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FORESTRY AND VEGETATION MANAGEMENT SPECIALISTS



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- Tree Protection Plan-

KINGSWOOD APARTMENTS

Kingswood Drive SW
Tumwater, Washington

Prepared for: Glenn Wells Architects

Prepared by: Washington Forestry Consultants, Inc.

Date: July 6, 2022

The project proponent is proposing to build a 180-unit multi-family apartment complex on 3.1-acres at Kingswood Drive SW in Tumwater, WA. Washington Forestry Consultants, Inc. was retained to examine the trees on the proposed project parcel.

Scope of Work

The purpose of the evaluation was to:

1. Complete an inventory of existing trees, and
2. Make recommendations for retention and/or replacement as per Chapter 16.08.070, the Tumwater Tree Protection Ordinance.
3. Prepare a new tree protection plan.

Methodology

WFCI has evaluated all trees 6 inches and larger diameter at breast height (DBH) in the proposed project area, and assessed their potential to be incorporated into the new project. The parcel was located and identified on plans provided to WFCI. The tree evaluation phase used methodology developed by Matheny and Clark (1998)¹ and the International Society of Arboriculture.

¹ Nelda Metheny and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees during Land Development. International Society of Arboriculture, Champaign, IL.

Soils and Site Description

The project includes parcel number: 12703240100 located in Sec. 03, T17N, R2W, W.M., City of Tumwater, Thurston County, Washington.

The topography of the project site is flat. It is bordered by Kingswood Drive SW to the north, Tye Drive SE to the east, a Toyota dealership to the south, and a new multi-family development to the west. The parcel is sparsely stocked with scattered open grown trees. The ages of the trees are approximately 10 to 40 years old. There are no improvements on the site.

According to the Thurston County Soil Survey, the one soil type located on the site is the Nisqually loamy fine sand, a very deep, somewhat excessively drained soil found on terraces. It formed in sandy glacial outwash. Permeability is moderately rapid in the surface layer and very rapid in the substratum. Available water capacity is moderate and effective rooting is over 60 inches. Windthrow hazard is slight under normal conditions. Droughtiness during the summer months may cause seedling mortality.

Figure 1: Soil map of Kingswood Apartments Site.



73 - Nisqually loamy fine sand

Existing Trees

There is one forest type on the 3.1-acre project area.

Type I: This type contains all trees in the project area. There are three black locust (*Robinia pseudoacacia*) and 10 shore pine (*Pinus contorta*) trees growing in the type. The trees range from 5 to 20 inches DBH. The condition of the trees ranges from ‘Dead’ to ‘Fair’. Black locust however, is considered to be an invasive species and not recommended for retention on new projects. The following Table 1 is a list of all trees on the site.

Table 1. Inventory of trees on Kingswood Drive Apartments Site.

#	Species	DBH (in.)	Condition	Savable Based on Tree Condition Only? Yes or No	Minimum Root Protection Zone (ft.) if Saved	Project Plan Save or Remove	Notes
1	Shore Pine	8 – 12	Poor	No		Remove	Poor form, broken tops
2	Shore Pine	9 – 12	Dead	No		Remove	
3	Shore Pine	9	Fair	Yes	6	Remove	
4	Shore Pine	8	Fair	Yes	6	Remove	
5	Shore Pine	12	Fair	Yes	8	Remove	
6	Shore Pine	10 – 20	Fair	Yes	17	Remove	3 stems
7	Shore Pine	6	Fair	Yes	6	Remove	
8	Shore Pine	9	Fair	Yes	6	Remove	
9	Shore Pine	7	Fair	Yes	6	Remove	
10	Shore Pine	6	Fair	Yes	6	Remove	
11	Black Locust	7,8	Poor, invasive;	No		Remove	Poor form, growing in fence
12	Black Locust	6 – 7	Poor, invasive;	No		Remove	Poor form, growing in fence
13	Black Locust	5,6	Poor, invasive;	No		Remove	Poor form, growing in fence

The understory of the type is grass, Scotch broom (*Cytisus scoparius*), and Himalayan black berry (*Rubus armeniacus*).



Photo 1. View of cover type I and trees 1 & 2 on Kingswood Apartments Site.

Historic Trees. -- No Historic Trees occur on the site.

Specimen Trees. – No trees were considered to be specimen trees.

Off-Site Trees. – No offsite trees will be adversely affected by this project.

