



Fire Resistant Roofing FEMA Grant Project Information August 4, 2014



PROGRAM OVERVIEW

As recommended in the Lake County Hazard Mitigation Plan and Community Wildfire Protection Plan (CWPP), a FEMA Fire Resistant Roofing Project has been awarded for homeowners that live in identified Wildland Urban Interface (WUI) areas of Lake County. The rebate amount will equal 70% of the cost of qualified metal roofing materials and installation by a licensed contractor, up to \$7,500 total per eligible dwelling. This document outlines program timelines, specifications for homeowner eligibility and the application process.

BACKGROUND:

Hazard Mitigation Assistance Grants

Partial funding for this project is provided by the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Program to assist with specific hazard mitigation projects listed in the Lake County Hazard Mitigation Plan, including fire resistant metal roofing.

Lake County Multi-Hazard Mitigation Plan (MHMP)

A Multi-Hazard Mitigation Plan is required by the FEMA for any local jurisdiction to be eligible for Hazard Mitigation Assistance Grants. Lake County's Hazard Mitigation Plan was updated and approved by FEMA in 2012, and includes wildfire as the highest risk hazard. The Plan is available on the Lake County website, under Emergency Management / Projects.

Lake County Community Wildfire Protection Plan (CWPP)

Community Wildfire Protection Plans are authorized in Title I of the Healthy Forests Restoration Act (HFRA) of 2003. The HFRA is the legislative component of the Healthy Forests Initiative and requires that local governments, fire departments, and the DNR agree upon the final contents of a CWPP.

- **Collaboration.** Local and state officials must collaborate with federal agencies community and non-governmental stakeholders. This provides a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal land, as well as how additional federal funds may be distributed for projects on nonfederal lands.
- **Prioritized Fuel Reduction.** A CWPP must identify and prioritize areas for hazardous fuel reduction treatments on both federal and non-federal land and recommend the types and methods of treatment that would reduce the risk to the community.
- **Treatment of Structural Ignitability.** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the community.

The Lake County CWPP was approved in 2006 and was revised in November 2013. It is available online at www.co.lake.mn.us under "Emergency Management / Plans / CWPP."

Wildland/Urban Interface Areas (WUIs)

Wildland/Urban Interfaces are areas where wildland fuels (trees, brush, and other vegetation) threaten to burn homes and structures. In the Lake County Community Wildfire Protection Plan (CWPP), Wildland/Urban Interface Areas (WUIs) have been identified and prioritized for mitigation projects. A group of interagency and community people analyzed several factors to describe and prioritize the WUIs. These factors included fire history and risk, fuel hazards and topography, population and structure values, fire response capabilities and response times, evacuation logistics, etc. A map and table with WUI information and priority rankings follow.

Lake County Wildland Urban Interface Areas (WUIs) (2012 Lake County CWPP Revision)

