

Designing Policy to Engage Okanagan Homeowners in Wildfire Risk Mitigation

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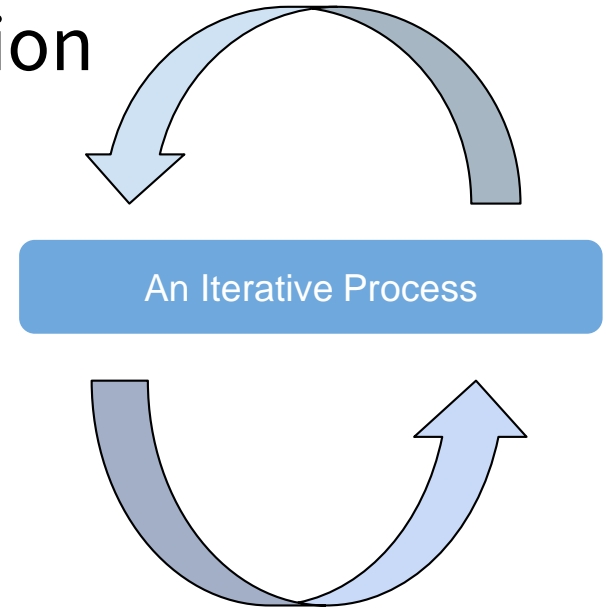
SFU Supervisor: Dr. Kora Debeck

BCP Partner: Pacific Forestry Centre, Canadian Forest Service, Ministry of Natural Resources



Policy Analysis Framework

1. Research/Synthesize Information
2. Define Problem
3. Generate Policy Options
4. Select Criteria and Measures
5. Assess Options
6. Craft Recommendation





Background: Wildfire in the Okanagan

Hot dry climate

Population pressures--over half million by 2030

70 % fires caused by humans

Jurisdictional complexity

Uneven uptake of fire prevention methods



Climate Change in the Okanagan

Wildfire Management Branch

(2014):

Fire area will increase from 7961
to 19076 hectares

Length of fire season will increase
by 30%

Fire severity will increase by 30%-
95%



Background

Wildland Fire Management Working Group

Strategic Directions 2014-2019

Strategic priority:

To build community protection and prevention programs such that residents and communities are engaged in wildfire prevention and loss mitigation

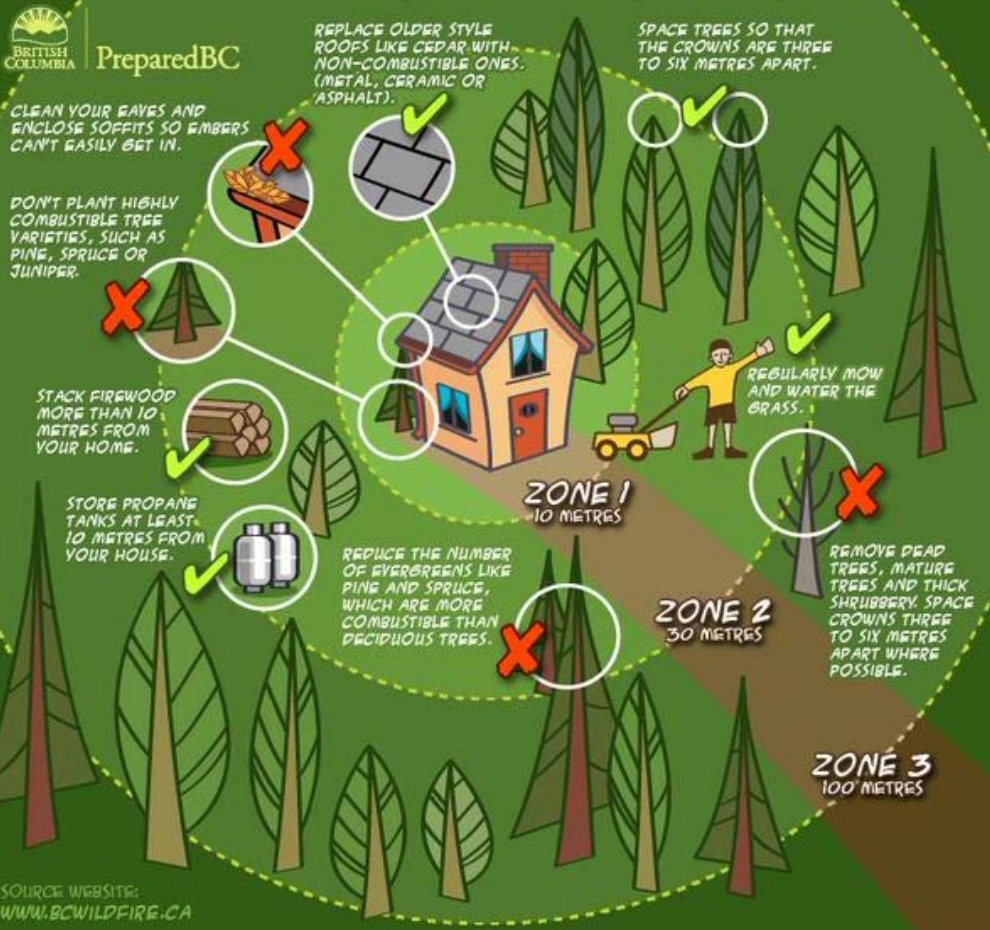
BC Forest Practices Board

Fuel Management in the Wildland Urban Interface – Update in 2015

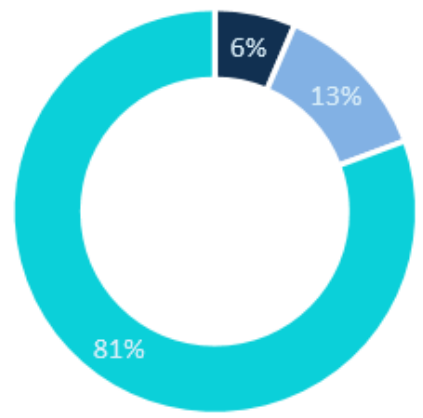
Homeowner engagement one of five areas to improve

FireSmart in Nine Easy Steps

THE DO'S AND DON'TS OF PROTECTING YOUR HOME FROM WILDFIRE



Are you a member of FireSmart?



- Yes
- No, but I know about it
- No, and I don't know anything about it

Policy Problem

Climate change and population growth are increasing the risk posed by wildfire on the Okanagan's wildland urban interface. Homeowner participation in mitigation is an essential component of a successful WUI fire management regime.

