RESOLUTION NO. 692-R

A RESOLUTION ADOPTING THE FINDINGS AND CONCLUSIONS IN SUPPORT OF ADOPTION OF PROPOSED SOLAR ACCESS PROTECTION ORDINANCES.

WHEREAS, It is state and federal policy to promote energy conservation and the use of renewable resource, and Oregon statutes authorize local governments to encourage, protect and provide solar access; and

WHEREAS, The Comprehensive Plan in the City of Troutdale promotes energy conservation, the increasing importance of solar orientation in subdivisions, and recommends that development of solar access ordinances be considered; and

WHEREAS, Traditional property law principals do not protect solar energy access in the absence of a private agreement or public law that requires such protection. Existing land use laws in the City of Troutdale do not protect solar energy access. Private easements and incentives in those laws to encourage the use of solar energy have not resulted in significant protection of solar energy access.

WHEREAS, Without protection of solar access, many opportunities to use solar energy have been lost forever and will continue to be lost in the future.

WHEREAS, Twenty-two local governments and interested agencies, firms organizations, and individuals in the Portland-Vancouver Metropolitan Area have joined together with the goal of developing uniform land use ordinances to protect solar access throughout the area.

WHEREAS, A detailed program of technical research and public involvement was conducted. The ordinances were drafted by consensus with broad and representative input from local governments and the private development community. The benefits of implementing the ordinances were determined to exceed the costs, and the ordinances were determined to comply with state and local laws and the eight design principles set forth early in the process.

WHEREAS, Representatives of the City of Troutdale participated in that process, and the Planning Commission has been briefed regularly about the project. The Planning Commission also has reviewed and considered the proposed solar ordinances and supporting data in a public hearing for which timely public notice was given as required by law; and

WHEREAS, The Planning Commission is in accord with the majority of the findings, conclusions, and recommendations of the project and recommends adoption of the New Development Standards Ordinance, the Solar Balance Point Recommendations and the Definitions Ordinance with a recommendation to table consideration of the Solar Access Permit Ordinance until a later date.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF TROUTDALE THAT:

The Findings and Conclusions (Exhibit A - attached) in support of adoption of three ordinances, New Development Standards, Solar Balance Point Recommendations and Definitions be adopted.

ADOPTED BY THE COMMON COUNCIL OF THE CITY OF TROUTDALE THIS 22 **DAY OF** MARCH, **1988.**

YEAS 5

NAYS 0

ABSTAINED 0

Sam K. Cox

Sam K. Cox, Mayor

Date Signed: March 24, 1988

ATTEST:

Valerie J. Raglione
City Recorder

CO24|11

FINDINGS AND CONCLUSIONS IN SUPPORT OF ADOPTION

OF SOLAR ACCESS PROTECTION ORDINANCES

I. There is a public need for and a public health, safety and general welfare interest in having local governments adopt solar access protection regulations.

A. Traditional property law does not protect solar energy access in the absence of a private agreement or a public law that requires such protection. Existing local land use laws in the Portland-Vancouver Metropolitan Area do not expressly protect solar energy access. Private easements and incentives in those laws to encourage the use of solar energy have not resulted in significant protection of solar energy access.

B. Because local laws do not require protection of solar energy access, many cost-effective energy savings measures and future options have been lost forever. They will continue to be lost in the future unless new land use laws are adopted. The potential impact of this loss amounts to millions of dollars during the life of new development in the region and to a waste of non-renewable resources.

C. Federal laws and plans promote conservation of energy by such means as solar access protection.

1. The Northwest Electric Power Planning and Conservation Act of 1980 directed the Northwest Power Council and Bonneville Power Administration to give priority to conservation and renewable resources in their resource planning and acquisition.

2. The Northwest Power Plan recommends "acquisition of cost-effective lost opportunity resources which, if not secured now or in the near term, could be lost forever to the region. The primary example is incorporating energy efficient features into new buildings when they are constructed, since many of these measures cannot be installed later and the buildings will consume energy long after the surplus is over."

The Northwest Power Plan supports adoption of solar access ordinances by local governments region-wide, because it develops the capability to deliver energy conservation in the future.

The Northwest Power Planning Council's Model Conservation standards include minimum solar access requirements for sun-tempered and passive solar homes.

