

City of Carson City
Agenda Report

Item # 11B

Date Submitted: July 10, 2007

Agenda Date Requested: July 19, 2007

Time Requested: 1 Hour

To: Mayor and Supervisors

From: Parks and Recreation Department

Subject Title: Action to accept the "Post-Waterfall Fire Watershed Critical Needs Assessment," draft findings and preliminary recommendations prepared by Resource Concepts, Inc., through a grant provided by the natural Resources Conservation Service, providing for an analysis of the watershed's condition in the Carson Range portion of Carson City and measures recommended for its rehabilitation.

Staff Summary: Through this multi-disciplinary report, which was made possible through the support of Senator Harry Reid, the USDA Natural Resource Conservation Service (NRCS), and other partners, Carson City has assessed the post-fire watershed and developed a strategic plan to improve the watershed, protect the City from future flood events, and continue in a comprehensive manner to implement rehabilitation projects on the watershed.

Type of Action Requested: (check one)

Resolution

Ordinance

Formal Action/Motion

Other (Specify)

Does This Action Require A Business Impact Statement: Yes No

Recommended Board Action: I move to accept the "Post-Waterfall Fire Watershed Critical Needs Assessment," draft findings and preliminary recommendations prepared by Resource Concepts, Inc., through a grant provided by the natural Resources Conservation Service, providing for an analysis of the watershed's condition in the Carson Range portion of Carson City and measures recommended for its rehabilitation.

Explanation for Recommended Board Action: The Board of Supervisors is asked to accept the draft findings and recommendations which will become the guiding document to be used in providing for rehabilitation measures and seeking grant funding for projects to mitigate the magnitude of erosion impacts and improve the health of the drainage.

Applicable Statute, Code, Policy, Rule or Regulation: Section 1.01 of the Carson City Charter.

Fiscal Impact: The cost of the report was paid 100% through a Nevada Resource and Conservation Service grant and contract. However, implementation of all the proposed mitigation practices is approximately \$12 to 17 million.

Explanation of Impact: The range of recommendations include property purchases from willing sellers and conservation easements, water and sediment attenuation, roadway stormwater conveyance, drainage channel improvements, structural slope stabilization, revegetation, weed control, and fuel reduction.

Funding Source: Existing and future grants.

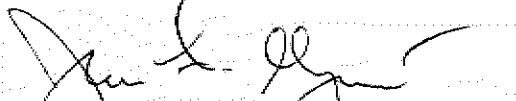
Alternatives: Not to accept the study, provide a different direction.

Supporting Material:

Handout entitled "Post Fire Watershed Critical Needs Assessment" April 2007

Memorandum from Resource Concepts, Inc., regarding the "Immediate Project Needs"

Prepared By:



Juan F. Guzman, Open Space Manager

Date: 7/10/07

Reviewed By:



