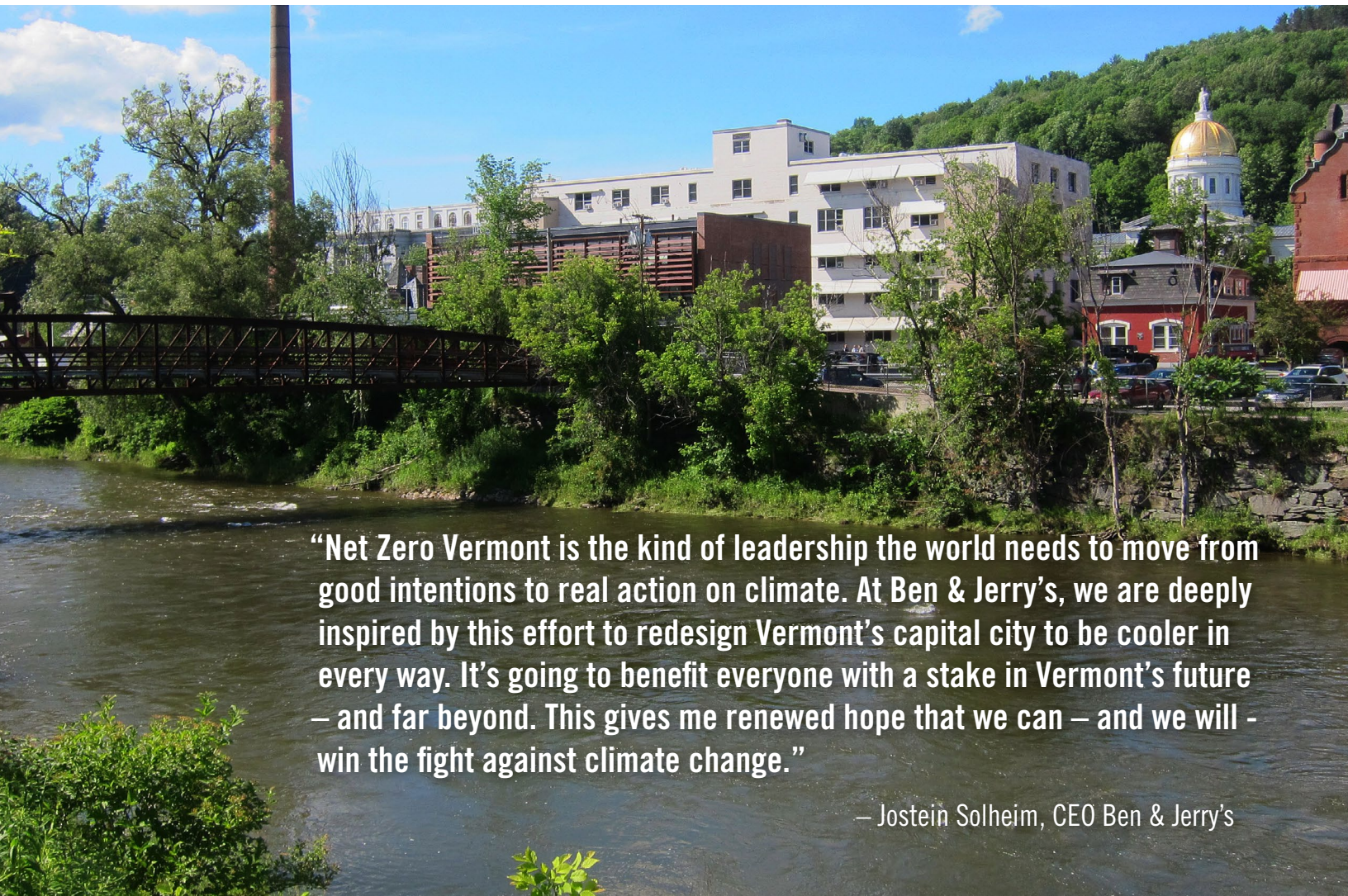
Open invitation for qualified design firms in and outside of Vermont to register at www.netzerovt.org. Use the Submission Form to register, providing full contact information for all team members. Upload a single paragraph of team qualifications suitable for publication and exhibition in PDF format. A \$50 processing fee is asked of each registering team.

SEPTEMBER 8, 2016 | Registration closes at midnight EST

SEPTEMBER 30, 2016 | Submission of Phase I Design Boards

First round of design team submissions. Each anonymous team presentation will provide 2 @ 24"x24" boards and 1 page (8-1/2" x 11") mounted project narrative description, suitable for wall mounting. A copy of the team's biographies and history will be attached, in a sealed envelope, to the back of the boards.