Tree Protection Areas

Due to poor tree quality, the invasive nature of black locust, and the tree locations being under the footprint of improvements, no trees are planned to be retained.

Minimum Stocking Calculation

The City of Tumwater Tree and Vegetation Protection Ordinance requires that 20% of the existing trees (or 12 trees per acre, whichever is larger) be saved on site.

The following is a summary of the proposed tree retention:

Total Project Acreage:	3.1 acres
Total # of Healthy Trees on the Project	8 trees
Required Retention (12 Trees/acre) *	37 trees
Required Retention (20%): **	2 trees
Planned Tree Retention:	0 trees
Planned Tree Removal	13 trees
Shortage of Required Retention (37 - 0)	37 trees

* Used for required tree retention calculation.

** Ordinance requires 20% or 12 trees/acre, whichever is greater – Sample calculation.

According to TMC 16.08.070.R.4: “In situations where a parcel of land to be developed does not meet the retention standards above in an undeveloped state, the applicant shall be required to reforest the site to meet the applicable standard outlined above at a 1:1 ratio as a condition of project approval.” A Tree Replacement Plan is necessary since planned retention is short of the minimum stocking requirement by 37 trees. The Tumwater tree ordinance requires that 37 trees be replanted to meet the 1:1 replacement standard. This plan is providing 80 replacement trees in the landscaping plan.

Tree Protection during Construction

If trees were saved, the tree protection fence should be orange mesh plastic, and be erected after logging and clearing, but prior to grading. No trenches, cuts, fills, drainage modification, irrigation lines, storing of materials, equipment operation, or other activity should occur within the critical root zone of protected trees. The tree protection and silt fences should be installed at least 5 feet beyond the driplines of trees to be saved.

If there are to be encroachments on any large diameter trees due to any change in the site plan, each tree should be evaluated to determine the impacts on tree survival and safety prior to the impact.

Pruning

If trees were retained, then all trees to be retained near structures, streets, or other targets should be crown cleaned to remove dead, dying, diseased, structurally defective, or extra branches. Crown raising or side trimming may be necessary to provide building and ground clearances for sidewalks and parking lots. All pruning should conform to the ANSI A300² standards for proper pruning, and be completed by or supervised by an ISA Certified Arborist®.

Landscape Installation

Grading, rototilling, and installation of irrigation lines should not impact the critical root zones (CRZ) if trees are saved. Noxious vegetation such as blackberry and Scotch broom should be selectively removed from tree tract areas by hand.

If additional fill is required to achieve desired grades, no more than 20% of the protected trees root zone should be covered with fill depths over 2 inches. If impacts must exceed 20% of the CRZ, the tree should be further evaluated by a Washington Forestry Consultants, Inc. (WFCI) to determine if removal and replacement is more appropriate.

Sequence of Events for Tree Protection Activity

1. Stake the clearing limits.
2. Complete logging.
3. Complete construction.
4. Plant replacement trees.

Tree Species for Inter-planting

We recommend that the following conifer tree species be used to interplant any gaps in the tree protection areas:

- Western redcedar
- Douglas-fir
- Incense-cedar
- Austrian pine

The trees should be at least 6-7 foot tall balled and burlap trees with well-developed central leaders.

The landscape plan (prepared by others) should incorporate some deciduous accent and shade trees to provide a mix of color, texture, and size across the site. The street tree

² American National Standard ANSI A300 (Part 1). 2008. Pruning for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning). Tree Care Industry Association. Londonderry, NH. 13 pgs.

selection should correspond to the Tumwater Comprehensive Street Tree Plan recommendations. All tree species should be planted and mulched according to industry standards.

Summary

We propose that **no trees be retained** on the site due to poor tree condition or the invasive nature of the species. Other trees are located under the footprint of improvements and are not particularly significant. A landscape plan using quality tree species will provide high quality trees in 10 years - Versus dying retained trees that are not quality today.

A total of 37 trees are required to be planted to reforest the site to meet the TMC requirement. A total of 80 trees are being planted on the site.

We have suggested some suitable tree species for tree replacement. Payment for the shortfall of planted trees can, with approval, be made to the Tumwater Tree Fund.

Please give us a call if you have any questions.

Respectfully submitted,

Washington Forestry Consultants, Inc.