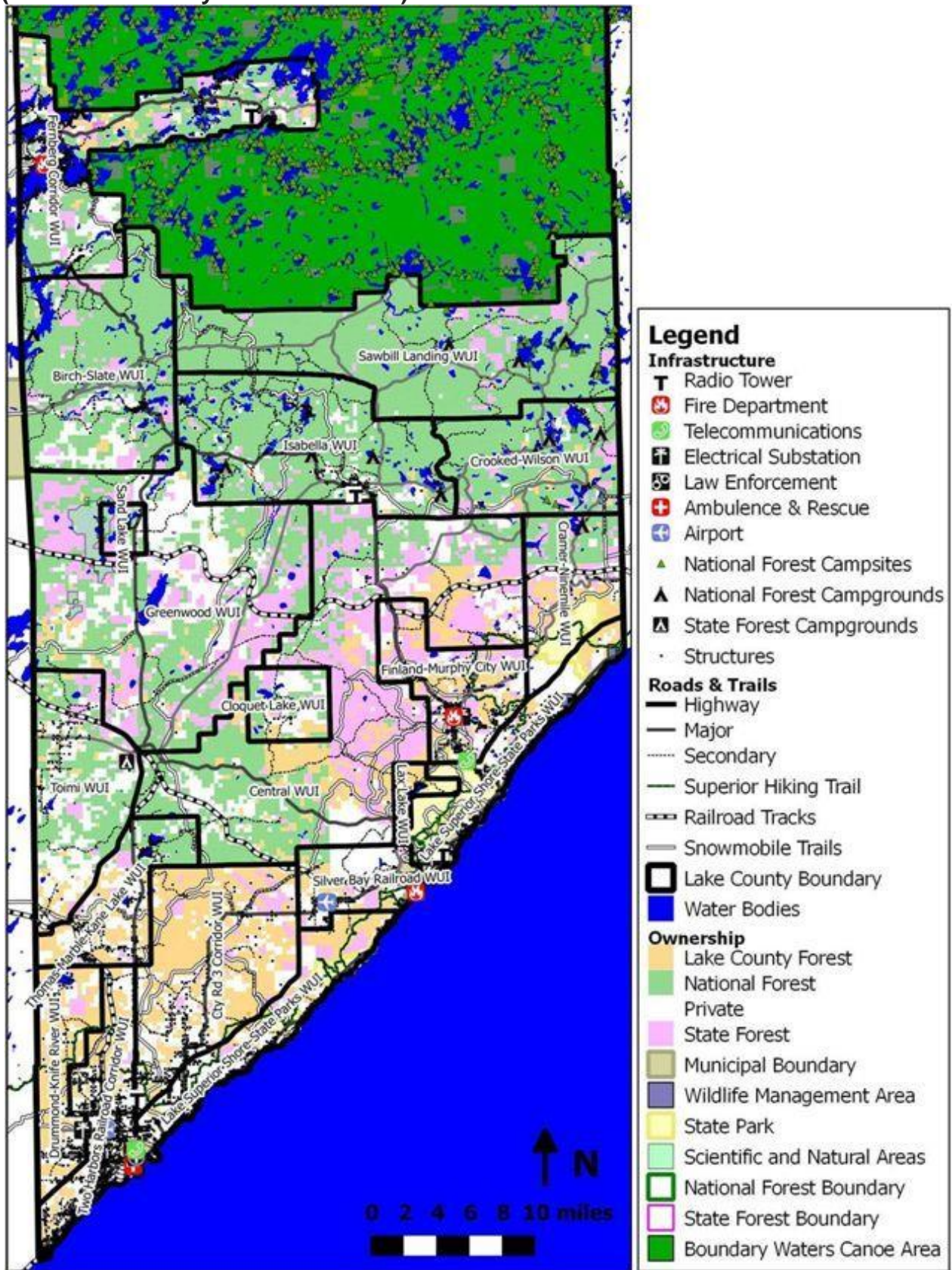
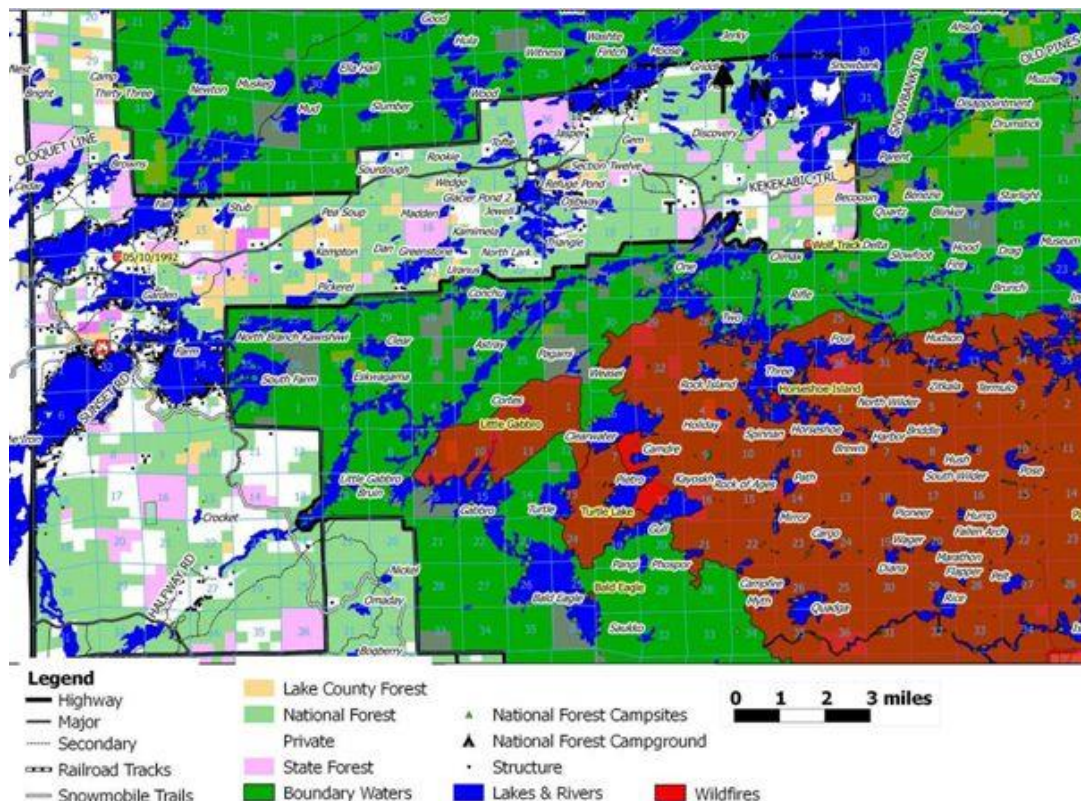


