Session Handouts
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for

Baby, It’s Code Outside! Special Zoning and Design Issues for Northern and Winter Climates
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Nora L. Shepard, AICP, has been a planner for more than 20 years. She is currently employed as the Principal Planner for Summit County, Utah. Most recently, she was a Senior Associate at Bear West Company, a small environmental and community planning firm in Salt Lake City, Utah. Ms. Shepard worked for Park City Municipal Corporation for 15 years. She was Planning Director of Park City for five years and was the Special Projects Planner dealing with complex and politically charged projects. Prior to her experience in Park City, she worked for the Tahoe Regional Planning Agency as a project planner and in Humboldt County, California, as a circuit planner. She graduated from Humboldt State University in Northern California in Natural Resource Planning. She has been very active in APA, including two terms as president of the Utah Chapter of the American Planning Association, and founding member and treasurer of the Resort and Tourism Division. She served on the Board of Directors for Western Planner and received its "Planner of the Year" award in 1997.
Baby, It’s Code Outside!
Zoning and Design Issues for Northern and Winter Climates

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Why are Northern/Winter Communities Different?

- Reduced Light
Why are Northern/Winter Communities Different?

• Extreme Precipitation
Common Concerns in Northern Climate Communities

- Increased costs for snow management
- Psychological impacts of reduced daylight
- Limited outdoor activities
- Decreased mobility
- Increased heating costs
But that’s not the whole story!
Key Planning/Design Issues in Northern Communities

- **Solar Access**
  - Solar Access for Buildings ("passive solar")
  - Solar Collection Devices ("active solar")

- **Site Design**
  - Snow Storage
  - Exterior Lighting

- **Architectural Design**
  - Roof Design for Heavy Snow Loads
  - Pedestrian-friendly Building Design
Solar Access:
Ensuring Better Solar Access for New Development

- Limited sunlight is a major quality of life concern in northern communities.
- Standards/guidelines can help provide maximum solar access both for solar energy purposes and for the general health/safety/welfare.
Solar Access:
Ensuring Better Solar Access for New Development

• Tool: Require east-west street orientation in new subdivisions.
  – Maximizes amount of building walls with direct southern exposure
  – Small degree of variation possible from true east-west depending on latitude
  – Allow deviations for topography, natural features, existing street patterns, etc.
  – North-south streets are next-best option
Solar Access:
Ensuring Better Solar Access for New Development

• Tool: On east-west streets, increase lot depth and reduce frontage.
Solar Access:
Ensuring Better Solar Access for New Development

• Tool: On east-west streets, reduce front yards and increase rear yards to maximize solar access.
  – On north-south streets, make same corrections in side yards
Reducing Setback to Equalize Access

A) Traditional setback and unequal access

B) Reducing setback to equalize access
Solar Access:
Ensuring Better Solar Access for New Development

- Tool: On east-west streets, allow zero north-lot lines, maximizing the southern exposure.
  - Effectively clusters homes near front or rear edges of lot.
  - Potential downside: noise and privacy concerns because of homes closer to street (could be address through screening requirements).
Solar Access:
Ensuring Better Solar Access for New Development

- **Tool: Examine maximum building height limits.**
  - Ensure they’re consistent with what’s on the ground.

- **Tool: Require shading plans.**
  - Require of subdivisions and large developments to show impacts of development on solar access.

- **Tool: Adopt subdivision performance standards.**
  - Example: Require 75 percent of homes in subdivision to have south rooftop solar access and 40 percent of homes to have south wall solar access.

- **Tool: Consider impacts on solar access in granting variances.**
Solar Access Issues to Consider

• What areas of your community are most likely to face issues of solar access?
  – Certain zoning districts?
  – Certain development situations?

• Possible conflicts with solar access:
  – Tree preservation
  – Landscaping
  – Height limits that allow tall buildings
  – High-density residential districts
Site Design

- Exterior Lighting
- Snow Storage
- Landscaping
Site Design
Exterior Lighting
Site Design
Exterior Lighting

• Key Issues:
  – Require shielding for parking lot lamps. Full cut-off luminaires are best. Minimizes light trespass and increases security.
  – Adopt quantifiable limits on brightness (typically measured in footcandles).
  – Allowable lamp types (e.g., metal halide vs. sodium).
  – Limit lighting pole heights (e.g., 25 feet).
  – Restrict parking lot lighting after business hours.
  – Consider different standards for different areas (though difficult to administer).
Site Design
Exterior Lighting
Site Design
Exterior Lighting
Site Design
Snow Storage
Site Design
Snow Storage

• Key Issues:
  – Snow storage areas should be clearly identified on site plan.
  – Locations away from pedestrian circulation or street frontages are preferred.
  – Should be planted in grasses and perennials only (may be difficult in more constrained locations and on infill sites).
  – Consider snow clearance/storage routines (can harm vegetation and obscure pedestrian walkways).
  – Planted medians can be prime locations for snow storage, but only if they’re not too small and narrow to provide much storage capacity.
  – Use light poles and islands to provide clues to parking spot locations when snow covers parking space lines.
Site Design

Snow Storage
Site Design

Snow Storage
Site Design
Snow Storage

BEST
POSSIBLE
AVOID
Site Design

Snow Storage
Architectural Design

- Roof design for heavy snow loads
- Pedestrian-friendly building design
Architectural Design
Roof Design

• Key Issue:
  – Adopt a consistent roof design:
    Snow retention versus snow storage.

  Both have benefits if done properly.
Architectural Design
Roof Design

• Snow Retention v. Snow Shedding
Architectural Design

Roof Design

• Problems with snow-shedding roofs: Obstructions
Architectural Design

Roof Design

• Problems with snow-shedding roofs:
  Ice damming
Architectural Design
Pedestrian-Friendly Building Design

• Key Issues:
  – Snow-shedding roofs should direct snowfall away from parking areas, entrances, and other spaces used by pedestrians.
  
  – Require canopies or awnings across 60 percent of any ground-floor, street-facing, or parking lot-facing façade.
  
  – Encourage weather protection for pedestrians along the portions of building facades that contain bus stops, taxi and drop zones, valet parking, bicycle parking, etc.
  
  – Require south-facing primary entrances where possible.
  
  – Minimize wind effects on and around buildings by using projections such as awnings, balconies, and marquees to protect public spaces and entrances, etc.
Architectural Design
Pedestrian-Friendly Building Design
Other Issues for Northern/Winter Climates
Other Issues for Northern/Winter Climates
Your Community?

• Standards or guidelines for:
  – Solar access?
  – Snow storage?
  – Site design?
  – Architectural design standards for heavy snow?
Baby, It’s Code Outside!
Zoning and Design Issues for Winter Climates

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Background

- Lake Tahoe
- Park City/Summit County, Utah
- Climate Trends
Issues to be Discussed

- Architectural Design Challenges
- Site Planning
- Public Amenities and Public Improvements
- Conflicts with New Urbanism Concepts
Architectural and Building Design Considerations

- Snow Shedding off roofs!!!
- Decks and entryways
- Structural concerns
- Commercial Structures
- Residential Structures
Site Planning Issues

- Setbacks
- Parking
- Signs
Public Improvements

- Street Design
- Snow Removal Responsibilities
- Sidewalks and pedestrian circulation
- Fire Hydrants
- Conversion of Cabin Areas
Conflicts with New Urbanism

- Narrow Streets
- Homes close together
- Alleys
- Front doors vs vehicular access
- Parking
Conclusions

- Summer and Winter are VERY different
- Watch your head!!
- We may not always be in a drought
- Winter can and will be inconvenient
- Maintenance has to be addressed
- Be patient and accepting