Galen M. Wright, ACF, ASCA
ISA Bd. Certified Master Arborist PN-129BU
Certified Forester No. 44
ISA Tree Risk Assessor Qualified
ASCA Tree and Plant Appraisal Qualified

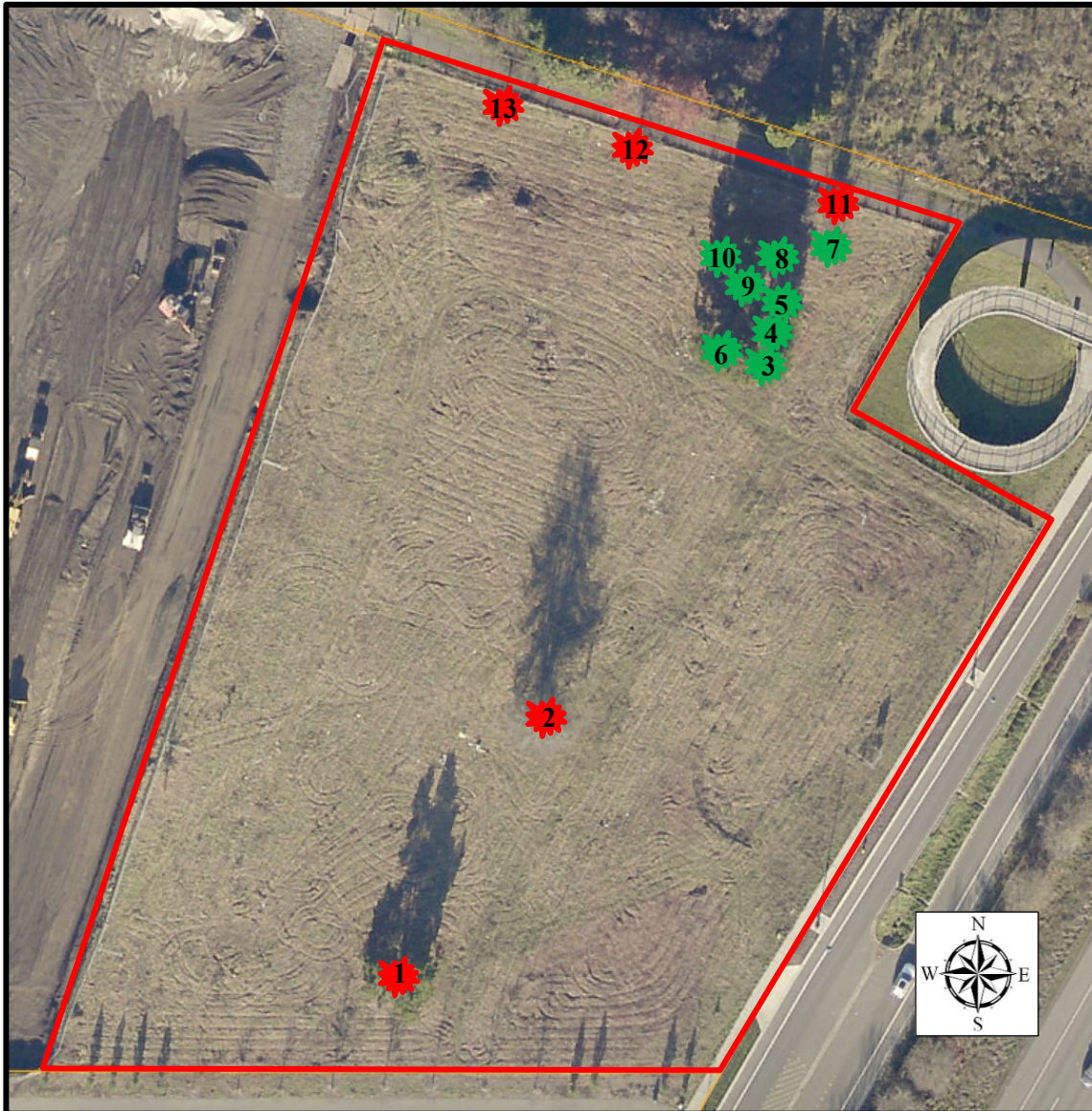


Joshua Sharpes
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APPENDIX I

Kingswood Drive Apartments Site Tree Locations

(Thurston County Geodata 2020)