Table of Wildland/Urban Interface Area (WUIs) ranking from 2012 Lake County CWPP revision by number and category to prioritize mitigation activities, with a sample map of the Fernberg Corridor WUI map below. Only those people in **yellow highlighted** WUIs were approved by FEMA for this Metal Roof project.

Rank	Wildland – Urban Interface Areas	Priority Group	Scaled Rating
1	Fernberg Corridor / Kawishiwi Rd	High	100
2	Birch/Slate Lake Area	High / Medium	67
3	Isabella Area	High / Medium	63
4	Two Harbors Railroad Corridor Area	High / Medium	56
5	Toimi Area	Medium	44
6	Lake Superior Shore/State Parks Area	Medium	40
7	Crooked / Wilson Lakes	Medium	31
8	Greenwood	Medium / Low	30
9	Finland / Murphy City	Medium / Low	30
10	Silver Bay Railroad Corridor	Medium / Low	26
11	Lax Lake	Medium / Low	24
12	Sand Lake	Medium / Low	22
13	Thomas / Marble / Kane Lakes	Medium / Low	19
14	Central	Medium / Low	18
15	County Road #3 Corridor Area	Medium / Low	11
16	Cloquet Lake	Low	10
17	Sawbill Landing	Low	9
18	Cramer / Ninemile	Low	7
19	Drummond/Knife River	Low	7

Fernberg Corridor WUI Map (Other WUI maps are available at www.co.lake.mn.us.)



Structure Protection Priority Areas

The Fire Risk Analysis used to determine these high priority areas can also help determine where particular types of work should be focused. For example “**fire risk & hazard**” rated high in Birch/Slate Lakes and Fernberg Corridor WUIs. These are the priorities for fuels reduction work done by the USFS. The Cloquet Lake, Isabella and Toimi WUIs rated as high risk for “**protection capabilities**” so they are top priority areas to target for improvements to suppression resources, such as local water source hydrants. Areas of high hazard risk that also rated high for “**community values**” Fernberg Corridor, Isabella, Birch/Slate Lake and Two Harbors Railroad Corridor WUIs are priority areas to provide funding for structure protection such as external sprinkler systems or metal roofing.

Lake County participated in a 2008 Hazard Mitigation Grant Program to provide funding for external wildfire sprinkler systems to those homeowners with homestead or seasonal properties in high priority WUIs. Those systems were only available for properties with sufficient natural water access (lake or stream shore). Since the goal of the metal roofing program is to provide alternative structure protection for those who do not have water access, **homeowners who received sprinkler grant funding through Lake County will not be eligible** for the metal roof grant. In addition, Lake County supported a Metal Roof Pilot Project in 2010-12. **Those who received funding for a metal roof as part of that project will not be eligible** for this grant.

