

## APPENDIX A – USDN GHG Reduction High Impact Practices

### Transportation

1. **Major Public Transit Investments** - Make public transit investments that significantly enhance coverage, service quality, frequency, and/or speed (e.g., bond for major transit infrastructure).
2. **Major Bike and Ped Investments** - Expand and improve bicycle and pedestrian facilities, connectivity, convenience, and/or safety in a manner that significantly increases the % of trips taken by walking or biking.
3. **Community Electric Vehicles Adoption** - Require and encourage EV adoption through local codes, infrastructure planning, and promotion.
4. **Autonomous Vehicles Planning** - Establish strategy and/or policy to avoid negative GHG impacts and achieve positive GHG impacts of autonomous vehicles.

### Energy Supply

5. **Renewable Energy Procurement for Government Operations** - Power government operations from renewable energy via on-site installation or off-site procurement.
6. **Utility-Scale Renewable Energy** - Engage local utility or community choice program (as applicable) to increase renewable energy offerings to all community members.
7. **Community Installation of Renewable Electricity** - Establish local incentives (e.g., solar rebates) and/or a bulk purchasing program (e.g., Solarize, community solar program) for on-site renewable energy at a scale catalyzing major new local investment.
8. **State/Federal Advocacy on Energy Supply and Efficiency** - Engage in state public utility commission (or equivalent agency) proceedings to advocate for significant renewable energy (e.g., via state RPS, net metering tariffs) and building energy efficiency standards and funding.

### Building Energy Use

9. **Electrification of Building Energy Systems** - Develop a local strategy and enact programs to drive replacement of fossil fuel-fired space and water heating systems with high efficiency electric heat pump and similar technologies in new and existing buildings.
10. **Energy Benchmarking for Large Buildings** - Require large commercial and multi-family buildings to benchmark and report their energy performance.
11. **Energy Upgrades at Trigger Events for Large Buildings** - Require large commercial and/or multifamily buildings to perform energy upgrades achieving an average of ~15%+ energy savings by a certain date or at certain trigger events (e.g., time of sale, change of occupancy).
12. **Zero Net Energy in Private New Buildings** - Adopt policies or programs to cause new buildings in the community to achieve near-zero net energy/fossil fuel-free performance.

### Consumption and Waste Reduction

13. **Organic Waste Management** - Implement organics (food waste, yard waste) collection in commercial, single-family, and multi-family properties, including food waste collection in high-volume locations.
14. **Construction Waste Management** - Require recycling of construction and demolition waste.

## APPENDIX B – Descriptions of All Practices Originally Considered

### Energy Supply

- 1) Purchase renewable energy equivalent to ~100% of municipal operations energy use.
- 2) Install solar panels on ~all viable municipal facilities.
- 3) Require or otherwise direct municipally owned utility (e.g., via local renewable portfolio standard) to source ~50%+ of power from renewable energy sources by ~2030.
- 4) Require a privately owned utility (e.g., via franchise agreement) to source ~50%+ of electricity for the community from renewable energy sources.
- 5) Enact a community choice energy program delivering ~50%+ renewable energy to customers throughout the community.
- 6) Establish a community-shared renewable energy program (e.g., community solar) at a scale engaging ~5%+ of community members.
- 7) Engage in state public utility commission (or equivalent agency) proceedings to advocate for significant renewable energy requirements (e.g., via state RPS, net-metering tariffs).
- 8) Establish local incentives (e.g., solar rebates) and/or a bulk purchasing program (e.g., Solarize) for on-site renewable energy at a scale catalyzing major new local investment.
- 9) Establish a group renewable energy procurement effort by high-use customers.
- 10) Adopt a local requirement (through building code or similar) for solar-ready or on-site solar where viable in new construction.
- 11) Establish requirements or a voluntary program to support on-site energy storage (e.g., batteries).
- 12) Pursue municipalization of energy utility.
- 13) Invest in local waste-to-energy heat recovery, and/or clean district energy plants.

### Energy Demand in Existing Buildings

- 1) Upgrade major existing municipal facilities to achieve ~zero net energy performance through energy efficiency upgrades and on-site renewable energy.
- 2) Implement a strategic energy management program for all major municipal operations.
- 3) Convert ~90%+ of street lights and traffic signals to LED technology.
- 4) Require large commercial buildings to benchmark and report their energy performance.
- 5) Require large multifamily buildings to benchmark and report their energy performance.
- 6) Require large commercial buildings to conduct audits and/or retro-commissioning.
- 7) Require large multifamily buildings to conduct audits and/or retro-commissioning.
- 8) Require large commercial and/or multifamily buildings to perform energy upgrades achieving an average of ~15%+ energy savings by a certain date or at certain trigger events (e.g., time of sale, change of occupancy).
- 9) Create voluntary large commercial and multifamily energy upgrade program(s) (e.g., offering incentives, tech assistance) that achieve deep energy savings (~25%+) in ~20%+ of large buildings.
- 10) Create voluntary large commercial and multifamily energy upgrade program(s) (e.g., offering incentives, tech assistance) that achieve lighter energy savings (~10%) in ~50%+ of large buildings.
- 11) Require homes to obtain a home energy score (analogous to benchmarking) by a certain date or at a certain trigger event (e.g., time of sale, major renovation).

- 12) Create voluntary home energy upgrade program(s) that will achieve deep energy savings (~25%+) in ~20%+ of homes.
- 13) Create voluntary home energy upgrade program(s) that will achieve lighter energy savings (~10%) in ~40%+ of homes.
- 14) Require homes to perform energy upgrades achieving an average of ~15%+ energy savings by a certain date or at certain trigger events (e.g., time of sale).
- 15) Establish PACE or other convenient financing options for multifamily, commercial, and residential retrofits.
- 16) Develop a local strategy and enact programs to drive thermal decarbonization/electrification (e.g., replacement of fossil fuel-fired furnaces, boilers, and domestic hot water systems with electric heat pump technologies or other renewable options) of existing buildings over time.
- 17) Develop a building staff training program for large privately-owned commercial and multifamily buildings and/or require building staff be trained in energy efficiency best practices.
- 18) Engage in state public utility commission (or equivalent agency) proceedings to advocate for major new energy efficiency funding, programs, or standards (e.g., building electrification).

### **Energy Demand in New Buildings**

- 1) Require major new municipal buildings to achieve ~zero net energy/carbon performance.
- 2) Require new private development of certain size/building type in the community to achieve ~zero net energy/carbon performance.
- 3) Require ~all new construction and major renovation to use high efficiency electric/fossil fuel-free technologies for heating, cooling, and hot water.
- 4) Enact market incentives (e.g., zoning or financial) that achieve ~25%+ better energy performance than existing local code in new building space.
- 5) Increase enforcement of energy code requirements to achieve ~100% compliance for new construction and substantial renovations.

### **VMT Reduction**

- 1) Make public transit investments that significantly enhance coverage, service quality, frequency, and/or speed (e.g., bond for major transit infrastructure).
- 2) Expand and improve bicycle and pedestrian facilities, connectivity, convenience, and/or safety in a manner that significantly increases the % of trips taken by walking or biking.
- 3) Enact car-free zones or cordon pricing in core areas.
- 4) Enact higher parking prices in core locations and/or eliminate parking requirements in dense areas of the community.
- 5) Establish regional road pricing (e.g., toll roads, dynamic pricing, congestion pricing).
- 6) Establish policies to optimize urban freight movement (e.g., time of delivery, location consolidation).
- 7) Regulate private ride-hailing services such as Uber and Lyft (e.g., collecting revenue from, vehicle efficiency standards).
- 8) Establish strategy and/or policy to improve GHG impacts of autonomous vehicles.

### **Transportation Electrification**

- 1) Require ~50%+ of all new municipal fleet vehicles be EVs.
- 2) Establish a transition plan to convert transit bus fleets to ~100% electric.
- 3) Partner with major local commercial fleet operators to transition to EVs.
- 4) Create voluntary program(s) capable of significantly accelerating community EV adoption (e.g., via incentives, technical assistance).
- 5) Restrict non-EVs from certain areas of the city and/or traffic lanes.
- 6) Require EV charging infrastructure in new construction and major renovation and/or integrate charging requirements in zoning codes.
- 7) Significantly expand EV charging infrastructure in publicly accessible locations.

### **Waste and Consumption**

- 1) Promote consumption of low-carbon food choices.
- 2) Promote consumption-reduction approaches such as sharing and re-use.
- 3) Invest in waste management infrastructure capable of separating ~all organics from the waste stream.
- 4) Implement food waste-reduction and collection programs that capture ~80%+ of organics from all high-volume locations (e.g., restaurants).
- 5) Implement curbside organics (food waste, yard waste) collection for single-family residential properties.
- 6) Implement organics (food waste) collection for multi-family residential properties.
- 7) Require recycling of a significant percentage of construction and demolition waste.
- 8) Require that structures that meet certain requirements (e.g., age, size, condition) be deconstructed rather than demolished.
- 9) Significantly improve methane recapture at landfills.
- 10) Require significant municipal operations and community events to achieve ~zero waste.