Deadline: 5:00 PM to Net Zero Vermont, 15 State Street, Third Floor, Montpelier, VT 05602.



“Net Zero Vermont is the kind of leadership the world needs to move from good intentions to real action on climate. At Ben & Jerry’s, we are deeply inspired by this effort to redesign Vermont’s capital city to be cooler in every way. It’s going to benefit everyone with a stake in Vermont’s future – and far beyond. This gives me renewed hope that we can – and we will – win the fight against climate change.”

– Jostein Solheim, CEO Ben & Jerry’s

OCTOBER 2-5, 2016 | Pop-up gallery public display & Voting

The public review process will consist of several days of public review and voting. The public may view all of the submissions, vote for their top five selections, and offer comments on the competition website. There will be a multi-layered media plan for public engagement (television, radio, print, Facebook). Ben & Jerry's and Vermont Creamery will provide free cheese and ice cream for those citizens who participate in the review and voting.

OCTOBER 6, 2016 | Design Review Panel

A professional review panel will assess the winning submissions for team capacity, viability of the approach and general professionalism of the entrants. Finalists will be notified to advance to the final round. Each selected entrant will be requested to expand their initial concept into a more fully realized set of boards and narrative for presentation during the community review process.

OCTOBER 8, 2016 | Five Finalists Announced Online Public Forum with Designers

Each finalist will be invited to ask questions and receive feedback in an online public forum to gather community input. The public will interact with finalists giving additional guidance as they refine their design concepts.

DECEMBER 2, 2016 | Final Design Submissions Due

Delivery of the completed project boards and HD digital versions along with accompanying workbook describing key elements of the plan.

DECEMBER 6-7, 2016 | Public Design Presentations

The five refined designs will be presented to the public at both an evening and daytime forum, using HD digital format for wide screen display and the board submissions for audience reference. The forums will be broadcast over public access and the Internet, while participant and online voting for Montpelier residents will be available to determine the competition winner. If applicants live and work far away from Vermont, live 2-way video electronic presentation of the projects will be arranged to save cost and transportation pollution.

DECEMBER 12, 2016 | Winning Design Announced

The winning design will be displayed publicly and presented to city officials.

WINTER, 2017 | Engagement and Implementation Phase

Net Zero Vermont will use the winning design as the basis for a public engagement process to help reach consensus on the transportation and land use changes needed to actualize this vision.

COMPETITION REQUIREMENTS

Registration: Teams must identify one individual as the official competition registrant and representative for the team. The competition team registrant will serve as the sole contact via e-mail throughout the competition.

Registration Number: Upon payment of the \$50 entry fee online, each registrant will be issued a Registration Number that must be used on all correspondence and included on all entry materials as described below.

Submittal Identification: Entrants must securely mark all submittal materials with the team Registration Number. Other than the Registration Number, the materials will bear no identification, name, symbol, insignia, logo or mark that might serve to reveal the identity of the author(s) of the submission.

Round One Submissions: Deliver each submission on two (2) Presentation Boards:

- 24 inches wide by 24 inches high (42 cm x 58.5 cm), mounted on foam core.
- In addition to the boards, each team should also mount one (1) 8-1/2" x 11" sheet/board, giving a general description of the design concept, themes and direction. In particular, entrants should identify how their concept addresses the three principles of sustainability (S3): Environmental, Social, and Durable (page 5).
- Should be schematic in nature, identifying forms, organization, materials, site planning, and design direction. Provide site plan(s), elevations, aerial and street view perspectives, building massing, site sections where needed to communicate the vision.
- All boards must be lightweight, and able to lie flat against an easel or wall.

Documenting the Design:

- The Presentation Boards should document clearly and concisely the entrant's conceptual approach to the project. Information about the entrant's thought process may also be illustrated.
- All text and information must be in English and a minimum 10 point type. The team Registration Number must be clearly displayed on both boards. All drawings should have captions or titles identifying them along with the entrant's registration identification number.
- Entrants are responsible for delivering (by mail or otherwise) their submission to Net Zero Vermont, 15 State St., third floor, Montpelier VT 05602 by the deadline. After Stage One judging, teams may pick up their presentation boards; unclaimed boards may be discarded.