Engagement of Okanagan homeowners in wildfire prevention and mitigation efforts is too low.



Methodology

Literature review

Qualitative semi-structured interviews

Case studies

Online homeowner survey

31 completed responses

Interviewees

- Kelly Johnson, Partners in Protection/ FireSmart Canada
- Jim Mottishaw, former Manager for Penticton Fire Zone
- Peter Hisch, Superintendent of Fuel Management
- Peter Dooling, Professor Emeritus, Faculty of Forestry, UBC
- Rick Euper, Fire and Life Safety Educator, Kelowna Fire Department
- Peter Anderson, SFU Associate Professor in Faculty of Communication



Case Study Results

Lake Edith, Alberta: on-the-ground community events

Lower Mainland Agricultural Land Reserve: model for forestry reserve

City of Toronto: Leaf Collection services

City of Kelowna: bylaws for property treatment and development

Taijing National Park, Taiwan: eco-tourism communications

Colorado: Wildfire Partners Program, homeowner certification and insurance

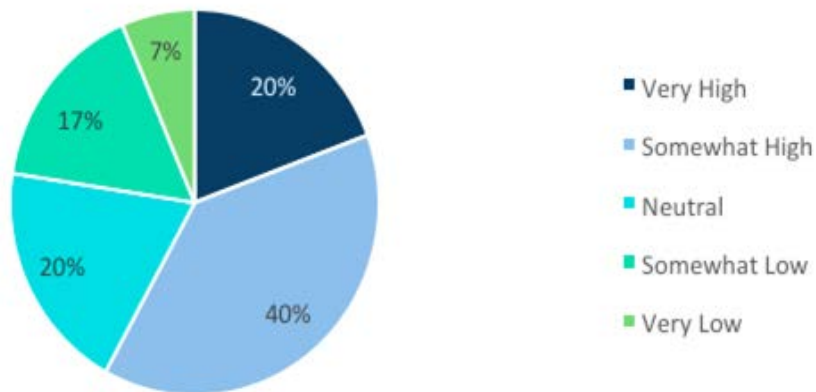
State of California: Class A rooftops, property tax fee, and building bylaws

State of Colorado and Utah: Income tax credit program

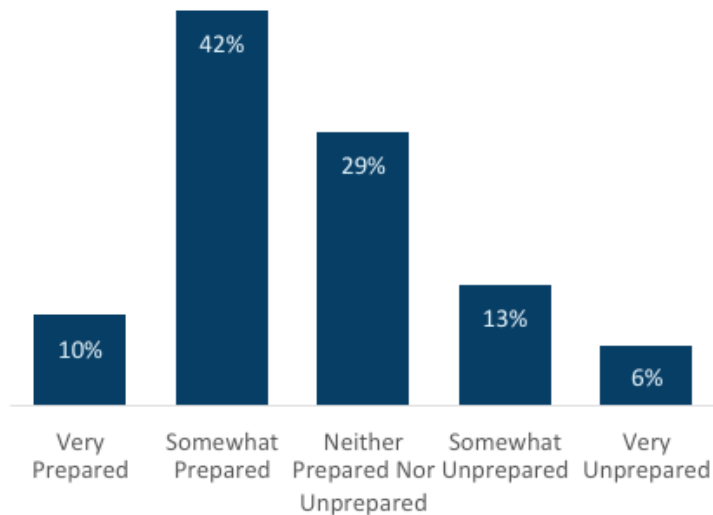


Survey Results

HOW WOULD YOU RATE THE RISK THAT WILDFIRE POSES ON YOUR PROPERTY?



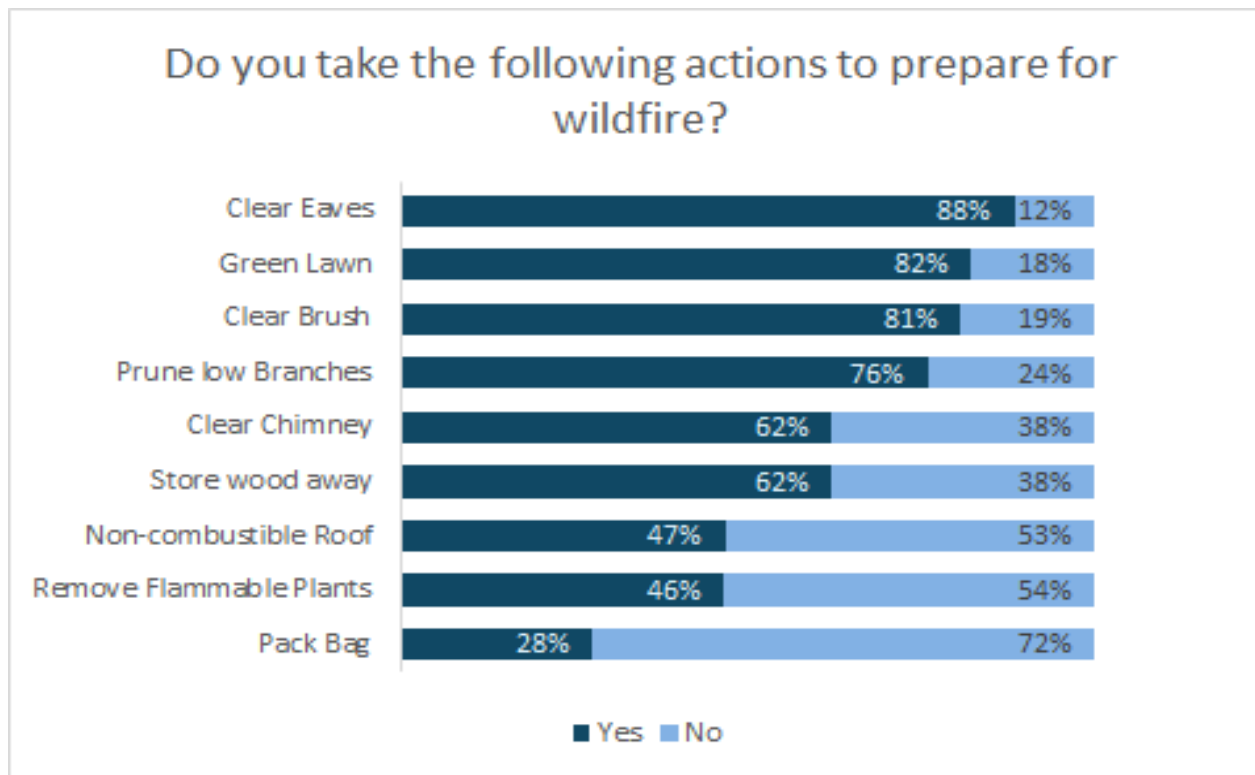
In your opinion, how prepared is your property in case of wildfire?