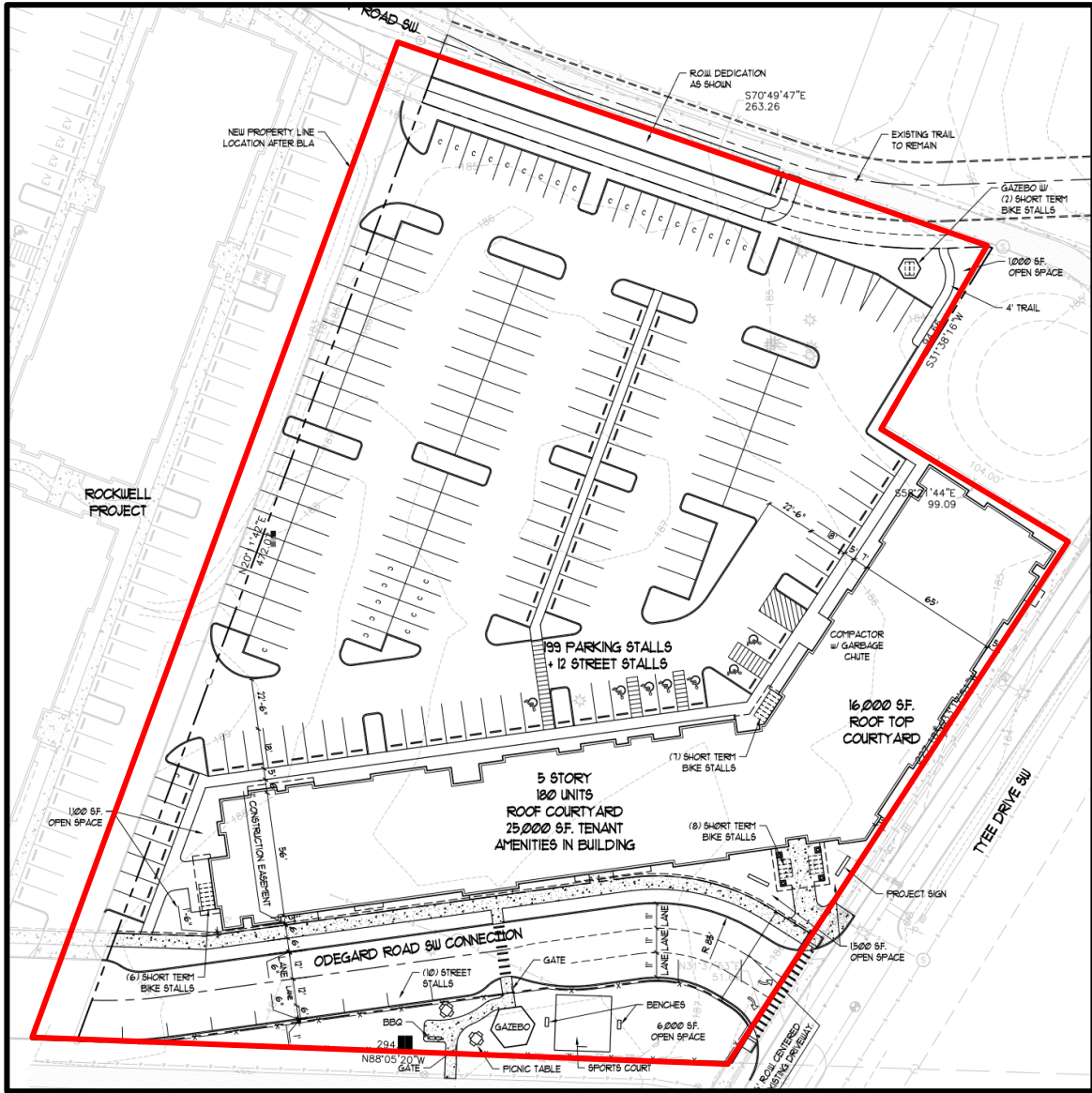
— Project and Cover Type Boundary

★ Healthy Tree

★ Unhealthy Tree

APPENDIX II

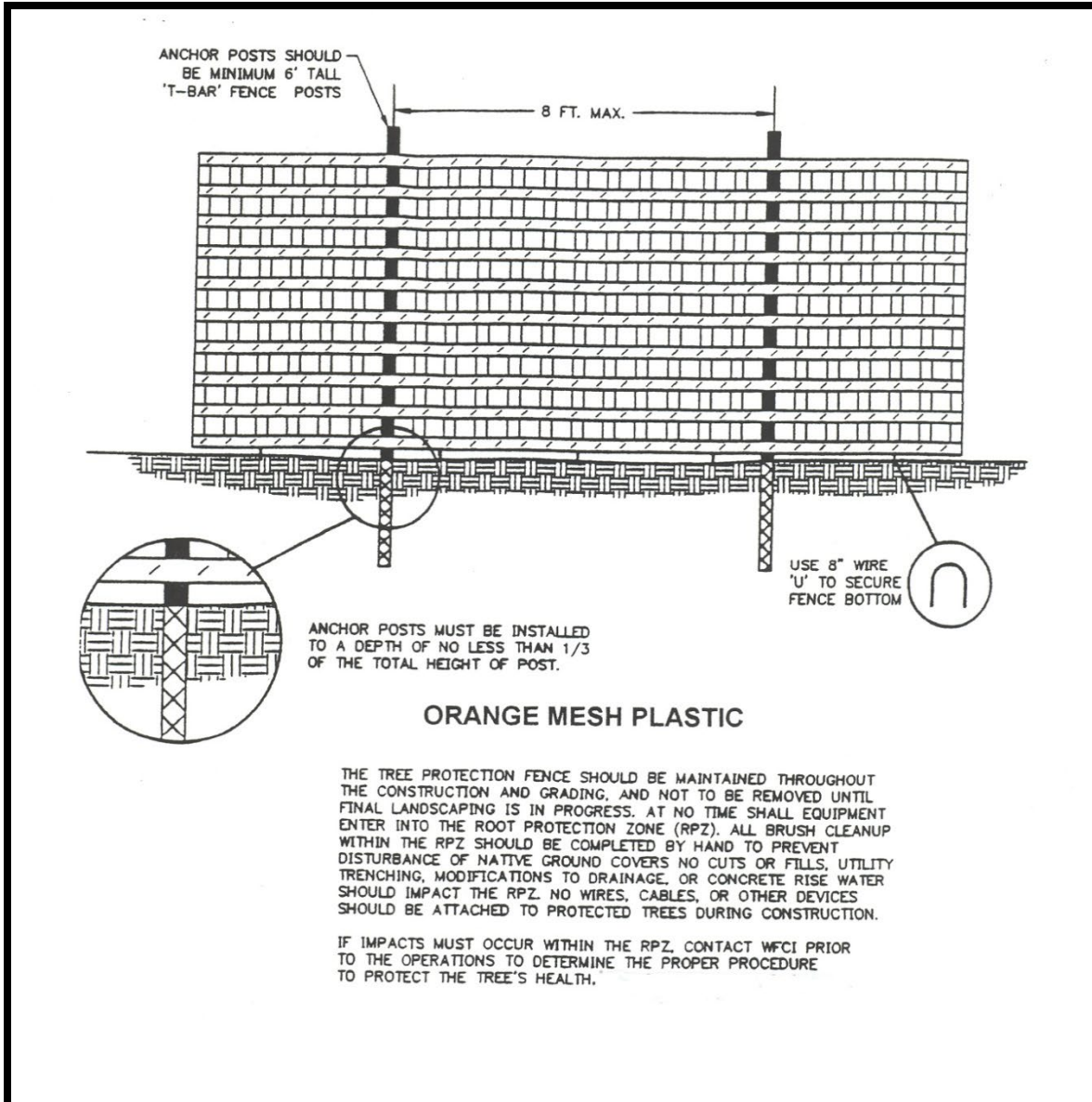
Kingswood Drive Apartments Site Plan



— Project Boundary

APPENDIX III

Tree Protection Fence Detail



APPENDIX IV

Assumptions and Limiting Conditions

- 1) Any legal description provided to the Washington Forestry Consultants, Inc. is assumed to be correct. Any titles and ownership's to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
- 2) It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, unless otherwise stated.
- 3) Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, Washington Forestry Consultants, Inc. can neither guarantee nor be responsible for the accuracy of information.
- 4) Washington Forestry Consultants, Inc. shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
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- 6) Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc.
- 7) Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc. -- particularly as to value conclusions, identity of Washington Forestry Consultants, Inc., or any reference to any professional society or to any initialed designation conferred upon Washington Forestry Consultants, Inc. as stated in its qualifications.
- 8) This report and any values expressed herein represent the opinion of Washington Forestry Consultants, Inc., and the fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence neither of a subsequent event, nor upon any finding in to reported.
- 9) Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
- 10) Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.

Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.