COPYRIGHT OF ENTRIES AND INTELLECTUAL PROPERTY

Net Zero Vermont Inc. reserves the right to make use of all presentation materials submitted at any stage of the competition, in any future publications about the competition for the purposes of exhibition, or on the competition and Net Zero Vermont website. Any use will be properly credited to the competitors and the competitor warrants that the material submitted comprises solely their own work or that of any member of a team submitting a stage one and stage two response. This nonexclusive license is irrevocable, shall survive the competitor's exit from the competition process, and is royalty-free.

COMPETITION BACKGROUND

Net Zero Vermont's Sustainable Montpelier 2030 Design Competition is intended to provide residents of America's smallest capital city with exciting images of what a livable, accessible and sustainable future could look like. We hope to engage the public in embracing a shared vision while providing a usable guide for future development. Most people need compelling visual images to imagine what could be different than what they see in front of them. The competition entries should allow them to envision what's possible in transportation, land use, and local culture within a Net Zero future. By enlisting the public in the judging process for this competition, we expect to gain the local commitment to a future that turns our small city into a national model of low carbon living.

We believe that our proposed model can and will be used as a template for small city transformation throughout Vermont, and perhaps throughout northern New England. Our process provides a replicable model for attractive city-specific designs that might motivate the public to embrace necessary systems changes and develop small businesses development to ensure long term sustainability.



MONTPELIER, VERMONT

Who are we?

Montpelier exemplifies the self-reliant and entrepreneurial spirit of Vermont. Born from the granite industry, the city imagined itself as the hub of future political and commercial enterprise. It built the state capitol building on spec to make sure the seat of government and the growth of government resources was centered in Montpelier.

Geographically limited by mountains, Montpelier has not experienced the urban sprawl mirrored in larger urban areas. Instead, the region has experienced rural sprawl.

Montpelier was specifically chosen for this model venture because the city has already demonstrated a commitment to building a sustainable future. The city council has chartered a mandate to make Montpelier NET ZERO in fossil fuel use by 2030. The White House recognized this effort by naming Montpelier as one of 16 Climate Action Champion Cities. The city is also one of 50 finalist competitors in the Georgetown University Energy Prize. To provide renewable heat and electricity, the new wood fired district heat plant is designed to meet the heating needs of the downtown and state offices. This plant has the capacity to also heat proposed high density downtown development. Montpelier has just contracted for a Megawatt of solar power specific to municipal operations.

The city, however, also faces daunting challenges. Like much of Vermont, Montpelier is experiencing an exodus of young people as that cohort increasingly chooses to live in vibrant, affordable, energy efficient downtowns not found in most of Vermont. It is sad to note that many of Vermont's small cities have nothing to offer the youth. Montpelier, like other small cities, sports a quaint Main street with Victorian facades. These scenic streets mask huge tracts of land devoted to parking. This is not a sustainable mode of living if we want to lower our carbon footprint. The vacancy rate is less than one percent. Affordable places for young people to live and senior citizens to downsize are nearly non-existent. We hope to break down the barriers to creating a more desirable downtown by increasing efficiency in our transportation and housing choices.

Montpelier is the perfect locale to begin this effort to invest in new systems. As one can see from the aerial views of downtown, over 65% of the real estate is devoted to parking (see page 14). This land includes the most easily buildable land in the city and the most desirable to our target cohorts. Extensive high-density development on this land would provide an immense boost to the real estate tax base with only a slight cost in infrastructure investment.

Before any development can occur, the transportation infrastructure and commuting patterns must be addressed. In addition, the capacity for energizing new development must be put in place. An energy resilient Montpelier requires transforming commuter parking lots

to mixed use development and green space. Montpelier, however, has a number of positive features make it an excellent site for this competition, including:

- An active energy committee committed to making sure the municipality is actively working towards the Net Zero goal.
- As the state capital, residents are more politically engaged and willing to consider the changes required to become Net Zero.
- An insurance industry coupled with an imaginative financial community, which means the investment resources can be mobilized to fund an exciting model.
- Geographically central, it makes this an exciting venue for showcasing the future sustainability of our state and other New England small cities.

We now look to the architecture and design community to provide the concrete vision needed to make the ultimate transition to a sustainable small city of the future.