Defensible Space

Defensible space is created by clearing dead brush and trees, ladder fuels, conifer needles and other flammable materials away from structures. Creating defensible space for at least 100 feet around a structure is highest recommendation for homeowners in wildfire prone areas to mitigate that hazard. (Howard and others 1973)

The probability that a house with a given roof type and with brush clearance will be burned can be estimated from records compiled in southern California after the 1961 Bel Air Fire. These records cover a sampling of 1,850 homes. Values have been interpolated to match the brush clearance categories of the insurance industry at the time (Howard and others 1973):

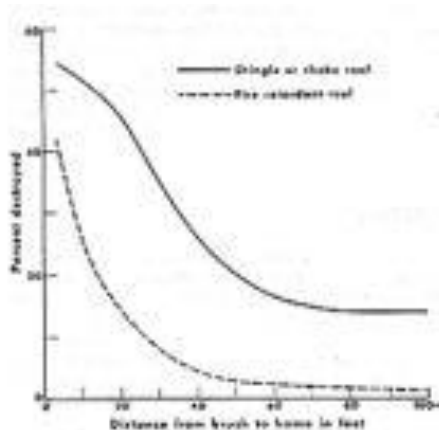


Figure 6— The greater the distance between a dwelling and brush, the better the chance it has of escaping destruction in a fire (Wilson 1962).

Brush type Clearance (ft):	Roof type approved by insurance	Roof
unapproved by insurance		

0 to 30' of homes destroyed	24%	49%
30 to 60' 5%	29% of homes destroyed	
60 to 100' of homes destroyed	2%	14%
100+ feet of homes destroyed	0.7%	15%

(Protecting Residences from Wildfires, by Howard E. Moore, 1981. (General Technical Report PSW-50), USFS. (<http://www.fs.fed.us/psw/publications/documents/gtr-050/struct.html>))

Obviously the most cost-effective means of protecting homes from destruction by fire in or near wildlands is a **combination of approved fire-resistant roofing and clearance of 100 feet or more from the native brush for each home.**

Many people choose to live in northern Minnesota because we appreciate the aesthetic, ecological and privacy benefits of the north woods, and do not wish to clear all trees and woody debris for 100 feet from our homes. The **Minnesota DNR therefore recommends a defensible space of 30 feet** around any structure, including any outbuildings within the 30 feet perimeter of your home. With grant support from the Minnesota DNR, Lake County provided free DNR Firewise Level 2 evaluations to all Lake County homeowners who requested them during 2010-2012. These surveys provided education and recommendations on how to prevent loss of structures due to wildfires.

In northern Minnesota, balsam fir (*Abies balsamea*) is the most flammable tree species; it grows in thick patches in the understory because it can tolerate low levels of sunlight. For these reasons it has been targeted by the US Forest Service (USFS) for hazard fuel reduction projects on both federal and private lands. Lake County is cooperating with the USFS on "Public and Private Forestry Hazard Fuels Reduction Projects" on private areas contiguous with projects on USFS lands. For these projects, specifications are to clear or trim balsam fir within 30 feet of the residence. **All balsam fir trees under 5" diameter at 4 feet high, and within 30 feet of the structure to be roofed (and/or propane tanks within 30 feet), must be removed. Any balsam fir or other conifer over 5" diameter at 4 feet high must be removed OR have all branches trimmed to a height of 6 feet.** Exceptions are those conifers found on an adjacent landowner's property, in which case it is strongly encouraged to work with the adjacent landowner to allow clearance of these wildfire hazards.

Because the focus of this federal grant project is to support those homeowners in high risk areas who are willing to perform additional mitigation activities to save their homes from fire, these same defensible space specifications will be required of metal roof grant recipients.