D. State statutes recognize there is a public interest in protecting solar energy access and authorize local governments to enact solar access protection regulations.

1. ORS 469.010 declares that "continued growth in demand for non-renewable energy forms poses a serious and immediate, as well future, problem. It is essential that future generations not be left a legacy of vanished or depleted resources, resulting in massive environmental, social, and financial impact. It is the goal of Oregon to promote the efficient use of energy resources and to develop permanently sustainable energy resources."

2. ORS 227.190 and 215.044 authorize city and county government bodies, respectively, to adopt and implement ordinances "protecting and assuring access to incident solar radiation" provided they do not conflict with acknowledge comprehensive plans, and land use regulations. State statutes provide that a solar access ordinance "shall provide and protect to the extent feasible solar access to the south face of buildings during solar heating hours, taking into account latitude, topography, micro climate, existing development, existing vegetation and planned uses and densities.

"The governing body shall consider for inclusion in any solar access ordinance, but not be limited to, standards for: (a) the orientation of new streets, lot and parcels; (b) the placement, height, bulk and orientation of new buildings; (c) the type and placement of new trees on public street rights of way and other public property; and (d) planned uses and densities to conserve energy, facilitate the use of solar energy, or both."

3. Oregon Statewide Planning Goal 13 is to conserve energy. It promotes land use controls that "maximize the conservation of all forms of energy, based upon sound economic principles." It directs that comprehensive plans "should consider the potential of renewable energy sources, including solar energy, and may use implementation techniques which affect such factors as lot size, siting, building height, bulk, surface area, and availability of light."

E. The City of Troutdale's Comprehensive Plan contains the following policies that promote energy conservation and solar energy:

1. The City will offer incentives for use of more energy efficient techniques though the Development Ordinance and Development Standards.

2. The City recognizes the increasing importance of solar orientation in the subdivision and design review processes.

3. The City shall consider the development of a solar access ordinance.

4. Promote energy-efficient land use location.

5. Promote the use of alternative energy sources.

II. Federal, state and local governments, with help from interested members of the public and the development industry, created and carried out a project to address the need for solar energy access protection in the Portland-Vancouver metropolitan area. The project provides a foundation based on which local governments can assume authority provided by statute to encourage, protect and provide solar access. The project is summarized in the following findings.

A. In 1985, twenty-one governments in the Portland-Vancouver Metropolitan Area, including the City of Troutdale, passed resolutions to join together to ask the Bonneville Power Administration (BPA) for funds to develop solar access protection laws that would be considered for adoption by each government in the project. BPA agreed to fund the 2-year project. It was administered by the Washington Energy Office and Oregon Department of Energy. A twenty-second government, the City of Portland, joined the project late in 1987. The 21 original project participants are listed below:

Beaverton	Milwaukie
Canby	Multnomah County
Clackamas County	Oregon City
Clark County	St. Helens
Cornelius	Scappoose
Fairview	Tigard
Forest Grove	Troutdale
Gresham	Vancouver
Happy Valley	Washington County
Lake Oswego	West Linn
	Wilsonville

B. A structure for the participants in the project was created. It is summarized below and described more in Addendum A.

1. Each participating government appointed 2 or 3 "liaisons" to the project, generally one each from the government body, planning commission, and planning staff. The liaisons participated on project committees,

attended project seminars, regularly received information about the project, and relayed information and concerns between the project staff and their government.

2. The liaisons in turn appointed a 12-member Steering Committee of local government officials. The Steering Committee appointed technical committees, managed the project, undertook public involvement and public attitude studies, synthesized the work of the technical committees, and made policy choices involved in the project, such as adopting design principles and recommending the solar access protection ordinances.

3. The Steering Committee appointed liaisons, industry representatives, and other people with related skills and experienced to two technical committees. The committee members represented a balanced cross section of interests and operated by consensus. The Research Committee was responsible primarily for research about the factors that affect solar access and about the benefits of solar access protection. The Ordinance Committee was responsible for researching existing land use laws, drafting model solar access protection ordinances, and estimating the costs of implementing those ordinances.