Roger Moellendorf, Parks & Recreation Director

Date: 7/10/07



Linda Ritter, City Manager

Date: 7/10/07



District Attorney's Office

Date: 7/10/07



Nancy Paulson
Finance Department

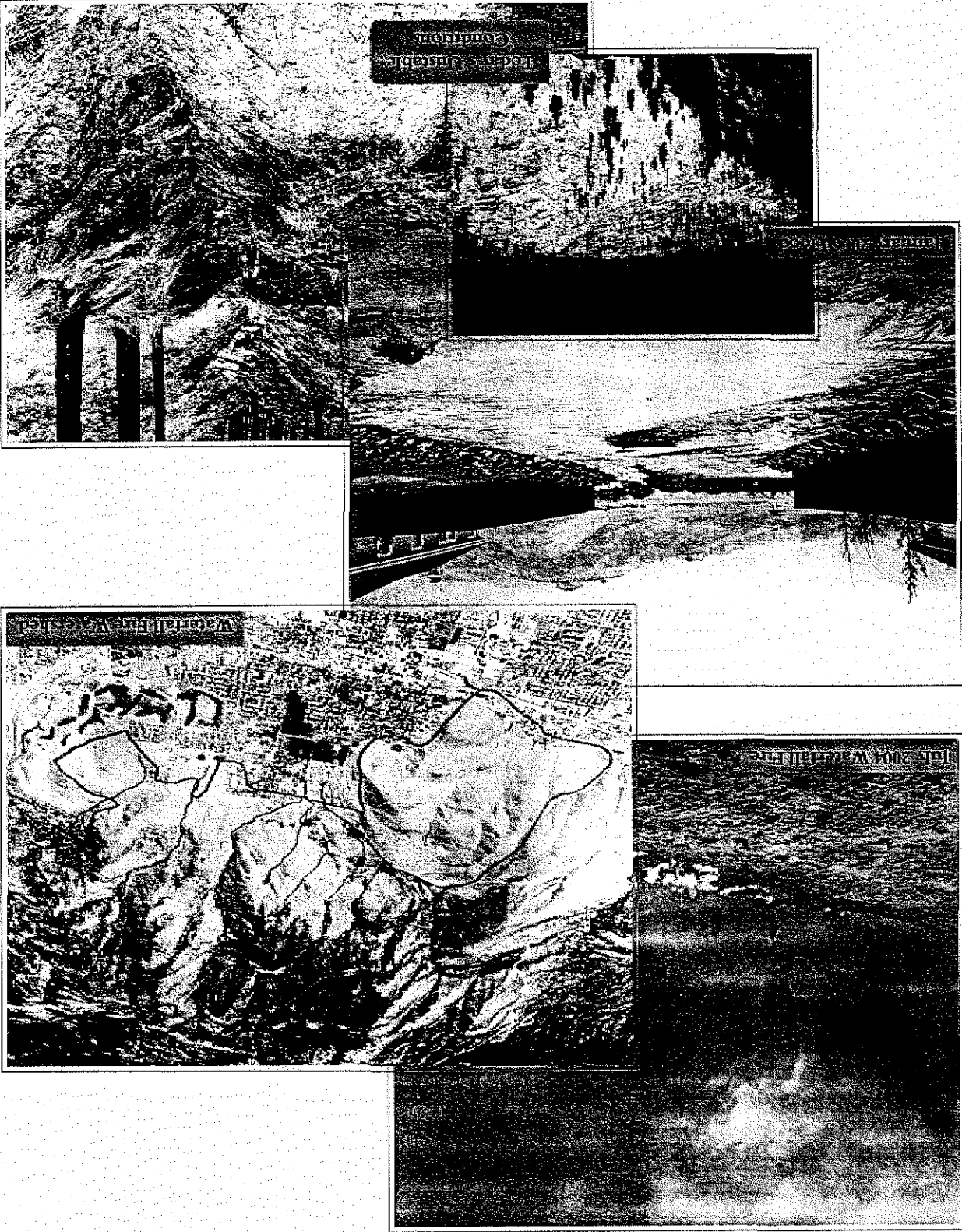
Date: 7/10/07

Board Action Taken:

Motion: _____ 1: _____ Aye/Nay
2: _____

(Vote Recorded By)

Carson City, Nevada Waterfall Fire



Post-Fire

Watershed Critical Needs Assessment

April 2007

Watershed Facts

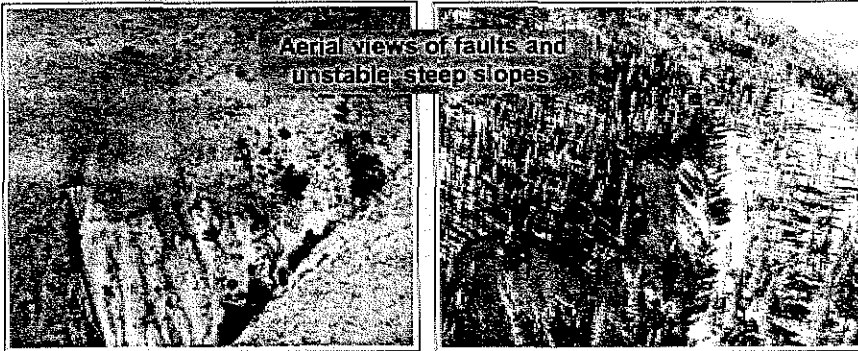
Fault



Geologic faults are clearly visible from Kings Street

- The Carson City watershed is over 13 square miles in size.
- The watershed is an important source of municipal water to Carson City.
- The watershed is highly dissected by geologic faults.
- Soils are very sandy and highly susceptible to severe erosion.

Aerial views of faults and unstable steep slopes



- Slopes are extremely steep and unstable.
- Over 50% of the watershed has greater than 30% slopes.
- 80% of the watershed has no sediment or storm flow attenuation or abatement.
- Much of the City, including the historic and current State Capital buildings are in the waterfall fire watershed floodplain and have been flooded numerous times over the past 100 years.