Metal Roofing

The roof is the most vulnerable part of a building during a wildfire because it can catch and hold flying firebrands from the strong winds and convection columns of wildfires. Unlike ground fires, these airborne firebrands soar beyond any type of firebreak and endanger structures as far as a mile away from the wildfire (Alger 1971, Los Angeles County Fire Dep. 1970, Howard and others 1973).

There are a few simple structure protection steps homeowners can take to protect their property. The **most important is to have a non-flammable roof**, and a metal roof is the most suitable in fire-prone areas because of its durability and non-combustibility.

The Underwriters Laboratory (UL) has developed its fire safety ratings system to provide information about the fire safety of construction material. This is based upon its hourly performance when exposed to fire, including the transmission of heat sufficient to ignite a fire, and the load bearing performance of the material.

For roofing materials, the UL provides a class-based ratings system: Class A, B and C. Class A roofs are non-combustible and will withstand severe fire exposure without igniting. Class B roofs will withstand a

moderate amount of fire exposure. Class C can only withstand a small amount of fire exposure, but enough to allow those inside to escape. Because metal isn't combustible, metal roofing is rated Class A, reducing the spread of fire, giving more time for occupants to vacate the building, and providing more time for firefighters to arrive and put out the blaze.

Though metal roofing material itself earns a fire-rating of Class A, the entire roof structure may receive a different rating, since all materials are taken into account. There is a benefit to having the entire roof rated as Class A, as it can significantly reduce the cost of insuring the building. For example, if a metal roof is installed on top of wooden shingles, the shingles will lower the roof's fire rating. Therefore, for purposes of this grant, **the entire roof structure must receive a Class A rating**. A fully Class A rated metal roof assembly can be accomplished by installing a metal roof over class A rated underlayment, such as Class A tar-paper or an existing Class A shingle roof.

Structures that are listed in the **Record of Environmental Consideration (REC)** are not allowed to install metal roofing. Information on roofing material requirements for structures on the **National Register of Historic Places** are listed in the next section in paragraph "G".

Homeowner Eligibility

- A. The building on which the roofing is to be installed must be located in Lake County, in a FEMA approved **Wildland Urban Interface (WUI) area highlighted in yellow** on page 3. These include Fernberg Corridor, Birch/Slate Lake, Isabella, Crooked/Wilson Lakes, Sand Lake, Greenwood and Toimi. In addition, our current project, approved by FEMA in June 2014, includes only **structures that are under 50 years old, that have a "roof cost to building replacement value (BVR)" of less than 30%, and for which we have two clear photos of the each structure**. We hope to submit another application, with those not included in this version, during the fall of 2014.
- B. The primary building to be re-roofed must be a **dwelling** which is a **commercial or resort property, a primary residence, a secondary/seasonal residence, or a building rented to others as a dwelling**. A metal roof may also be installed on any **associated structure** (garage, storage shed, etc.) **within 30 feet** of the primary eligible building, which also has defensible space cleared. These associated buildings are not in themselves eligible, however, and must be included in the \$7500 maximum payment for the eligible structure. A maximum of five structures per property owner will be considered eligible.
- C. New roof construction after December 31, 2012 is **not eligible** for federal funding under this program. Also, properties which received funding for or an external wildfire sprinkler from the 2008-2012 FEMA Hazard Mitigation Grant Program, or funding for a metal roof through Lake County in 2010-12, are **not eligible** for this program.
- D. Structures considered for the rebate program must have a **Firewise Level 2 evaluation** performed by a qualified Lake County Firewise evaluator. Level 2 Firewise evaluations involve a local firefighter or other trained evaluator visiting your property, walking around the outside of your dwelling and completing a one page survey to evaluate wildfire risk factors. Homeowners need not be present, evaluations do not affect your tax or insurance rates, and evaluators will not enter any buildings. It takes about 20 minutes, and a copy of the assessment is left on the door, or mailed by request. Homeowners can use this information to reduce the risk of wildfire to their homes, and Lake County uses it to plan for wildfire mitigation activities countywide. For more information on the DNR Firewise program, please visit <http://www.dnr.state.mn.us/firewise/livingwithfire/index.html>. Free Level 2 Evaluations were offered to all Lake County residents between 2010-2012. **Evaluations requested after 2012 will be provided at a cost of \$40.**
- E. Because **defensible space** is accepted as the highest recommendation for wildfire protection, it is required by FEMA as part of this project. **All balsam fir trees under 5" diameter at 4 feet high, and within 30 feet of the structure to be roofed (and/or propane tanks within 30 feet), must be**