C. Public involvement activities were undertaken. These included an attitude survey and a review of studies about public and builder attitudes toward solar energy. Project staff prepared a quarterly publication describing project activities and meeting schedules. It was sent by mail to about 1000 residents, firms and agencies in the area. Also governing bodies and planning commissions throughout the area received briefings about the project periodically; their meetings were open to the public. Press released were distributed prior to each meeting of the Steering Committee and before other project events. All meetings of the committees were open to the public. Several briefings and work sessions were held with groups and individuals from the development industry. Broadcast media coverage and a community cable television videotape also informed the public about the project.

D. Drafts of the solar access ordinances were evaluated by the Ordinance Committee. Also they were tested by eleven jurisdictions and industry officials by applying them to "real world" land use requests in those jurisdictions. As a result, the ordinances were changed to be more clear, to ease administration, and to comply more with the project design principles.

E. The following reports and studies were produced and considered during the project, and form the basis for the technical recommendations in the solar access protection ordinances. They are incorporated herein by reference; several re summarized in attachments for convenience.

1. Research Committee, An Analysis of 402 Sites to Determine the Major Factors Influencing Solar Access in the Portland-Vancouver Metropolitan Area, June, 1987, summarized in Addendum B.

2. Research Committee, Potential Benefits of Solar Access, September, 1987, summarized in Addendum C.

3. Pihas, Schmidt, Westerdahl, Solar Energy, and Energy Conservation: Research Compilation, May, 1987, summarized in Addendum D.

4. Ames Associates, Solar Friendly Tree Report, June 1987, summarized in Addendum E.

5. Ordinance Committee, New Development Standard Cost Report, January, 1988, summarized in Addendum F.

6. Ordinance Committee, Potential Costs of the Solar Balance Point Standard, January, 1988, summarized in Addendum G.

7. Columbia Information Systems, Public Attitude Survey, March 1987.

8. Fleitell, Paula, Survey of Experiences in Communities with Solar Access Ordinances, August, 1987.

9. Boe and Tumidaj, Comparative solar Setback Analysis of 80 Metro Area Site Plans, April, 1987.

10. Portland Bureau of Planning, Solar Access Ordinance Evaluation: Support Document, August, 1987.

11. Columbia Information Systems, A Survey of the Building Community on the Solar Access Ordinances, n.d.

12. Benkendorf Associates, Plat Re-design Case Studies: Waterhouse, Dawn Crest, and Bridgeport, February - June 1987.

13. Benkendorf Associates, Solar Re-Design Cost Comparison - Waterhouse and Dawn Crest, May, 1987.

14. Mark Johnson, BPA, Residential Standards Demonstration Program Solar Access Report (Draft), December, 1987.

15. Salem Dept. of Community Development, Solar Access Program final Performance Report, October, 1987.

16. Bureau of Governmental Research & service, An Evaluation of the City of Portland's solar Access Ordinances, 1986.

17. Larry Epstein, PC, Summary of Land Use Ordinances for Jurisdictions in the Metro Solar Access Project, 1987.

18. Conservation Management Services, Impact of the Solar Balance Point Standard, January, 1988.

F. The most important products of the project are the four solar access protection ordinances.

1. One ordinance, the Solar Access Standard for New Development, applies to land divisions and planned unit developments in single family zoning districts and to single family detached dwelling developments in any zone. It promotes proper lot orientation for solar access as well as generally preventing structures and some new trees from significantly shading neighbors.

   The basic requirement for new developments is that 80 percent of lots front on streets oriented within 30 degrees of a true east-west line and have a north-south dimension of 90 feet or greater. This will maximize the number of lots with good solar access characteristics and minimize the potential problems of protecting solar access to homes on north-south streets. Two alternative requirements and provisions for exemptions and adjustments also are included.

2. A second ordinance, the Solar Balance Point Standard for Existing Lots, applies to new structures and additions in single family zoning districts and to single family detached dwellings in all zones. It prevents new structures from significantly shading neighbors and balances solar rights and development rights of affected property owners. It also applies to certain trees planted on lots that are created after the effective date of the ordinance.

   The Solar Balance Point Ordinance protects full south wall solar access on lots that have good solar characteristics, and allows more shade on lots with poor solar access characteristics.