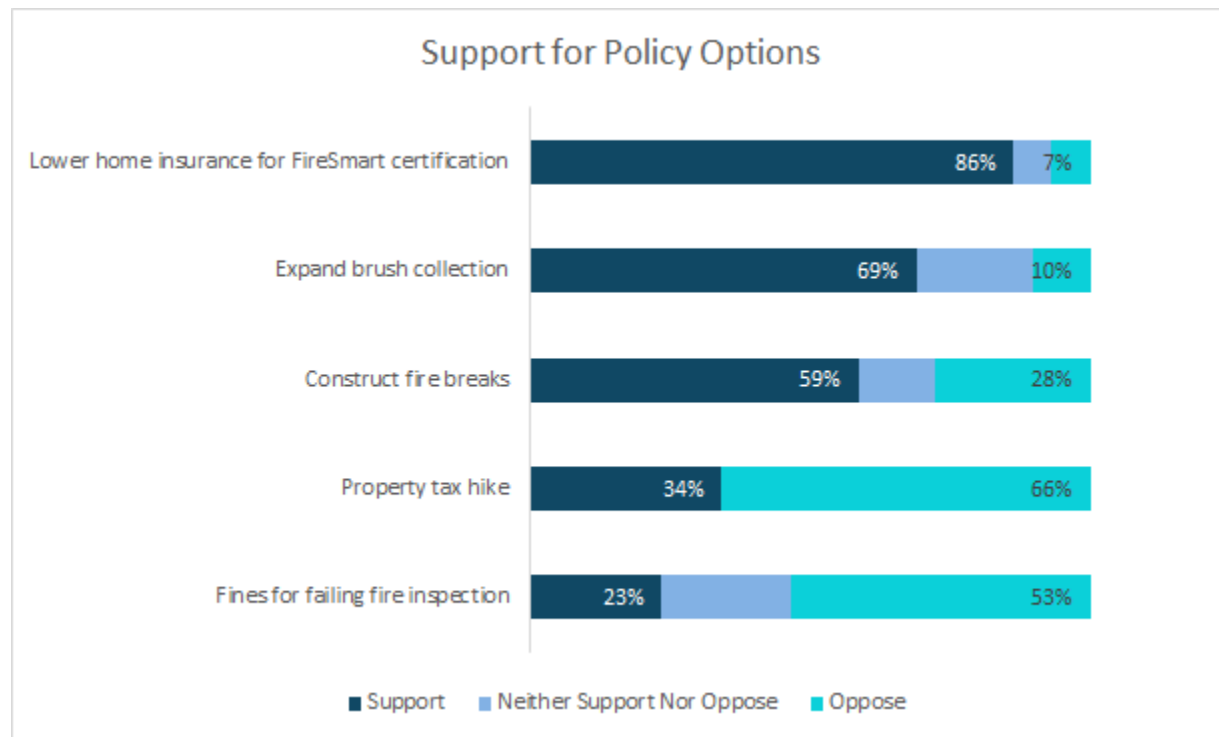
Survey Results

Participation in some activities





Survey Results



Policy Options Analysis

Policy Options

1: Insurance incentives with FireSmart certification program	2: Bylaws for (future) building codes	3: Bylaws for ordering homeowners to treat property	4: Property tax edition(Fire prevention fee)
5. Grants supporting community clean-up teams	6. Community events/bonfires	7. Creation of app/digital communications	8. Communications campaign targeting a) homeowners and b) tourists/recreational dwellers
9. Creation of a Forestry Reserve	10. Firebreaks along WUI	11. Targeting tourists/recreational dwellers by investing in park rangers or camping regulations	12. Roof retrofit tax credit
13. Expanding brush collection (gov services)	14. Investing in Weedman style services (private service)	15. FireSmart certification program	



Key Policy Objectives

Protection and Security (Effectiveness)
Homeowner Acceptance
Cost to Government

Criteria and Measures

<ul style="list-style-type: none"> ● Protection & Security: <i>Effectiveness of Policies in terms of protection and security</i> 	<ul style="list-style-type: none"> ● Protection & Security: <i>When intended protection/security benefit would begin</i>
<ul style="list-style-type: none"> ● Equity: <i>Ability to Pay</i> 	<ul style="list-style-type: none"> ● Stakeholder Acceptance (Homeowners): <i>Support/Neutral/Opposition</i>
<ul style="list-style-type: none"> ● Stakeholder Acceptance (Homeowners): <i>Willingness to Pay</i> 	<ul style="list-style-type: none"> ● Stakeholder Acceptance (Developers/Municipalities/Real Estate/Insurance): <i>Support/Neutral/Opposition</i>
<ul style="list-style-type: none"> ● Administrative Complexity of Compliance: <i>Voluntary, Incentivized or Deterred, Legally Binding</i> 	<ul style="list-style-type: none"> ● Implementation Complexity: <i>Difficulty for Government to Implement</i>
<ul style="list-style-type: none"> ● Government Budgetary Considerations: <i>Approximate cost of mitigation (risk avoidance)</i> 	

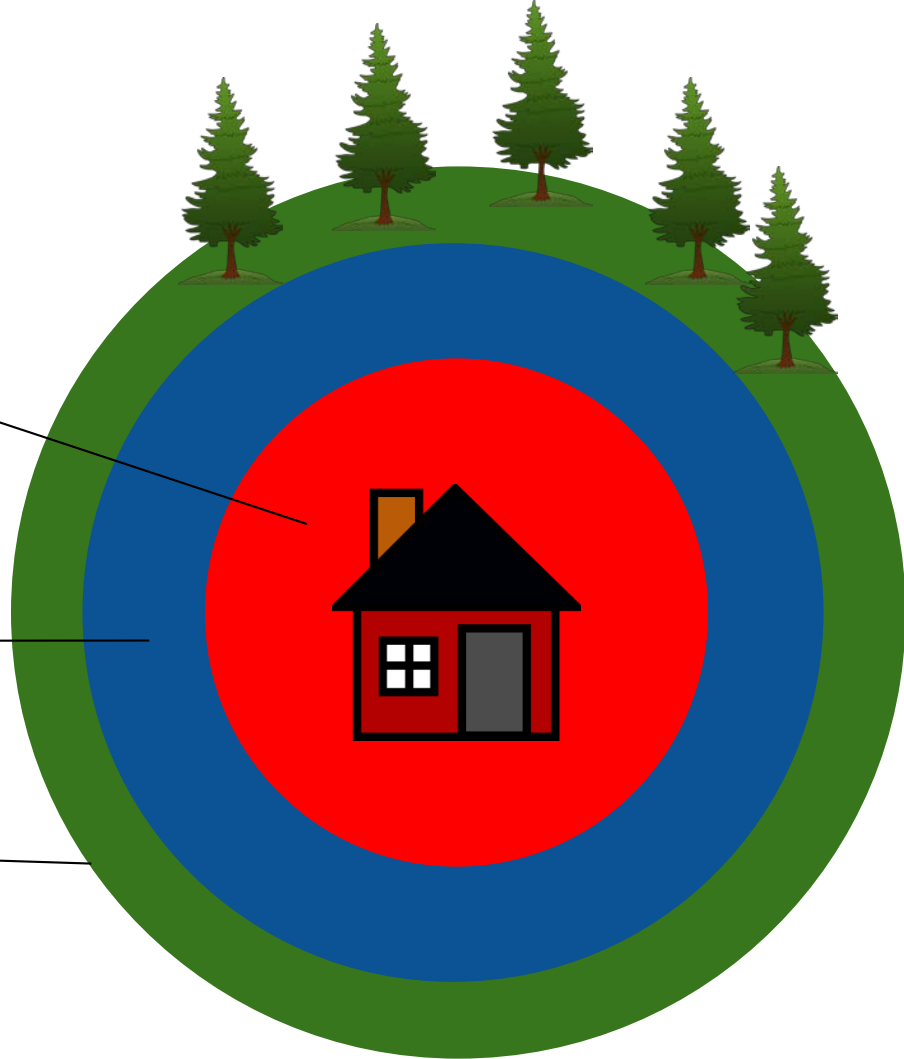
Recommendation



Mitigation on Household Level

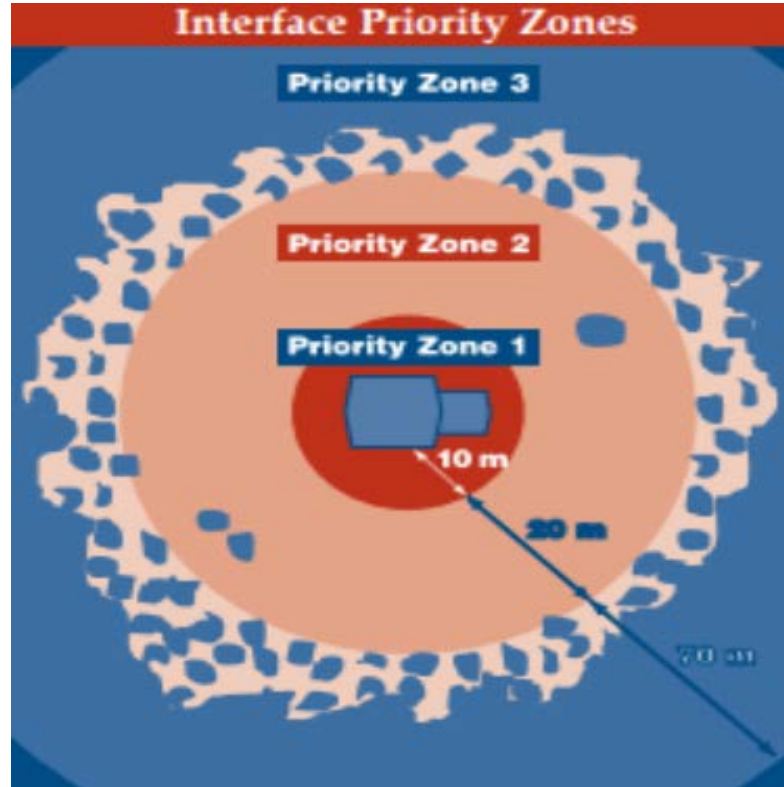
Community Engagement Level

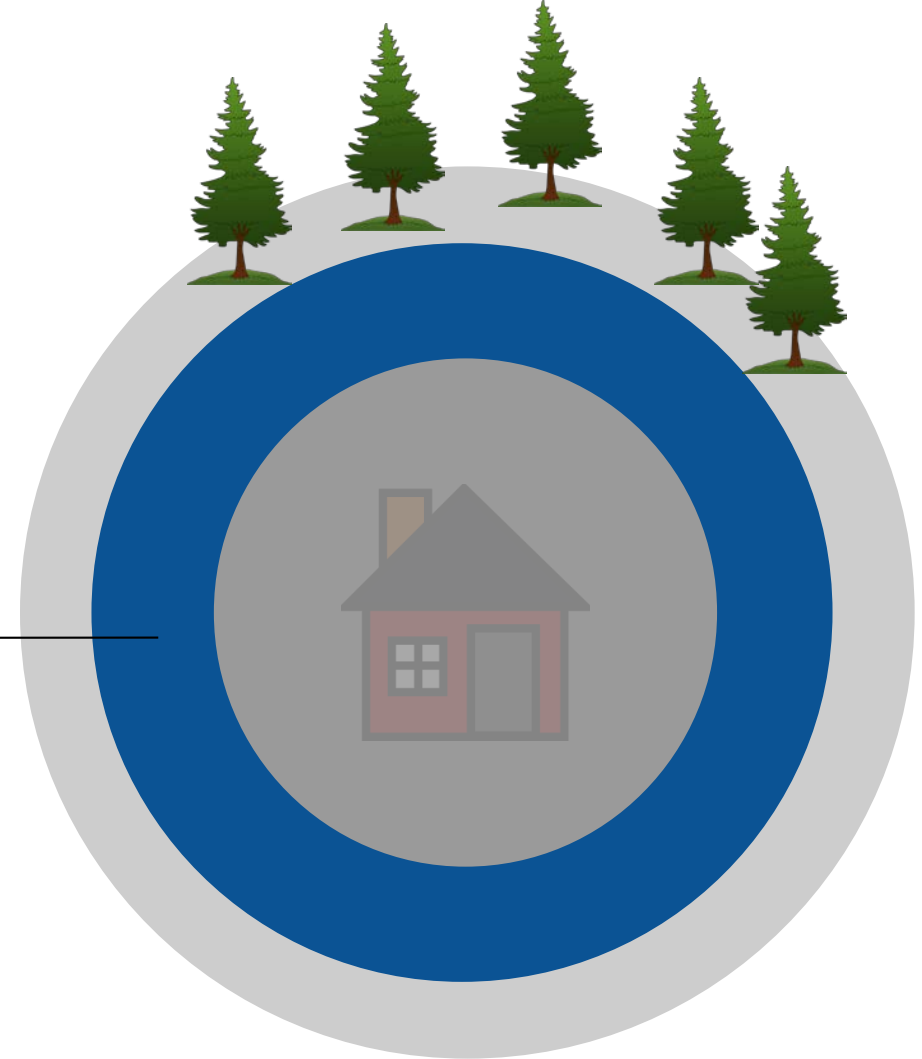
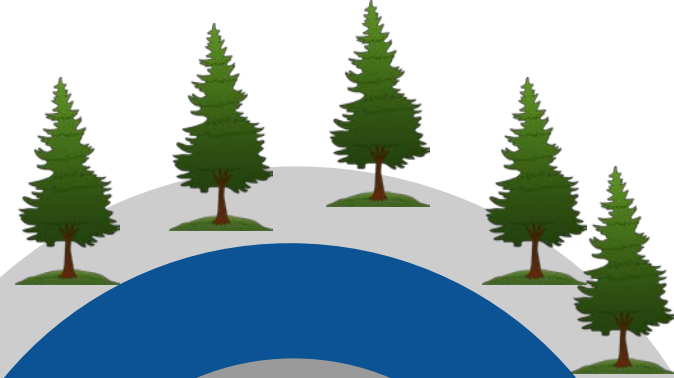
Mitigation on Public Land Level