removed. Any balsam fir or other conifer over 5" diameter at 4 feet high must be removed OR have all branches trimmed to a height of 6 feet. In addition, homeowners must sign and file a Declarant stating they (and any future owners) will maintain that condition for 40 years, the lifetime of the metal roofing project.

Lake County will provide **free inspections** of the defensible space requirements every ten years for 40 years, which is the life of the project. If the defensible space is found to be unmaintained, Lake County will conduct or contract the clearing and charge the homeowner for the work.

- F. If applications for Pre-Approval exceed available funding, **applicants may be prioritized by WUI** having the highest risk ratings, by **date of request** (those received after the deadline of October 26, 2012 will receive lower priority), and by **tax class**. Within each WUI, tax classes will be prioritized by:
- a. Commercial properties (Tax classes 221, 232, 233, 237)
 - b. Homestead residential properties (Tax classes 200, 201, 203, 204, 205)
 - c. Seasonal residential properties (Tax classes 111, 151)
- G. **Qualified roofing materials are those that meet Underwriters Laboratory (UL) Class A rating.** Qualified roofing materials are those that meet Underwriters Laboratory (UL) Class A Rating metal roofing, along with Class A underlayment, fascia and soffit material, metal vent caps and screens of 1/4" or less. All roofing system materials, including underlayment or previous shingles, vents and grates, must be Class A rated. Roofing must include stops at the eave ends by foam or other means to preclude entry of flame or embers under the roofing material.

Lake County has not adopted building codes. For this project, roofing materials and installation must meet the recommendations put forth in FEMA Technical Fact Sheet Series P-737: *Home Builder's Guide to Construction in Wildfire Zones*, the NFPA 1144: *Standard for Reducing Structure Ignition Hazards from Wildland Fire*, and/or the recommendation of the MN State Fire Marshall. A summarized checklist of these requirements will be provided to homeowners and will be used during the final building inspection, they can be found on the [website](#).

Any materials and labor required to **improve structural deficiencies** to accommodate the fire resistant roof, such as replacing rotted rafters or sheathing, **will NOT be covered** by the grant. Grant funding will not cover the cost of gutters, insulation or wooden framing materials required to upgrade or support the fire resistant roof.

All homeowners must provide a copy of **separate itemized paid invoice** from the contractor, showing only those required to install the metal roofing, and not including any materials and labor for structural improvements or gutters.

H. Installation by licensed contractor

Homeowners will have the responsibility to select, and provide proof of installation by, a **licensed MN Residential Building, Remodeling, or Roofing Contractor**. Contractors holding Residential **Roofing licensure alone cannot perform soffit or fascia work**, which will be required in some cases to give the roof system a Class A Rating; these contractors must hold a Residential Building or Remodeling license. A list of interested local contractors from Lake, Cook and St. Louis Counties will be provided to homeowners. Lake County will collect copies of current licensure for these contractors, but does not otherwise vet or recommend contractors. Homeowners wishing to use other contractors will need to inform Lake County so that licenses may be checked for those contractors before work begins.

The **roof installation will be inspected** during work, and before submission of Application for Reimbursement, by a licensed Building Inspector contracted by Lake County. The homeowner will be responsible for this inspection fee of **\$80 per eligible structure**.

Metal roofing materials **must be installed before December 31, 2016**.