The 2004 Catastrophic Waterfall Fire

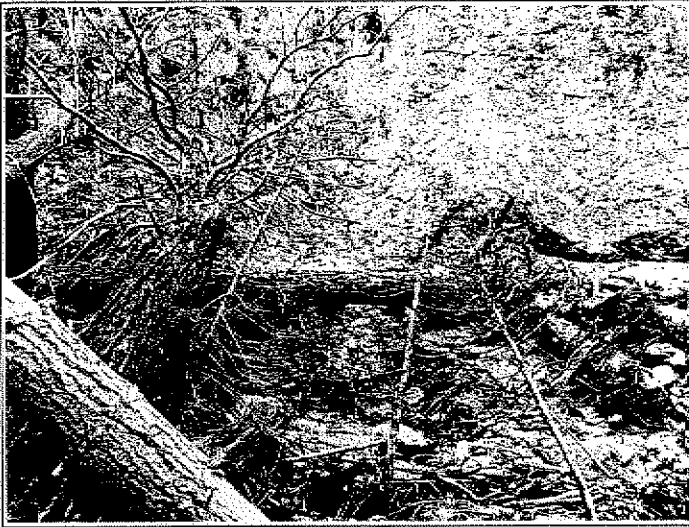
- From July 14 through July 20, 2004, 8,800 acres, roughly 75% of the watershed, was devastated by the catastrophic Waterfall Fire.
- The fire destroyed numerous homes, buildings, property, and protective vegetative cover.
- The burn severity was high to moderate in over half of the burn area. It was worse on steep slopes.
- While many trees were cut and removed, there remain many hazardous trees throughout the watershed that need to be dropped to the ground.

The total loss of vegetation over steep erodible soils increased the erosion and stormwater run-off potential by 100 times.

A Presidential Declaration of Emergency was received and FEMA assisted with emergency stabilization and revegetation measures implemented by the US Forest Service, the Nevada Division of Forestry, and Carson City during 2004 and 2005 to reduce impacts to property and long-term productivity of the watershed.

Carson City was fortunate to have two good precipitation years following the fire and good revegetation success. However, the City experienced significant reduction in water quality and quantity due to debris and ash reducing flow into the City water treatment plant.

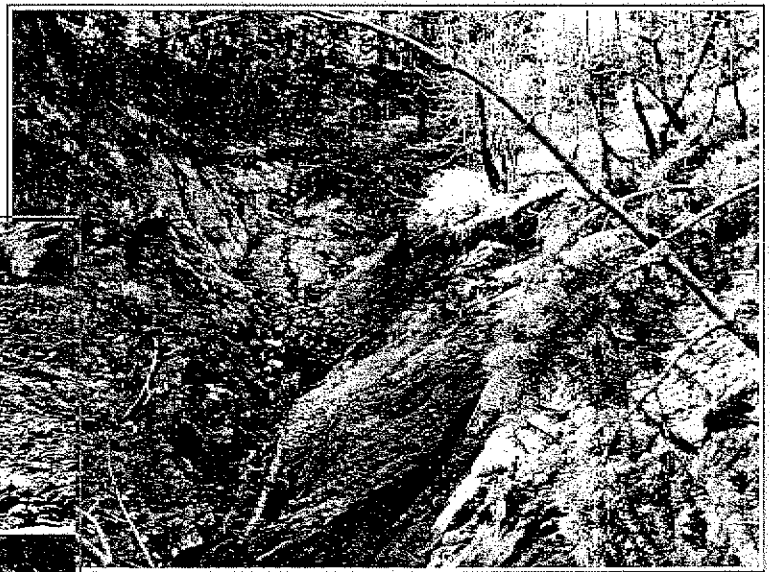
The Devastating 2006 New Years Flood



In January 2006, rain-on-snow ravaged the weakened and vulnerable watershed resulting in:

- Landslides
- Slope failures
- Roadway wash-outs
- Damage to the City's municipal water system
- Thousands of tons of sediment flowed into Carson City
- Debris and sediment plugged storm drains, conveyance channels, and exacerbated flooding of streets, homes, and businesses.

Long-term solutions are needed for the watershed to heal from the devastating fire and flood and to prepare for future events.



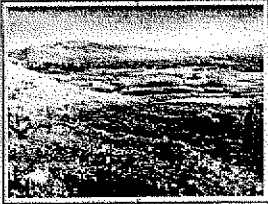
The Watershed Assessment Preliminary Findings

Through the generous support of Senator Harry Reid and the help of the USDA Natural Resource Conservation Service (NRCS) and other partners, Carson City has assessed the post-fire watershed and developed a strategic plan to improve the watershed and protect the City from future flood events.

- Overall, the post-fire emergency stabilization on the hill-slopes performed well during the 2006 flood event.
- There are strategic areas in need of additional revegetation and slope stabilization.
- The magnitude of the erosion within the active watershed drainages is severe, ubiquitous and appears to have been recurring since the Comstock Era.

*Solutions: \$12—\$17 Million

Carson City proposes to implement the following strategic action items to improve watershed stability and sediment and storm flow attenuation.