Inspired by Fire Smart





Community Engagement
Level





Mitigation through Communications

Problem Drivers:

- Homeowners uninformed or misinformed
- Homeowners unmotivated to take action

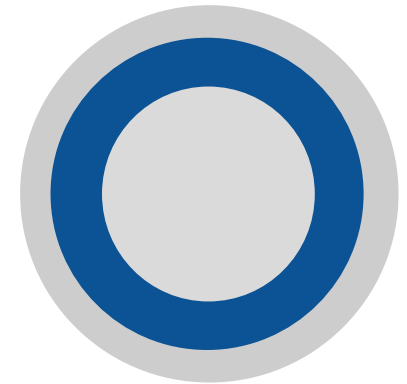
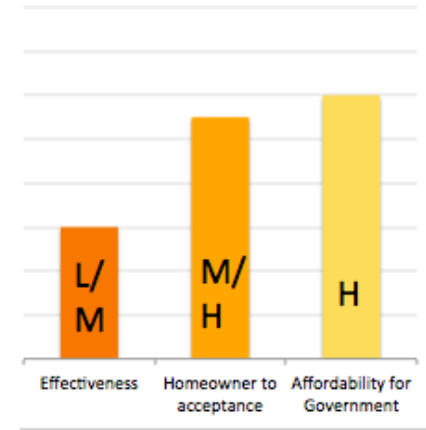




Communications Strategies

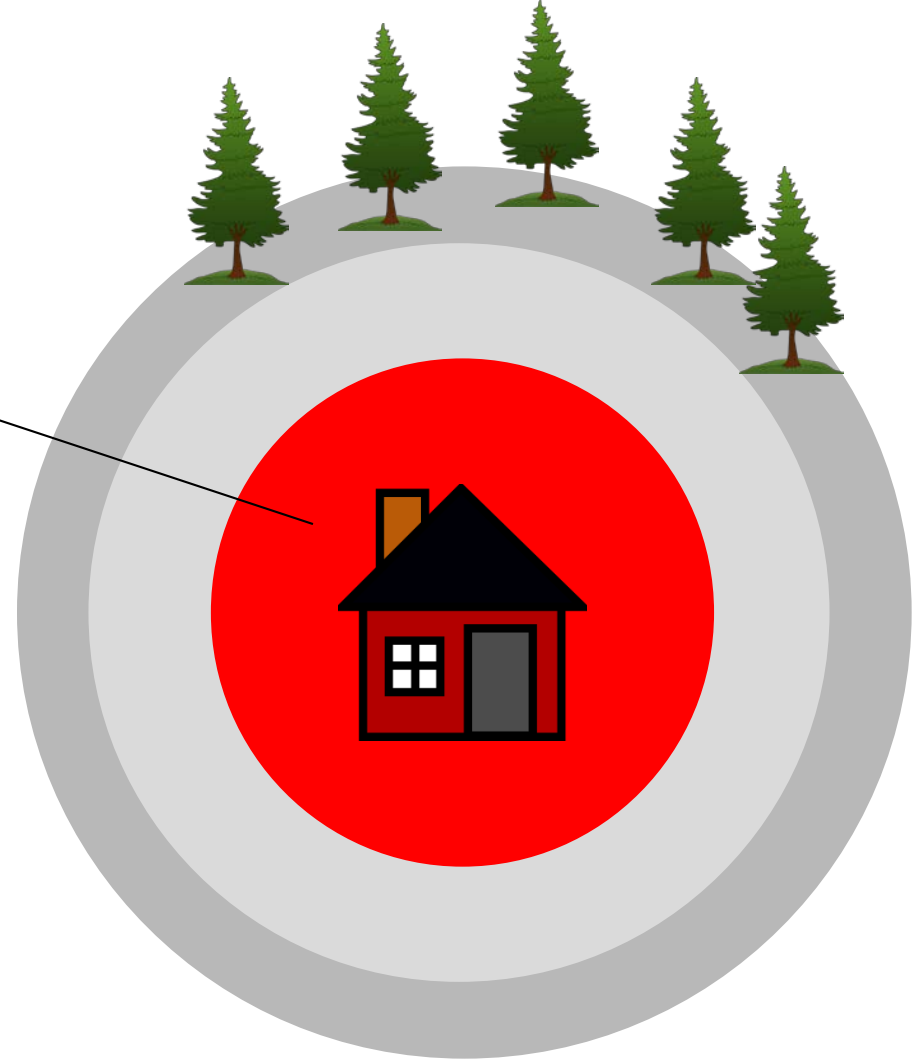
Informational Campaign, Community Events, Digital Strategy, Grants

Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Addresses diverse interests and perspectives● Harnesses pre-existing knowledge● Relatively few resources required● Supports knowledge and acceptance of other policies	<ul style="list-style-type: none">● Potential for unclear messaging● Does not directly reduce risk of damage● Existing funding for community groups has undetermined uptake