Application Process

Interest Form

All homeowners in eligible WUIs received mailed invitations during the months of September – October 2012. Interested homeowners returned forms in 2012. A follow-up letter or email update was sent in January 2013, and notice of award sent in June 2014. **Our grant award provides 70% reimbursement of the cost of qualified metal roofing materials and installation by a licensed contractor, with a maximum of \$7,500 per eligible structure, and a maximum of five eligible structures per property owner.**

1. Receipt of Pre-Approval Letter

Homeowners have already received a **Pre-Approval confirmation letter or email** from Lake County Emergency Management for this project. Without this notification and listing, homeowners are not eligible for payment

2. Approved Design:

The roof system must be installed by December 31, 2016. The system must meet Underwriters Laboratory (UL) **Class A rating for the entire roof system**, and include foam stops at the eave ends, or other means to preclude entry of flame or embers under the metal. If the old roofing material does not fit the standard for a Class A System (wood shingles for example), Class A underlayment must be applied under the metal roofing. Roof and soffit must be covered with steel vents with openings of 1/4" or less. **Grant funding will cover** metal roofing with a 40 year warranty and installation hardware, Class A underlayment, and vents and vent covers. **Funding will not cover** insulation, wooden framing materials, gutters or other materials not part of the Class A requirements. A itemized contractor invoice or receipt for all qualifying roofing materials and labor, along with manufacturer's or vendor's **proof of UL Class A rating**, must accompany the Application for Reimbursement.

3. Lake County FEMA Metal Roof Project: Installation Guidelines:

Reviewed, Signed, and Returned to Lake County Emergency Management

4. Maintenance Agreement and Transfer of Title Declarant

Upon completion of the metal roofing installation a maintenance agreement shall be signed by the property owner stating that **metal roofing and defensible space will be maintained for forty years**, the life of the project. This agreement shall include a written covenant stating that, in the event that ownership of the property is transferred to another party during the forty year life of the project, the new owner shall agree to maintain the metal roofing and defensible space as required by the specifications of the project. This declarant shall be filed at the Lake County Recorder's Office, and the **property owner shall pay the \$46 filing fee**

5. Installation of Roofing

Proof of installation of the roof may include a copy of an **itemized paid contractor invoice or receipt** from a licensed MN Residential Building/Remodeling/Roofing Contractor. Residential Roofing Contractors cannot perform soffit or fascia work, which will be required in some cases to give the roof a Class A Rating. The **roof installation, along with defensible space clearing, will be inspected** upon submission of Application for Reimbursement by a contracted inspector for Lake County Emergency Management.

6. DNR Firewise Level 2 Evaluation

A copy of your Firewise Level 2 assessment must accompany your Pre-Approval Application. The wildfire risk assessment surveys are non-binding (they require no action to be taken by the homeowner), but the survey itself is **required to be eligible** for Metal Roofing and other Lake County wildfire hazard mitigation projects. All Lake County homeowners were offered a free Firewise Level 2 evaluation in 2010-2012. Those who declined the free evaluation during that time, but wish one to be completed as a requirement for the Metal Roofing program, will be **charged a fee of \$40** to cover time and transportation for a DNR trained assessor to visit their residence. Evaluation requests may be held for several weeks until a sufficient number of requests are collected in each

WUI to cover the expense of a trip to a remote area. To request a Firewise Level 2 evaluation, contact Lake County Emergency Management Department at 226-4444 or firewise@co.lake.mn.us.

Contractor must submit a set of detailed plans and list of building products to the Lake County Building Inspector for review and approval. Due to the FEMA requirements for this project each applicant will be charged an \$80 fee per eligible structure for plan review and inspections.

7. **Defensible Space**

According to the grant requirements, defensible space must be created around the structures that are being roofed before they are eligible for reimbursement. Conditions to meet this requirement are based upon USFS parameters for Fuel Hazard Mitigation projects in the Superior National Forest. All **balsam fir trees under 5" diameter at 4 feet high, and within 30 feet of a structure being roofed, must be removed. Any balsam fir or other conifer over 5" diameter may be removed OR have all branches trimmed to a height of 6 feet.** Lake County will provide a **free defensible space inspection** at any time before Application for Reimbursement. Please **allow four weeks** for an inspection to be scheduled. If upon inspection the defensible space does not meet requirements for reimbursement, and another inspection is required, the property owner will be charged a **fee of \$50** to cover time and transportation of the inspector to return to their property. If the requirements are not met upon a second inspection, the homeowner may, at the discretion of the Emergency Management Director, be charged \$100 for a third inspection, or be denied reimbursement for their metal roofing project.