3. A third ordinance, the Solar Access Permit Ordinance, enables the jurisdiction to issue a permit on a case by case basis at the request of a property owner in an existing neighborhood to prevent neighbors from planting new trees that would significantly shade a solar energy feature on the applicant's property.

4. A fourth ordinance contains definitions used throughout the other three ordinances.

5. The ordinances protect homes in new and existing developments from shade caused by "solar unfriendly trees" and has been developed to assist in landscaping lots to protect solar access without significantly restricting the public's range of landscape options.

6. The Solar Access Ordinance for New Development and the Solar Access Balance Point Ordinance are mandatory in the sense that development subject to either of the two ordinances must comply with them or comply with standards for exemptions and adjustments. The ordinances do not require the use of solar energy features; they merely protect solar access so that the option to use solar energy in the future is preserved.

III. Early in the project, the Steering Committee adopted eight "design principles". The participating governments and Home Builders Association of Metropolitan Portland agreed that the solar access protection program they would draft should comply with these principles. The program also has to comply with applicable state statutes and with the local comprehensive plan. The eight design principles commit project participants to draft a solar access program that will:

A. Be efficient to administer and comply with and easy to enforce;

B. Have a clear rationale supported by credible project research;

C. Provide certainty to property owners regarding the extent and limitations of their sun and shade rights;

D. Provide flexible enough standards to deal with a variety of development situations, including providing exceptions for difficult circumstances;

E. Provide an easy means to inform the public about its provisions and effects;

F. Provide effective solar access protection for properties;

G. Provide equitable treatment to all property owners; and

H. Be coordinated and balanced with other local ordinances, standards and policies.

IV. The proposed ordinances are consistent with and help implement federal law and comply with applicable state statues and comprehensive plan policies, based on the following.

A. The proposed ordinances are consistent with the Northwest Electric Power Planning & Conservation Act of 1980 and with the Northwest Power Plan, because they promote use of energy efficient features and design principles in new residential development and will help new residential development comply with the Northwest Power Planning Council's Model Conservation Standards.

B. The proposed ordinances are consistent with state enabling legislation, because they protect solar access to south-facing windows during winter to the extent feasible, considering existing and potential physical features and land uses.

C. The proposed ordinances are consistent with the statewide planning goals listed below. Remaining statewide planning goals are not relevant.

Goal 1 (Public Involvement), because of the public involvement conducted as part of the project and the public hearings conducted by the planning commission and governing body:

Goal 2 (Land Use Planning), because they result from a consensus-oriented planning process in which issues and needs were identified, existing conditions were inventoried, alternatives were considered, and recommendations were made based on broad public review of options:

Goal 5 (Open Spaces, Scenic and Historic Areas and Natural Resources) and Goal 13 (Energy Conservation), because they conserve nonrenewable energy resources and promote use of renewable energy resources; and

Goal 10 (Housing), because the ordinances do not reduce permitted densities or reduce availability of housing for any segment of the public and they do not significantly increase the cost of housing. On the contrary, solar access can reduce operating costs for heating and cooling of residential structures, thereby reducing housing costs.

V. The proposed ordinances are also consistent with the "design principles" adopted by the Steering Committee, based on the following findings.

A. The ordinances are efficient to administer and comply with and easy to enforce because:

1. The ordinances reflect the experience of other jurisdictions with solar access protection laws, and include features that avoid problems and complexities in those cases.

2. The ordinances have been tested by the development industry and by eleven local governments in the project. The lessons learned from this preliminary testing have reduced uncertainty and increased the ease of administration.

3. The project staff will train staff and the public and development community before the ordinances are implemented, reducing the time and effort it takes to implement and comply with the ordinances.

4. The costs of implementing the ordinances have been estimated. Compared to costs of other land use regulations, the proposed ordinances should not increase the cost of complying with those regulations. The ordinances allow, if compliance does increase development costs in a given case by a minimum amount, adjustments can be granted.

5. The ordinances include clear and objective approval standards, reducing the need for administrative discretion and extensive public review procedures. All terms are defined and many are illustrated by drawings, reducing the potential for confusion and misunderstanding. Exceptions and adjustments are provided for, reducing the need for variances to the proposed ordinances. The ordinances minimize new procedures; rather they are to be integrated into existing land use procedures, reducing the potential for delay or increased administrative cost.