Mitigation on Household
Level





Mitigation on Household Level

Problem Drivers:

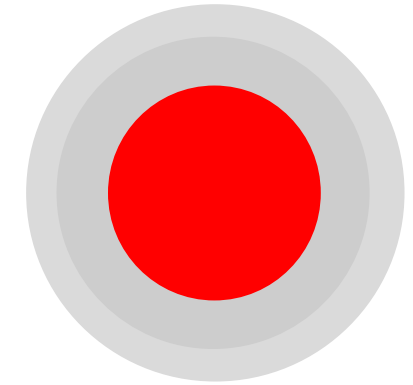
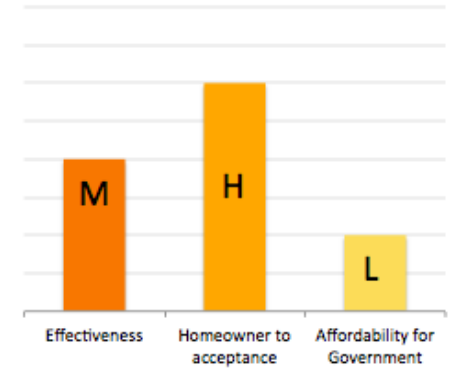
- Lack of relatively easy and cost effective solutions
- Lack of incentives
- Multiple fire spreading





FireSmart Certification & Tax Credit Program

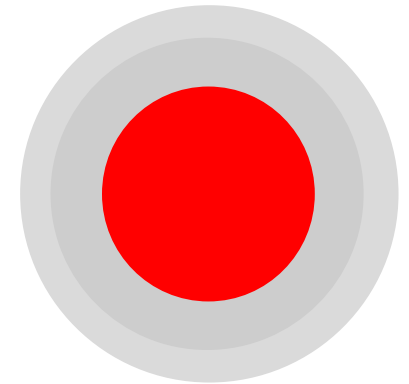
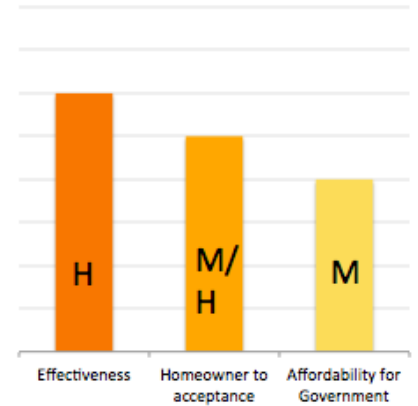
Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Incentivizes and rewards taking care● Promotes use of existing FireSmart program● House-level attention● Equitable distribution of tax credits● Support from fire experts	<ul style="list-style-type: none">● Complexity of administering tax benefit● High budgetary cost to government





Class A Roof Retrofit Tax Credit

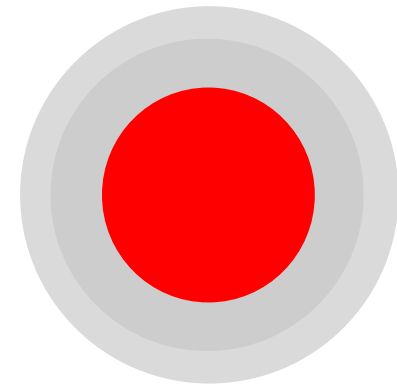
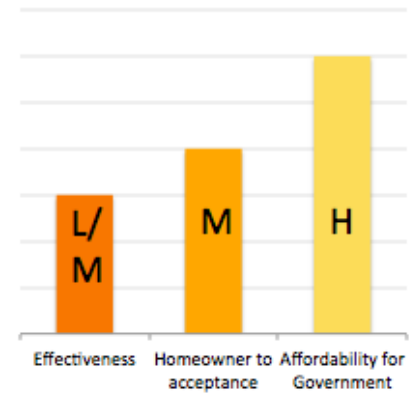
Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Evidence proves reduction of damage● Public support in Okanagan● Cost shared between private and public funds	<ul style="list-style-type: none">● Program is voluntary● Effectiveness increases with number of homes retrofitted● Credit may not be enough to offset high cost

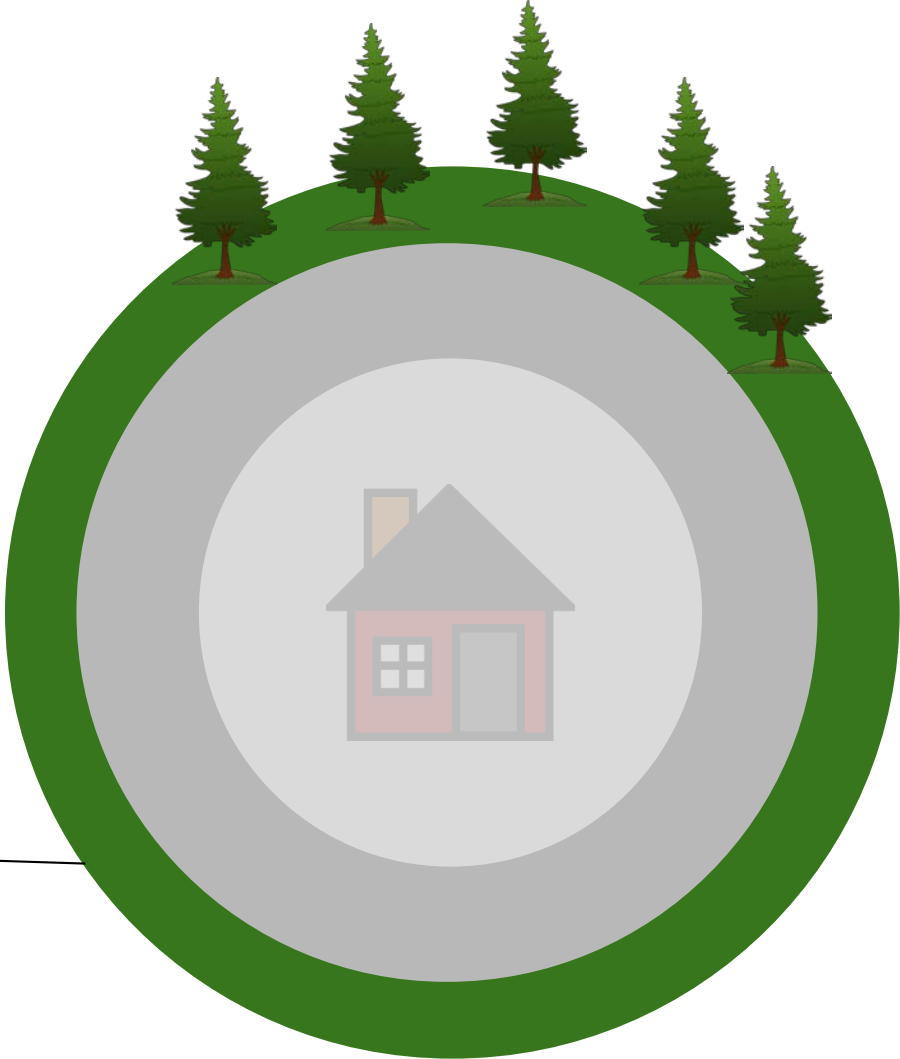




Expand Collection of Fuels and Brush (Door-to-door)

Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Little/no direct cost to homeowners● Can be developed from existing waste infrastructure● Homeowner acceptance● Immediate benefit	<ul style="list-style-type: none">● Some communities may have little infrastructure to build on● Somewhat costly





Mitigation on Public Land
Level



Mitigation on Public Land Level

Problem Drivers:

Lack of trust in government leadership
Fuel management unpopular
Unintended consequences

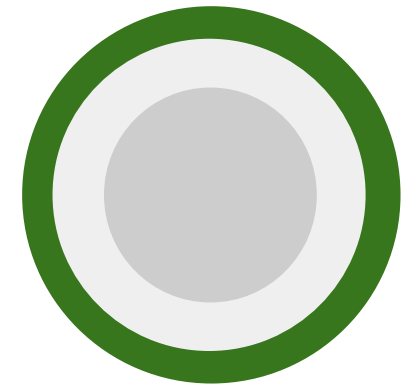
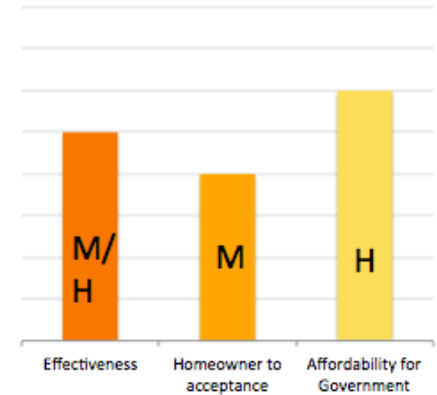




Strategic Firebreaks

Expand mechanical fuel treatments undertaken by timber licensees on public and private land

Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Highly effective● Little cost to government● Makes use of existing GIS data● Work is ongoing	<ul style="list-style-type: none">● Evidence of opposition to mechanical fuel treatments● Needs to be presented in the context of trust building

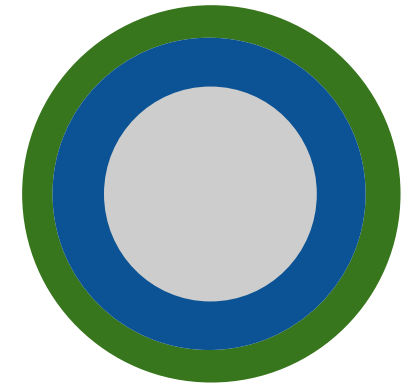
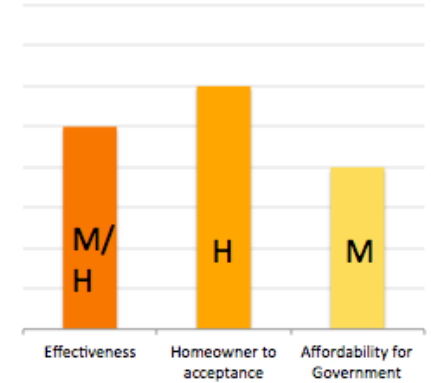




Tourist Engagement

Promote the Okanagan as an ecologically sensitive area

Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Builds on a familiar narrative in the Okanagan● Complements other recommended actions	<ul style="list-style-type: none">● Does not directly address the objective



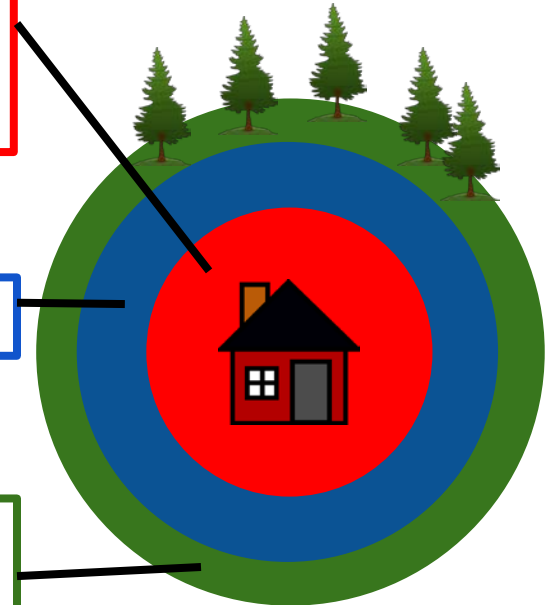
Recommendation: FireSmart 360

FireSmart Household Certification & Income Tax Credit Program:

- WUI Household Certifications through FireSmart
- Class A Roof Retro-Fit
- Brush and Fuel Collection

→ Informational Campaign, Community Events and Volunteer Grants

- Strategic Firebreaks Along the WUI
- Engage Tourists and Recreational Users



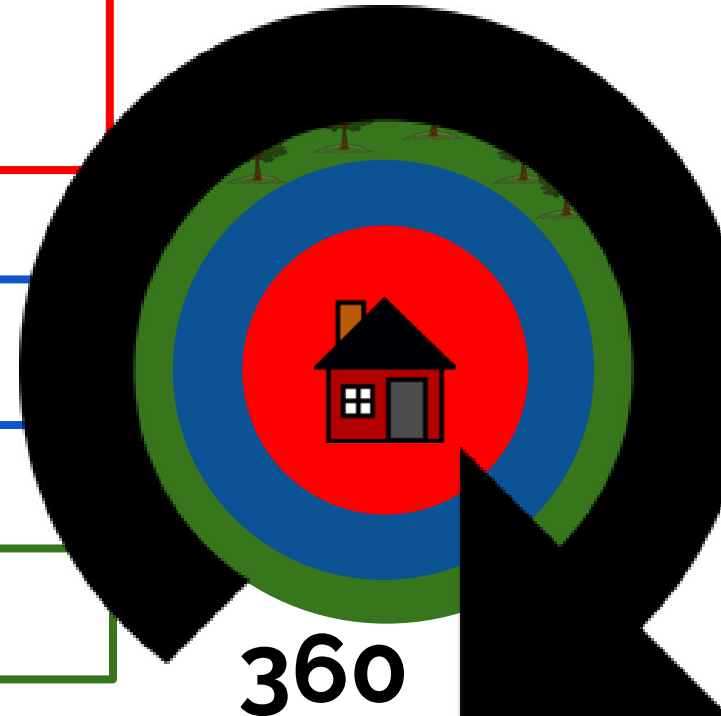
Recommendation: FireSmart 360

FireSmart Household Certification & Income Tax Credit Program:

- WUI Household Certifications through FireSmart
- Class A Roof Retro-Fit
- Brush and Fuel Collection

- Informational Campaign for Residents & Tourists
- Community Events and Volunteer Grants

- Strategic Firebreaks Along the WUI
- Regulate Tourists and Recreational Users





Future Implications and Steps

Expand the certification program to the community level

Engaging insurance companies

Move towards more legal compliance

FireSmart 360

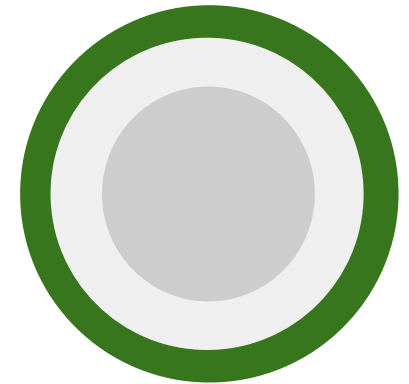
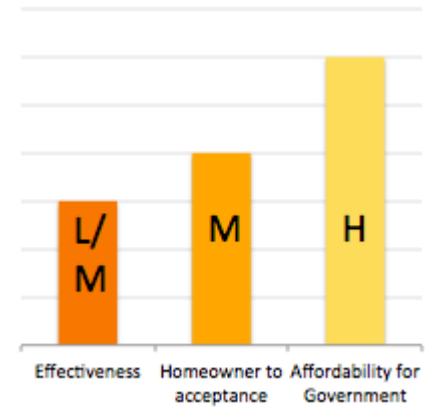


Options Not Included in Recommendation

Bylaws on Future Building Codes

Make fire safety a future consideration

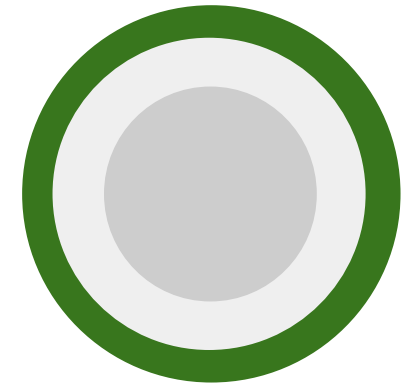
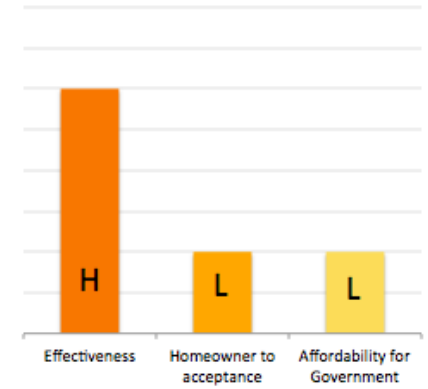
Key Strengths	Key Weaknesses
<ul style="list-style-type: none">• Home-level protection with no cost to homeowners• High homeowner acceptance• A potential marketing scheme for developers• Low government cost	<ul style="list-style-type: none">• Effectiveness is diminished because only future properties are mitigated





Creation of a Forest Reserve

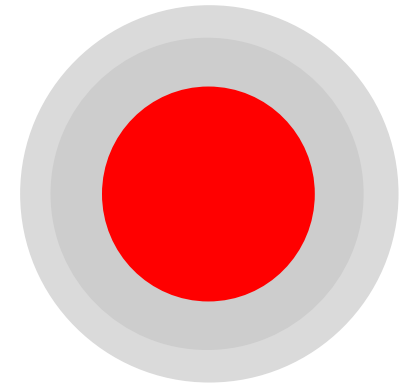
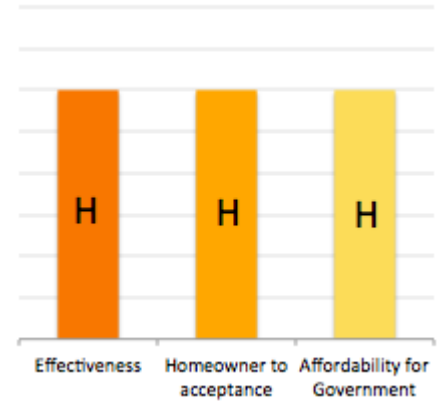
Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● Highly effective● Greenbelts elsewhere in North America have been achieved with cooperation of various levels of government	<ul style="list-style-type: none">● Costly to implement,● Potential need to purchase or expropriate land.● Legal complexity● Municipalities forego revenue streams.





Insurance Incentives

Key Strengths	Key Weaknesses
<ul style="list-style-type: none">● High incentives may translate to high effectiveness● High public acceptance● Low cost to government	<ul style="list-style-type: none">● Compliance is voluntary● High individual cost● Reliance on insurance company buy-in● Requires pre-existing certification program

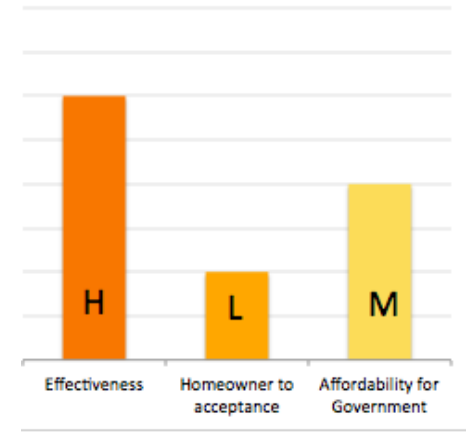




Bylaws for Homeowners to Treat Property

Legalize the mitigation process

Key Strengths	Key Weaknesses
<ul style="list-style-type: none"> • Legally binding- high effectiveness • Fast implementation 	<ul style="list-style-type: none"> • Low homeowner acceptance • Complex enforcement • High government costs



Property Tax Increase

(Fire Prevention Fee)