- **Property Purchases from willing sellers and Conservation Easements** on ranching properties will provide crucial areas for sediment attenuation and abatement near the mountain front while still providing traditional ranching functions.



- **Water and Sediment Attenuation** will occur through land shaping and structures that are compatible with ranching practices and implemented on key properties for floodwater and sediment attenuation.



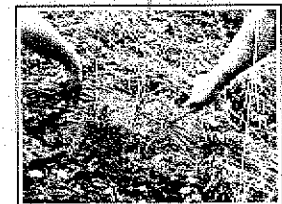
- **Roadway Stormwater Conveyance** structures and facilities will be improved to remove on-going impacts to the watershed from roadways.

- **Drainage Channel Structure & Function Improvements** to selected incised channels will improve hydrologic function and sediment and water attenuation.



- **Structural Slope Stabilization** through log staking and other bioengineering methods will reduce sediment inputs, provide areas for revegetation, enhance watershed stability and maintain the natural beauty of the watershed.

- **Re-vegetation and Weed Control Actions** will enhance the soil infiltration and stabilization for grasses, shrubs, and conifers and will keep noxious weeds from invading the vulnerable watershed.



- **Fuels Reduction Actions** are needed to keep the watershed healthy and minimize the potential for the watershed to be converted entirely to cheat grass—a common problem in watersheds across Nevada.

**This amount is based on a preliminary watershed assessment and is subject to change.*

PARTNERS

- Carson City
- Nevada Department of Wildlife
- Natural Resource Conservation Service
- UNR, Reno Cooperative Extension Service
- Nevada Division of Forestry
- US Forest Service

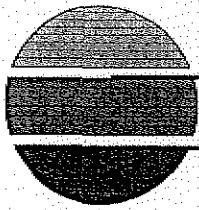
ACKNOWLEDGEMENTS

This briefing document is one product of the Carson City Waterfall Fire Watershed Needs Assessment and Action Plan. Carson City is grateful to Senator Reid for providing support for this project.

Prepared by:



HANDOUT



www.rci-nv.com

Engineering ♦ Planning ♦ Resource Management

Resource Concepts, Inc.340 N. Minnesota St. • Carson City, NV 89703-4152 • (775) 883-1600 • Fax: (775) 883-1656
212 Elks Point Rd, Suite 443 • Zephyr Cove, NV 89448 • (775) 588-7500 • Fax: (775) 589-6333**FYI****Memorandum**

DATE: April 11, 2007
TO: Juan Guzman
FROM: Lynn Zonge and John McLain
PROJECT: Waterfall Fire Watershed Assessment Project
SUBJECT: Immediate Project Needs

The watershed team has developed a list of critical items that would greatly benefit from your immediate attention. You are aware of most of these but we wanted to put another bug in your ear. We would be happy to discuss these at your earliest convenience.

- Communication with the owners of the two 5-acre parcels at the mouth of Premier for purchase, so as to accommodate sediment attenuation and to limit huge headaches for the city down the road.
- Communication with Pederson regarding easement or purchase of the property adjacent to the water treatment plant for use in sediment attenuation.
- Communication with Adams regarding easement or purchase of the property adjacent to Ash Creek near Longview for use in creek / floodplain / sediment attenuation.
- Communication with David Leid regarding easement or purchase of the property adjacent to Ash Creek near the mouth of the canyon for sediment attenuation and perhaps emergency supplies storage.
- Coordination with RCI forester to identify and drop "safety hazard trees" in Coombs, Vicee, and Ash watersheds.
- Placement of signs in the Coombs, Vicee and Ash watersheds notifying the presence of safety hazard trees for public safety.
- Removal of the sandbag check dams and stabilization of gully tributary to Coombs Creek.
- Stabilization below the two air-release boxes in Vicee Canyon
- "Private Property No Trespassing" postings in Vicee Canyon at road turnoff to the air release boxes.

DRAFT



LEGEND






- Interpretive Signage
- Picnic Table
- River Viewing Area w/Benches
- Cottonwood Gallery
- Bank Stabilization

DRAFT

Conceptual Site Plan
Carson City Aquatic Trail Plan
Morgan Mill Rd. Site
Sheet 3 of 3
RESOURCE CONCEPTS, INC.

NTS

LEGEND

-  Interpretive Signage
-  Picnic Table
-  River Viewing Area w/Benches
-  Cottonwood Gallery
-  Bank Stabilization



DRAFT



PROJECT AREA

Morgan Mill Road

N. Deer Run Road

NTS

DRAFT

DRAFT

Conceptual Site Plan
'Carson City Aquatic Trail Plan'
Morgan Mill Rd. Site
Sheet 1 of 2
RESOURCE CONCEPTS, INC.