6. Research showed a voluntary or incentive-based solar access program is more costly to implement and more difficult to evaluate than a mandatory one.

B. The proposed ordinances have a clear rationale supported by credible project research.

1. The research shows there is a need for solar access protection regulations. Existing development codes of participating governments do not protect solar access. Therefore, many solar access opportunities in the Metro Area have been lost. If existing development trends toward smaller lots and taller houses continue without regard for solar access, many more opportunities will be lost in the future.

2. The research shows it is practicable to develop land so that less solar access is lost.

   a. While only 40% of existing lots have optimum solar orientation and access, research shows new developments in the region generally can be designed so that at least 80% of new lots can have optimum solar orientation and access without significantly increasing development costs.

   b. Increased solar access can result in substantial energy savings over the life of a typical residential structure. BPA research shows homes with good solar access use 10% less energy for heating than other homes. Project research shows solar access protection will cause average savings of about $1150 in heating costs over the life of a home and can provide as much as $4,000 in savings. The gross energy savings to owners of new houses in the region from implementing the ordinances is estimated to be $150 million over the next twenty years. Savings could increase to $325 million if more people use solar energy design principles and features in new construction.

   c. The solar access ordinances cost the consume about $20.00 per lot in a new development or $55.00 per new structure in an infill development. They cost the government $4.00 to $7.00 per lot.

3. Project research shows solar energy access protection has values that are difficult to quantify, but benefit from adoption of the proposed ordinances. For instance the proposed ordinances will protect solar access not only for immediate use for passive solar space heating but also for the present and future use of solar water heating and the future use of photovoltaic cells.

   Also solar access protection provides certainty that makes solar energy a more reliable source of alternative energy. It establishes a qualified property right to

solar access. That can motivate people to use solar energy. In fact research shows that people use solar energy several times more in a jurisdiction that has solar access regulations, compared to a jurisdiction that does not. Lastly solar energy is environmentally non-polluting. Use of solar technology promotes a wide range of positive environmental values.

4. Research about existing solar access conditions in the Portland-Vancouver Metropolitan Area shows:

   a. The major factor influencing solar access orientation of homes and windows is street orientation. Compared to homes on north-south streets, homes on east-west streets:

      (1) Had less shading;

      (2) Had more south window area for solar heating benefits;

      (3) Had more south roof, yard and wall area to accommodate solar additions;

      (4) Are shaded more from on-site sources under a homeowner's own control; and

      (5) Are less affected by slope, the placement and design of neighboring homes, and north-south lot dimension.

   b. Solar access to homes on north-south streets is significantly affected by such factors as north-south lot dimension, setback, height, and ridgeline orientation of neighboring homes.

   c. The historical trend has been toward smaller lots and two-story homes. If this trend continues, solar access increasingly will be affected by neighboring homes, particularly on north-south streets.

   d. There is no discernible trend toward development on steeper slopes.

   e. There are some minor differences in solar access between counties. However, they were not of a nature as to require different policy treatment between counties.

5. The research showed a voluntary or incentive-based solar access program does not have demonstrable results.

Therefore the research does not provide a rationale for a voluntary or incentive=based program. The research shows the force of law is needed to provide effective solar access protection over time.

6. Public attitudes surveys and other research indicates strong and consistent public support for solar access. The public attitudes surveys completed for the project showed that:

   a. The majority of people favored solar energy and/or solar access in their answers to all of the survey questions, and on many questions, the rate of support for solar access exceeded 70 percent.

   b. The vast majority of people will accept local solar access regulations, and they place a positive economic and non-economic value on lots and homes with good access to direct sunlight.

C. The proposed ordinances provide certainty to property owners regarding the extent and limits of their rights to cast shade and to receive direct sunlight.

   1. The standards are clear and objective, and depend on such tangible measures as street orientation, lot dimensions, house height and setback.

   2. Property owners can reasonably predict the amount of shade that will be allowed to fall on their property.

   3. Property owners and the private sector development community can reasonably predict the development guarantees the ordinances provide.

   4. A mandatory program provides the same guarantees to owners of all similarly situated properties. Property owners do not have certainty about their solar rights or duties if a solar program is voluntary or incentive-based.

D. The proposed ordinances are flexible enough to deal with a variety of development situations.

   1. The more difficult the situation, the more lenient the standard; the easier the situation, the more solar access to be protected.

   2. The ordinances provide exceptions for difficult circumstances, including steep slopes, pre-existing road

and lotting patterns, pre-existing vegetation, and circumstances where a negligible solar benefit would be protected by meeting the standards.

3. Normal avenues of appeal or variance are still available to persons seeking relief from the ordinances.

E. The solar access protection ordinances and associated training provide an easy means to inform the public about its provisions and effects.

1. Extension public information programs were conducted with interested groups during the project.

2. A training and education program for local government staff and the building industry will be available during a 90-day period between ordinance adoption and implementation.

3. Information about the solar access standards for new development can be provided to developers during the pre-application conference for new subdivisions and PUDs.

4. Notice to future purchasers of property subject to the solar ordinances will be provided by filing appropriate records with the title of each lot affected by the New Development and Solar Access Permit Ordinances.

5. Public information materials will be developed by the project consultants and made available to local governments for distribution.

6. Notice of and information about the solar access standards will be provided with every building permit application.

F. The proposed ordinances will be provided with effective solar access protection to properties.

1. The ordinances protect solar access to the extent feasible in keeping the Research Committee's analysis of the major factors affecting solar access.

2. The ordinances protect solar access between 10:30 a.m. and 1:30 p.m. on January 21. This is the level of solar access required for homes to qualify under the solar options of the Model Conservation Standards.

3. It is estimated that the number of lots meeting minimum solar access criteria can be increased from 40 percent

to 80 percent in new developments by implementing the Solar Access Ordinance for New Development.

4. The proposed ordinances will provide substantial economic and non-economic benefits over time.

5. The ordinances are mandatory, because voluntary and incentive-based programs, such as the one in Salem and the ones reported in the Washington State Energy Office report, do not result in significant solar access protection. For instance, after 18 months of operation, the Salem program had distributed more than 4000 brochures and guidebook, held meetings attended by 950 people including 129 home builders, and reviewed 252 building permits. Nevertheless Salem could not show that any of their good work informing the public resulted in more solar access or solar access protection, and no one applied for the incentives in the program. Jurisdictions with mandatory programs, such as in Ashland and central Oregon, showed positive results.

G. The proposed ordinances provide equitable treatment to all property owners.

1. The standards benefit both the subject property and neighboring properties and require consideration of effects of solar access on both properties.

2. Lots are categorized by clear, well-defined criteria. Lots of similar characteristics must meet the same standards, and are guaranteed the same levels of solar access. A mandatory solar access program is recommended because it treats similarly situated properties the same; a voluntary or incentive-based program does not.

3. Existing development densities are protected.

4. Owners of all lots to which the ordinances apply are guaranteed the right to build a structure that produces as much shade as a 30-foot tall building in the middle of every lot.

5. Existing and solar-friendly trees are exempt from the standards.

6. Exemptions are allowed when benefits can be shown to be insignificant, as when there is pre-existing shade from other sources or the area being protected is an unheated area of the home such as a garage.

7. The ordinances protect solar access in new and existing development settings. Since the potential benefits of solar access are available in both settings, to do otherwise would provide inequitable benefits.

H. The proposed ordinances are coordinated and balanced with other local ordinances, standards and policies.

1. The standards help implement comprehensive plan policies to conserve energy. Also they do not reduce permitted density, require use of environmentally sensitive or significant land, or violate other plan policies.

2. The standards modify existing standards and land use tools for the additional purpose of protecting solar access in a manner that is consistent with existing land use laws.

3. Exceptions are provided to allow for cases where conflicts arise between solar access and other comprehensive plan ordinances or policies. Such conflicts include density, affordable housing, tree preservation, infrastructure needs, consistency with surrounding street layouts, natural features and topography.

4. The ordinances are consistent with implementation techniques specifically allowed in Oregon statutes and LCDC Goal 13. Also, the ordinances rely predominantly on existing review procedures.

5. The ordinances will provide a consistent set of solar access standards throughout the region, resulting in more coordinated development practices and more consistent development patterns and facilitating ease of implementation for builders who work in more than one jurisdiction in the region.