NET ZERO VERMONT STAFF



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APPENDIX A: MONTPELIER, VERMONT PARKING ALLOCATED REAL ESTATE

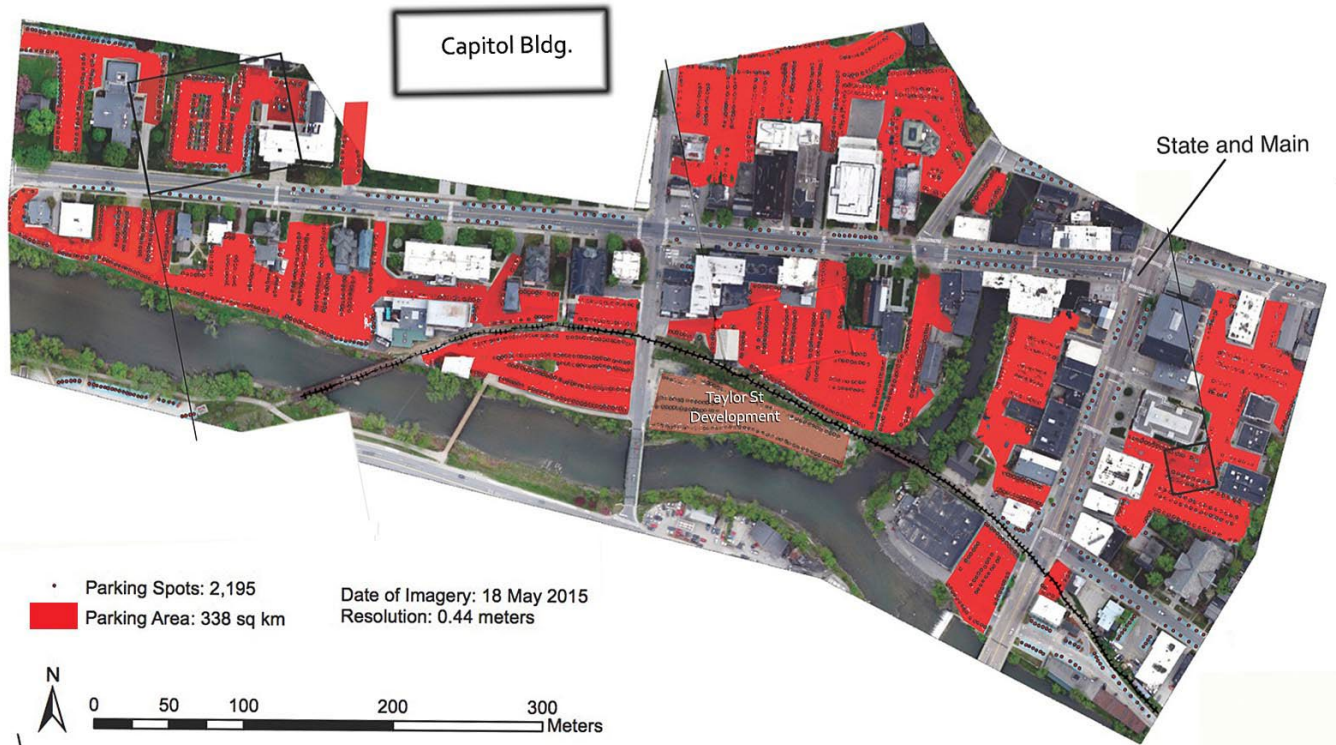
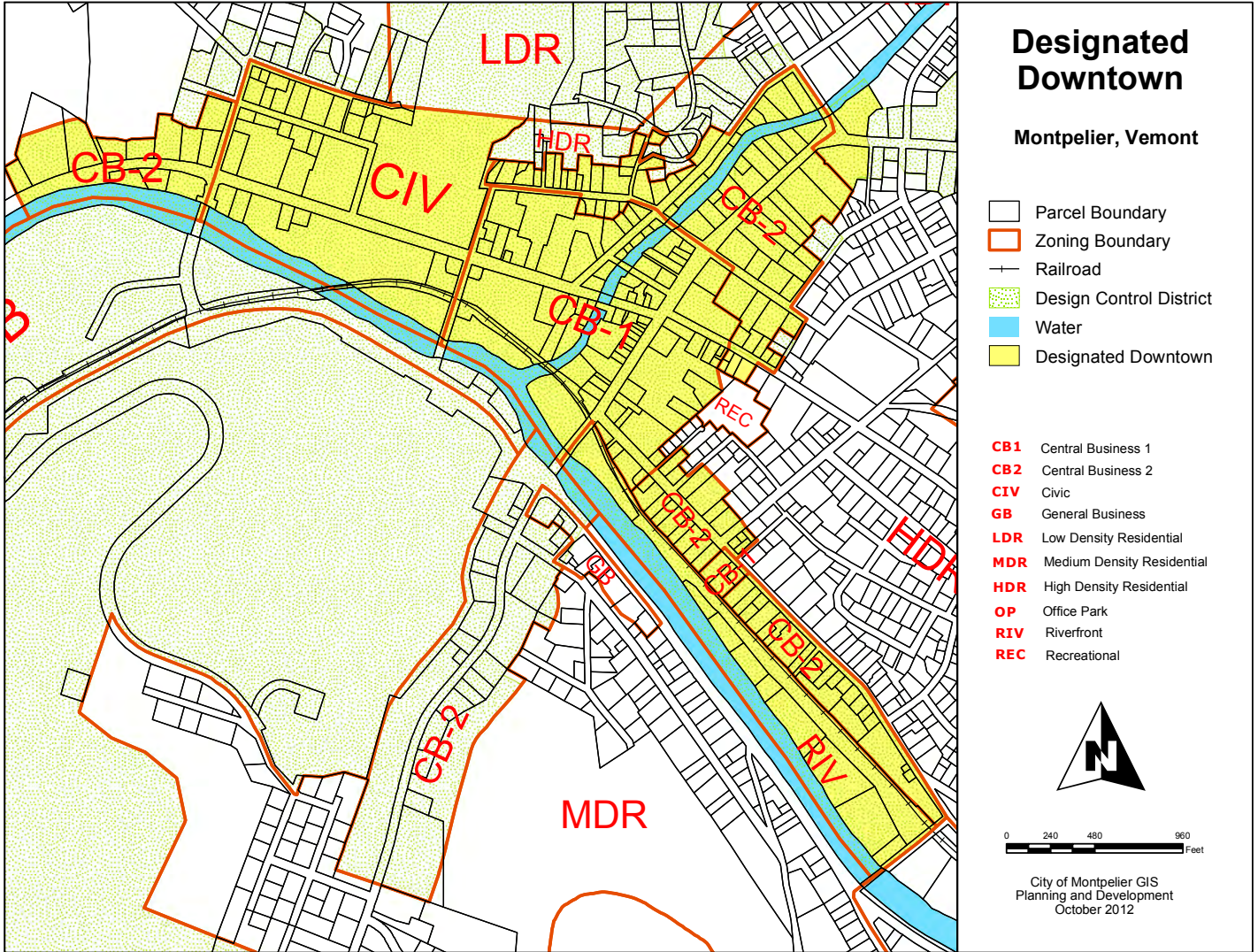


Image courtesy Jon Budreski Airshark
Graphic adjustments Dan Jones



Riverfront parking lot in downtown Montpelier

APPENDIX B:
BASE MAP OF THE STUDY AREA



APPENDIX C:**COMMUNITY RESOURCES**

The following Net Zero Vermont community partners are working on various projects, studies and plans that may be helpful background information to the design competition team.

Central Vermont is privileged to have a large number of organizations and groups dedicated to building a sustainable future. The groups listed below, may provide competitors with resources, background and an understanding of the environment within which submissions may be reviewed and judged.

Montpelier Energy Advisory Committee	http://www.montpelier-vt.org/412/Energy-Advisory-Committee
Efficiency Vermont	https://efficiencyvermont.com
Energy Action Network	http://eanvt.org/
Vermont Council on Rural Development	http://vtrural.org/
Vermont Energy & Climate Action Network	http://www.vecan.net/
Montpelier Alive	http://www.montpelieralive.com/
Renewable Energy Vermont	http://www.revermont.org/
Vermont Arts Council	http://www.vermontartscouncil.org/
Vermont Natural Resources Council	http://www.vnrc.org/
Vermont Public Interest Research Group	http://www.vpirg.org/
Vermont Rail Action Network	http://www.railvermont.org/
Central VT Regional Planning Commission	http://centralvtplanning.org/
Drive Electric Vermont	http://www.driveelectricvt.com/

APPENDIX D:

CITY RESOURCES

Below is a list of related municipal documents and maps (i.e., parcel and designated downtown maps, development plans, traffic studies and more). These background references may be helpful, however, the design competition team should assume that City and State regulations including the planning and zoning bylaws may need to be amended to accommodate the new vision for a model sustainable 2030 city. It is advised to remain big picture and allow the final design concepts drive the dialogue for amended regulations.

Adopted 2010 Mont Master Plan	http://www.montpelier-vt.org/480/Adopted-2010-Master-Plan
Designated Downtown map	http://www.montpelier-vt.org/documentcenter/view/1393
District Heat Downtown*	http://www.montpelier-vt.org/DocumentCenter/View/411
Downtown Traffic Simulation	http://www.montpelier-vt.org/652/Downtown-Traffic-Circulation-Simulation
Draft Zoning Map	http://www.placesense.com/doc-list/481-draft-zoning-map-4/file
Draft Zoning Overview	http://www.placesense.com/current/montpelier
Handicapped Parking locations	http://www.montpelier-vt.org/DocumentCenter/View/1399
Hazard Mitigation Plan	http://www.montpelier-vt.org/DocumentCenter/View/1298
Housing Task Force	http://www.montpelier-vt.org/DocumentCenter/View/258
Montpelier in Motion plan	http://www.montpelier-vt.org/DocumentCenter/View/3181
Montpelier Planning & Develop	http://www.montpelier-vt.org/778/Planning
Net Zero Montpelier**	https://netzeromontpelier.org/
One Taylor Street: Multi-modal Ctr	http://www.montpelier-vt.org/DocumentCenter/View/1002
Parcel Boundary Map	http://www.montpelier-vt.org/documentcenter/view/1393

* a plan that culminated in the development of the current district heat plant that went into operation in 2015

** connecting energy committee efforts and other organizations to create NZM

Photography of Montpelier can be viewed online at: <http://netzerovt.org/photo-gallery/>

APPENDIX E:

SUPPORTING RESOURCES

DESIGN COMPETITION RESOURCES

ANR BioFinder—Map Resources	http://biofinder.vt.gov/
<i>Back from the Brink: Saving America's Cities by Design</i>	
Watch First: Portland, OR	https://www.youtube.com/watch?v=EsDJCGpLNiw
Suisun City, CA	https://www.youtube.com/watch?v=-9O4EqOj0mo
Curitiba: World's Greenest City?	https://www.youtube.com/watch?v=tLjhSon0Ltw
DOE Releases Net Zero Definition	http://energy.gov/eere/buildings/articles/doe-releases-common-definition-zero-energy-buildings-campus-and
The General Theory of Walkability:	https://www.youtube.com/watch?v=uEkgM9P2C5U
The Happy City Experience	https://www.youtube.com/watch?v=7WiQUzOnA5w
Interdisciplinary Charrette:	https://www.youtube.com/watch?v=undsvk0sLcl
Smart Cities: Cities of Tomorrow	https://www.youtube.com/watch?v=YGOVEvm7dm0
What is Net Zero?	http://en.openei.org/wiki/Definition:Net_Zero

BACKGROUND

Over the last fifteen years, the City has developed several planning studies that have not come to fruition. Greening America's Capitols continued exploring the reclaiming of parking areas for public use. In addition, the Taylor Street development is in process, but not yet developed. Below are studies that have gone before, and it is NZV's hope that the successful design team can inspire the public commitment and energy necessary to create the future model sustainable City.

Capital District Master Plan (2000)	http://www.montpelier-vt.org/DocumentCenter/Home/View/1409
Compilation of earlier studies	http://www.montpelier-vt.org/582/Reports-Studies
Greening America's Capitals	http://www.montpelier-vt.org/DocumentCenter/Home/View/195 http://www.montpelier-vt.org/408/Greening-Americas-Capitals
Growth Center Application	http://www.montpelier-vt.org/410/Growth-Center-Designation http://www.montpelier-vt.org/DocumentCenter/View/878
Parking Garage Study (2004)	http://www.montpelier-vt.org/646/Draft-Report
Vine Street Pedestrian Bridge	http://www.montpelier-vt.org/633/Vine-Street-Pedestrian-Bridge-Project

BOOKS & SOURCES

There are numerous resources that Net Zero Vermont suggests for reading which will be added in the future. The following publication, however, is a must read to better understand Energy 101 and embedded energy defined.

Our Renewable Future, Laying the Path for One Hundred Percent Clean Energy, Heinberg, Richard and David Fridley (2016) Post Carbon Institute, 225 p. Read at: <http://ourrenewablefuture.org/>



NET ZERO VERMONT



“We are excited to see the creative designs that will result from the Net Zero Vermont Sustainable Montpelier Design Competition. The new ideas and innovative solutions will help define a positive path towards meeting our 2030 goal.”

— Kate Stephenson, Montpelier Energy Advisory Committee Chair