In addition, Lake County will provide free **inspections of the defensible space** every 10 years for 40 years, which is the **life of the project**. If the defensible is found to be unmaintained, Lake County will conduct or contract the clearing and charge the homeowner for the work.

8. **Application for Reimbursement**

After purchase, installation and payment of approved roofing material, and clearing of defensible space, the homeowner may be eligible for reimbursement from Lake County Emergency Management. All items on the checklist on the following page must be submitted by **December 31, 2016** for the first grant (Metal Roofs Grant 1) and by **December 31, 2017** for the 2nd and 3rd grants (Metal Roofs Grant 2 and 3).

Receipt of check

The homeowner will receive a check for the rebate amount from Lake County. It may take **up to 12 weeks** for check delivery after receipt of complete Application for Reimbursement to Lake County. **Reimbursement will be for 70% of the cost of qualified metal roofing materials and installation, with a maximum of \$7,500 per eligible structure, and a maximum of five eligible structures per property owner.**

Disclaimer

The Lake County Community Wildfire Protection Plan (CWPP) Steering Committee reserves the right to change eligibility or specifications for the Fire-Resistant Roofing Project within the parameters of the federal grant agreement at any time, or to deny any application for cause upon the approval of a majority of the Steering Committee members.

Reference Documents Available on the [Lake County Website](#)

- A. Firewise Level 2 Evaluation Form
- B. Defensible Space Specifications
- C. Local Licensed Contractor List
- D. Installation Guidelines (FEMA and NFPA)
- E. Maintenance Agreement and Defensible Space Declarant

	Date Completed	Application Reimbursement Steps
		1. PROOF OF PRE-APPROVAL (HSEM participant list or letter from Lake County)
		2. Building Plan Review and Inspection Fee paid to Lake County for processing and approval of installation plan per FEMA specifications. \$80 per eligible structure. (Make Check out to Lake County Emergency Management)
		3. Guidelines Reviewed and Signed.
		4. Maintenance agreement and transfer of ownership declarant. (Original signed form and receipt of \$46 (\$92 if property is in Trust) paid to Lake County Recorder)
		5. PROOF OF PURCHASE and INSTALLATION of qualified materials (paid invoice and documentation of UL Class A rating). Documentation must include an itemized list of authorized roofing materials and installation costs, and may NOT include items used to repair and/or enhance structural components. Authorized items include sheathing, Class A fire rated underlayment, fire-retardant-treated battens, metal panels, shingles (for historic sturcutres), fascia and soffit work. Funding will not cover insulation, wooden framing materials, gutters or other materials not part of the Class A requirements.
		6. Copy of FireWise Level 2 Assessment
		7. Proof of approved inspection of installation by licensed Lake County Building Inspector (Copy of signed inspection)
		8. Proof of approved inspection of defensible space by contracted inspector. (Copy of signed inspection)
		9. Photos: See installer guidelines section "Installation and Inspection Requirements" item #3 for list of photos during installation. These will normally be provided by your installer. Photos of completed installation (all sides of completed structure, including indicator of structure address) will normally be provided by the Building Inspector.
		10. Reimbursement Application by: Randall Walz, Metal Roof Project Coordinator Lake County Emergency Management 99 Edison Blvd Silver Bay, MN 55614 Email: metalroofs@co.lake.mn.us Office: 503.449.7979
		11. Application Review will be conducted by Lake County of all documentation submitted for reimbursement of roof installation (70% with a maximum of \$7,500 per eligible structure). Review of each application and issue of reimbursement payment check may take up to ten weeks.
	Ongoing	12. Defensible Space Review Lake County will provide free inspections of the defensible space every 10 years for 40 years, which is the life of the project . If the defensible is found to be unmaintained, Lake County will conduct or contract the clearing and charge the homeowner for the work.
Total		
70%		

reimbursement not to exceed \$7,500

Check will be sent to: