South Lincoln Redevelopment Project
South Lincoln Redevelopment Master Plan

The proposal goes through the southern block, starting at the intersection and moving toward the northern block. The plan is divided into two main phases: the north area and the south area. The north area focuses on residential development, while the south area includes commercial and mixed-use spaces.

In the north area, there are plans for the construction of new apartment buildings and townhouses. The designs include green spaces and community amenities to enhance the quality of life for residents. The south area, on the other hand, is envisioned as a commercial hub with retail stores, restaurants, and office spaces. The plan also includes provisions for pedestrian and bicycle pathways to encourage sustainable transportation options.

Overall, the South Lincoln Redevelopment Master Plan aims to rejuvenate the neighborhood by providing modern living options, creating job opportunities, and fostering a sense of community. The plan takes into account the unique characteristics of the area, such as its historical significance and proximity to transportation networks, to ensure that the development is both functional and aesthetically pleasing.
South Lincoln Master Plan

11th Avenue 10th Avenue “Promenade” Navajo Street Mariposa Street

Osage Street

Source: Mithun
South Lincoln Master Plan

Sustainable strategies

Green Community

- Energy Star homes
- Green Communities Rating
- Community-wide recycling program
- Bike trails and lanes to promote health and reduce driving
- Promote an active lifestyle:
  - Walking/exercise loop through community
  - Children’s play spaces
  - Outdoor activities
- Community Gardens
- Reduce energy and water demand with efficient appliances
- Use trees, roof overhangs and awnings to provide shade and reduce cooling demand
- Reduce stormwater runoff with bioswales, plantings and green roofs
- High-walking, transit village with pedestrian safe street design
- Use native landscaping

Bright Green Goals

- Reuse rainwater for irrigation
- Join the stormwater re-use pilot program
- Aggressive district-wide renewable energy (PV and geothermal)
- LEED-Neighborhood Development (ND) Platinum
- LEED-New Construction (NC) Platinum for buildings
- Electric car sharing with smart grid technology
- Bike fleet
- Local food production and healthy food and gardening classes
- Control light pollution

Source: Mithun
ENERGY
Master Plan Energy Strategies

- 2 megawatt PV system to supply 80% of developments energy demand – all rooftop level and up to 75% of roof space
- Assumed a 5% increase for construction of PV, solar thermal and geothermal units
- High efficiency heating and cooling systems will reduce consumption by 40%
- Building orientation designed for passive solar design
- Distribution of lower and higher structures to provide solar access
- Geothermal system with district distribution to lower energy by 50%
  - Each building to have wells to support building load
Buildings by Type
Energy Strategies at Different Scales

District Scale

Building Scale

Resident Scale
Projected Energy Use

**Annual Load Totals**

<table>
<thead>
<tr>
<th>Annual Energy Required (MWh)</th>
<th>Electricity</th>
<th>Heat (including DHW)</th>
<th>Space Cooling</th>
<th>Domestic Hot Water</th>
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<tbody>
<tr>
<td>Electricity</td>
<td>5446</td>
<td>7582</td>
<td>2491</td>
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**Peak Demand (kW)**

<table>
<thead>
<tr>
<th></th>
<th>Electricity</th>
<th>Heat (including DHW)</th>
<th>Space Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Demand (kW)</td>
<td>994</td>
<td>4,636</td>
<td>1,839</td>
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Source: Group 13 Analysis
<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Systems to Analyze</th>
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<tbody>
<tr>
<td>District Heating/DHW</td>
<td>Wood Chip Boiler</td>
</tr>
<tr>
<td>District Heating and Cooling</td>
<td>GSHP</td>
</tr>
<tr>
<td>Cogen</td>
<td>NG Gas Turbine</td>
</tr>
<tr>
<td></td>
<td>NG IC Engine</td>
</tr>
<tr>
<td></td>
<td>NG Fuel Cell</td>
</tr>
<tr>
<td>Trigen</td>
<td>Same generation systems as Cogen</td>
</tr>
<tr>
<td>Electricity Only</td>
<td>PV</td>
</tr>
<tr>
<td>DHW Only</td>
<td>SHW</td>
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Source: NREL Analysis
Transportation and Connectivity
Master Plan Transit Goals

- Reducing vehicle speeds
- Improving pedestrian safety
- Enhancing neighborhood-serving transit service
- Ease of bike use for all residents
Mobility and Infrastructure Goals

- Improve pedestrian and bicycle connections
- Bus service extended to 10th and Osage station
- Extend Osage Street South
- Re-open 11th between Kalamath and Lipan
- Implement bike lanes on 13th Avenue
- 10th Avenue shuttle
- Traffic calming for Santa Fe / Kalamath
10th Avenue Promenade
10th Avenue Promenade

Existing CL

20' Sidewalk / Urban Design (South Side of Street)
8' Parking Lane
10' Travel Lane
10' Travel Lane
8' Parking Lane
20' Sidewalk / Urban Design (North Side of Street)

4' Decorative Paving
36' Existing Curb to Curb
80' Right of Way

10th Avenue Promenade
10th and Santa Fe (looking Northeast)
Pedestrian Crossing at 10th and Santa Fe
Stormwater Management
South Lincoln Master Plan

- Maintenance of all water quality facilities would be apportioned between RTD, the City of Denver (if applicable) and DHA based on benefits realized. Maintenance could be assured by an independent entity or agreement, as required by the City.
- Accommodation of existing and proposed wet and dry utilities according to current standards, or according to modifications in existing street standards.
- Implementation of flow reduction techniques (such as bioswales, disconnected impervious areas, green roofs) credited toward reduction of stormwater detention and treatment volumes required.

Proposed Stormwater Treatment (within R.O.W)
1. Stormwater collects on rooftops of new buildings
2. Stormwater is conveyed, via internal and/or external downspouts.
3. Stormwater is daylighted to landscape planters adjacent to buildings.
4. Stormwater is conveyed to infiltration gardens, via sidewalk chases. Alternatively stormwater can be piped from downspouts directly to infiltration garden, underneath sidewalk.
5. Rainwater falls on streets and is conveyed in curb and gutter
6. Stormwater runoff enters planter area through curb opening.
7. Stormwater surface flows through planter, or conveyed via chase, to stormwater infiltration garden.
8. The infiltration garden, also known as a porous landscape detention area, filters stormwater through plant uptake and infiltrates through a special soil medium. Infiltration gardens should be designed to pond no more than 12’ deep.
9. Storm underdrains (required for soils with low permeability) and overflow devices convey stormwater to existing storm pipes located in the street.

Curb openings allow stormwater to be conveyed from the street's gutter to stormwater infiltration planters.

Stormwater infiltration planters along the street provide treatment and storage of street runoff. The infiltration planters narrow vehicular street widths to provide traffic calming and safer streets.

A stormwater infiltration garden located along this residential street treats runoff from the street and roofs of adjacent buildings.
Curtis Street Watershed Hydrology

Vision Land Analysis
LID Strategies

Water Quantity and Rate
- Green roofs
- Rooftop detention
- Porous landscape detention
- Rainwater capture
- Porous pavement
- Consolidated detention along western edge of development (scaled for full development)
- Grass buffers and swales
- Tree box filters
- Re-vegetation

Water Quality – Source Control
- Infiltration planters, in right of way along all streets
- Detention / sedimentation facilities
- Sand filters
Green Infrastructure along Mariposa Street
3. Right of Way Stormwater Strategies
Porous Landscape and Grass Buffer
Porous Pavement
Permeable Paving: Portland, OR
Grass Buffers and Swales
## Detention Volumes

<table>
<thead>
<tr>
<th>Description</th>
<th>Volume in Pervious Areas (AF)</th>
<th>Depth in Pervious Areas (ft)</th>
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<tbody>
<tr>
<td>Detention in Pervious Areas Only</td>
<td>3.3</td>
<td>0.8</td>
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<tr>
<td>Rooftop Detention</td>
<td>2.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Rooftop Detention, Pervious Pavement in Parking Lots and Alleys</td>
<td>2</td>
<td>0.5</td>
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<tr>
<td>Rooftop Detention, Pervious Pavement, 50% Plaza areas with PICP</td>
<td>1.7</td>
<td>0.42</td>
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<tr>
<td>Rooftop Detention, Pervious Pavement, 50% PICP, Green Roofs</td>
<td>1.5</td>
<td>0.37</td>
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Watershed Hydrology Map – Proposed Conditions