

**COUNCIL WORK SESSION**  
Tuesday, January 26, 2016, 4:30 p.m.  
Casper City Hall  
Council Meeting Room

AGENDA

1. Police Body Cameras (Chief Wetzel)
2. Parkway Plaza Update (Steven Senft)
3. Casper Area Chamber of Commerce Update (Gilda Lara)
4. Dead Tree Task Force (Pete Meyers)
5. City Manager Report
6. Future Agenda Review
7. Council Around the Table
8. Executive Session – Litigation

January 19, 2016

TO: V.H McDonald, City Manager  
FROM: Jim Wetzel, Chief of Police   
SUBJECT: Body-Worn Camera (BWC) Discussion

Recommendation:

No Recommendation. This presentation serves to provide for discussion of new technology considerations specific to police use of body-worn cameras (BWCs).

Summary:

BWCs are an evolving technology, which serve multiple purposes. There are numerous challenges and considerations involved in implementation and employment of BWCs. The stakeholders in law enforcement's use of BWCs are not just the interacting officer and the contacted citizen but include, witnesses, victims, suspects, prosecutors, uninterested bystanders, extended family of the officer and/or involved citizen(s), civil liberty/privacy advocates, etc. All of these stakeholders have a vested, and potentially competing, interest in how the technology and the vast amount of information captured by the technology are utilized.

Prior to deploying any new technologies, policies, procedures, and training must address:

- The purpose for using the technology;
- How the technology is to be used and the specific information to be collected;
- How long the collected information will be retained;
- Will the technology and/or information be used for secondary purpose;
  - If so, under what circumstances?
- Will the technology and/or information be shared with others;
- Will the information be aggregated with other data;
- What measures will prohibit:
  - Unauthorized access or use of the technology/information; and/or
  - Unauthorized release of information.

Specific to BWCs, the proper and acceptable answers to the above questions may vary from stakeholder to stakeholder depending on their particular agenda or philosophical belief. Accordingly, given such competing interests, the effective outcome of any perceived benefit from employment of BWCs is a double-edged sword. Wyoming currently lacks any BWC law or forthcoming legislation that provides for the double-edge civil liberties/privacy protections needed to assure all stakeholders' concerns are accommodated. (Reference newly enacted Florida law, s. 119.071, F.S., amending their public records act.) Furthermore, as the fielding and application of BWCs by police is still evolving, there is much development, particularly in

the application of the technology that is under constant refinement or has yet to even be foreseen/recognized.

For a mid-size agency, the investment in BWC technology is substantial. It is not merely the cost of a camera to pin on an officer. Servers, storage, integration/interoperability/compatibility software, and hardware quickly amount into the hundreds of thousands of dollars. All of the Casper Police Department's investigations, interviews, and traffic stops are currently audio/video recorded. The Department has struggled, and continues to struggle, to work through server, camera and/or recording failures, as well as a multitude of storage space issues for huge video files that require years of mandatory retention. BWCs are one more technology layer that need to be carefully and mindfully integrated.

Given the ongoing national exploration and uncertainty of BWC policy derivatives, coupled with the lack of specific and fully-defined legal parameters, and the vast sensitivities among competing interests, a patient and deliberate approach to the employment of BWCs best serves the Casper Police Department and the citizens of Casper. The Department will continue to follow the ongoing develop of policy and legislation as well as emerging case law specific to BWCs. The timeline for acquisition and deployment of BWCs within the Casper Police Department will be driven largely by benchmarks in legislative amendments and court upheld policies; both of which would provide more clearly defined parameters in the use of BWCs, and the necessary civil liberties and privacy protections associated with the deployment of BWC technology.



# BODY-WORN CAMERAS

**JIM WETZEL**  
CHIEF OF POLICE  
CASPER POLICE DEPARTMENT

January 2016



CASPER POLICE DEPARTMENT



# Why BWCs?

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- Serve several purposes...
  - Collect evidence.
  - Provide officer evaluation and training.
  - Document officer-citizen interaction.
- However, one purpose garnering the most attention/publicity...

**AN ACCOUNTABILITY TOOL TO POLICE THE POLICE.**



# Current Sentiment

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# Stakeholders

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- The Officer
- The contacted/involved Citizen(s)
- Other less obvious stakeholders:
  - Victims (of crime)
  - Suspects
  - Witnesses
  - Bystanders (both interested/uninterested)
  - Prosecutors
  - Families of officer, involved citizen, victim, suspect, etc.
  - Civil liberty/privacy advocates



# Competing Interests

## Inherent Belief of Law Enforcement

← **Police Inherently Bad**

**Police Inherently Good** →

- If not monitored, Police will:
  - Abuse authority
  - Use excessive force
  - Invade privacy
  - Lie, cheat, steal, etc.
- BWCs will catch and expose the Police being brutal and bad.

- Police should be accountable with appropriate oversight.
- There are a few “bad apples” in every organization.
- BWCs will protect the “good apples” & expose the “bad apples”.

- Police actions are honorable, just, and in good faith.
- Policing is difficult and officers do their best to be judicious in their encounters.
- BWCs will protect the Police from being frivolously targeted.

- All have a vested, but potentially competing interest in how the technology and the captured information is utilized.



# New Technology Considerations

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- Policies, Procedures, and Training MUST address:
  - Purpose for using the technology;
  - How the technology is to be used and the specific information to be collected;
  - How long the collected information will be retained;
  - Will the technology be used for secondary purpose;
    - If so, under what circumstances?
  - Will the technology and/or information be shared with others;
  - Will the information be aggregated with other data;
  - What measures will prohibit:
    - Unauthorized access or use of the technology/information;
    - Unauthorized release of information.



# Double-Edged Sword

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- **CHALLENGE:** Proper and acceptable answers to the questions will vary and potentially be opposing between the stakeholders.
- A perceived benefit by one side is viewed as an unacceptable over-reach/abuse of the technology by the other side.
- ACLU White Paper (v1.0, Oct 2013 / v2.0, Mar 2015)
  - *“...in this revision of the paper we have seen fit to refine our recommendations in some areas, such as when police should record. And of course, the intersection of technology and human behavior being highly complex and unpredictable, we will continue to watch how the technology plays out in the real world, and will most likely continue to update this paper.”*
- The boundaries have yet to be fully defined.



# Double-Edged Sword

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- ACLU vs LAPD BWC Policy.
  - ACLU insists that BWC policies prohibit officers from viewing BWC footage before filing their reports:  
*“Pre-report viewing could cause an officer to conform the report to what the video appears to show, rather than what the officer actually saw.”* – Press Release: The Leadership Conference on Civil and Human Rights, dated May 15, 2015.
  - ACLU filed a complaint to the DoJ BJA in Sept 2015 regarding BJA funding of LAPD’s BWC program. Requested funding to LAPD for BWC program be suspended until such time that LAPD BWC policy conforms to ACLU standards.
  - Such a policy would create a very precarious dilemma for the officer.



# CBP BWC Feasibility Study

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- CBP convened BWC WG to research findings and present recommendations regarding the feasibility of deploying BWCs.
- A 12 month study with final report published August 2015.
- Captured a variety of published research and studies.
- Study identified and concluded potential benefits, as well as significant adverse concerns.



# CBP BWC Benefits

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- **Study concluded the following potential benefits:**
  - Reduce allegations and complaints, deterring frivolous complaints and lower likelihood of use of force incidents.
  - Afford insights into law enforcement encounters that have traditionally been unavailable.
  - Supplement evidence in criminal cases increasing the likelihood of obtaining successful prosecution for those who have violated the law.
  - Enhancing training capabilities through utilization of footage as a learning tool.
  - Contribute to a “civilizing effect” on law enforcement/civilian interactions by reducing hostilities between officers/agents and citizens.
  - Strengthen officer performance and accountability.
  - Increase officer awareness and safety by influencing public behavior.
  - Simplify incident review by enabling the quick and immediate review of footage.



# CBP BWC Concerns

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- **Study concluded the following significant adverse concerns:**
  - Impacts to officer safety. The BWCs increase the cognitive load experienced by officer, causing them to redirect their attention towards the operation of the camera versus allowing them to focus on the encounter. BWCs may also cause an officer to second-guess a course of action.
  - Implementation of a BWC program may be interpreted as a lack of trust in officers, which could negatively impact morale and create mistrust and suspicion between officers and management. Officers involved in the study were concerned about the BWC video being used for disciplinary actions and uncertain about the BWC technology capabilities and limitations.
    - i.e. - High-Definition cameras able to pick up details the human eye is not able to capture under certain circumstances; i.e. – lighting conditions, etc.*



# CBP BWC Concerns

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- **Significant adverse concerns (*continued*):**
  - BWCs cannot capture the physiological and psychological phenomena that an officer experiences during a high stress situation.<sup>8</sup> Consequently, the footage may not accurately convey the same sense of threat that is experienced by an officer.
  - The presence of a BWC may negatively impact information gathering, such that the public may be less likely to divulge information if they know they are being recorded.
  - BWC technology, and its corresponding software, may pose a significant vulnerability and security risk to [operations] through the availability of Bluetooth capabilities, interactive apps and a lack of adequate security features. Streaming and interfacing with other devices and signals from BWCs could be susceptible to hacking.



# CBP BWC Concerns

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- **Significant adverse concerns (*continued*):**
  - The significant costs associated with implementation, including those that must be born long after the initial purchase costs have been defrayed, such as: technology enhancements, infrastructure improvements, associated costs of storage, and additional staffing requirements to support the management of footage.
  - The associated man-hours needed to manage and support the program, such as: enforcement hours lost due to new administrative duties for end of shift uploading of footage, processing of Freedom of Information Act (FOIA) requests, records management and retention, training, and technology infrastructure support.



# CBP BWC Conclusion

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“For the immediate future, BWC technology will continue to outpace policy and law, and BWC technology decisions will continue to be made with a decided lack of supporting data. Innovation is always ahead of regulation, and this technology is no different. The BWC WG recommends against sacrificing a deliberative and methodical process in order to expedite a deployment decision.”

“Thoughtful consideration of the advantages and disadvantages of BWC technology [and] resolution of policy issues... should direct the implementation decision and timeline.”



# Benchmarks

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- **Legislation.**

- Specifically, amendments to Wyoming Public Records Act.
  - Florida State Statute 119.071(2)(l)
  - North Dakota H.B. 1264, amending code 44-04-18.7 to exempt disclosure of images from BWC taken in a private place.
  - *Paff v. Ocean County Prosecutor's Office*
    - “ongoing investigation exception” does not exempt police video recordings from public records law.
  - Reporters Committee for Freedom of the Press appealed a denial by D.C. Metropolitan Police for BWC footage from first two days of pilot program.
- Illinois Public Act 099-0352, Article 10 “Law Enforcement Officer-Worn Body Camera Act”.
- South Carolina Statute 23-1-240. (June 2015).
  - Require all state and local law enforcement officers to implement use of BWC pursuant to guidelines established by the Law Enforcement Training Council.



# Benchmarks

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- **Case Law.**
  - Both public/citizen and officer privacy concerns.
  - *Lynch v. NYPD* (2013).
    - Post-shooting breathalyzer “special needs” exception to 4<sup>th</sup> Amendment. Presumption that officer did something wrong (Skinner railroad case).
  - *Floyd v. City of New York* (2013).
    - “Stop and Frisk” unconstitutional... ordered officers to wear BWCs.
  - When is the camera to be turned on/off?
    - Non-law enforcement contacts?
    - *Allen v. City of Oakland* (2012). “Occupy Oakland” protests.
  - Failing to record... Inevitable conspiracy theory
    - Intentional or negligent
    - Defective equipment/Time or emergent conditions situations?
  - Notification to citizens?



# Body-Worn Cameras

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**QUESTIONS?**



## **MEMORANDUM**

**The Honorable Mayor and City Council**

**January 19, 2016**

**Presentation-Ms. Gilda Lara, Executive Director of the Casper Area Chamber of Commerce**

Casper Area Chamber of Commerce Executive Director, Gilda Lara, has requested an opportunity to make a presentation to the Casper City Council at their work session on Tuesday, January 26, 2016. Ms. Lara would like to provide a brief overview the Casper Area Chamber of Commerce Board of Director's Strategic Goals for Fiscal Year 2015-2016 (YTD information will be provided) and commonalities associated with the City Council Strategic Goals. Outcomes associated with funding provided to the Casper Area Chamber of Commerce and Visitors Center will also be addressed as a part of the total presentation. The information mentioned above will be outlined during a short power point presentation lasting no more than 10 minutes.

As of the writing of this memorandum, Ms. Lara does not have any handouts associated with the presentation. Ms. Lara plans on distributing any associated material to Council prior to her January 26, 2016, presentation.

January 18, 2016

MEMO TO: V. H. McDonald, City Manager

FROM: Andrew Beamer, Public Services Director  
Pete Meyers, Assistant Public Services Director  
Dan Coryell, Parks Manager  
Jim Gerhart, Parks Supervisor

SUBJECT: Tree Task Force Update

Recommendation:

That the Casper City Council continue to address tree loss throughout the City of Casper.

Summary:

Casper's climate is a high plains desert featuring wind, extreme temperatures, and low precipitation. Most trees do not survive here without irrigation and professional care. Despite these natural obstacles, the City of Casper has a long history of promoting tree growth. Casper has been a member in good standing of Tree City USA for 18 years. The Parks Division currently employs five ISA Certified Arborists. A 2006 Department of Agriculture survey determined that the City was home to 123,000 trees.

Many years of slow growth have now been counteracted by two massive climate-related setbacks. A snowstorm on October 3, 2013, caused thousands of trees to lose their branches. In the aftermath of that event, more than 6,000 tons of timber was collected in the form of broken branches and fallen trees. A second event occurred on November 11, 2014. Within a one day period, temperatures dropped from positive 55 degrees to negative 19 degrees Fahrenheit. Temperatures then rose slightly before falling to negative 27 degrees the following day. The sudden change of temperature meant that many trees, especially Siberian Elms, were not in full winter hibernation at the time of the freeze. These trees suffered damage at the cellular level.

**Tree Task Force**

By the summer of 2015 it was clear that many of Casper's trees were dead or dying. Tom Heald, a concerned citizen and owner of the Wyoming Plant Company, wrote the mayor to express his concern. The City Council responded by forming a Tree Task Force to assess the problem and propose solutions.

The Tree Task Force was composed of City staff, property experts, tree care professionals, and Councilman Ray Pacheco. The Task Force met on September 3, 2015 and again on September 17, 2015.

The Task Force had three key recommendations:

1. Establish a Tree Mortality Count: Efforts had been made to assess the scope of the problem, but no one had yet established a reliable and widely accepted tree mortality count. Estimates ranged from 4,000 to 20,000 trees lost.
2. Identify Funding: Any significant mitigation program would require significant funding. Federal grants were seen as the only likely source for the kind of funds needed, but there had been no disaster declaration. Without a declaration, there was fear that the City would be completely ineligible for disaster relief funding.
3. Public Information Campaign: The Task Force members unanimously agreed that the public was not responding forcefully enough to the situation. Many trees were dying but not yet dead. The arborists on the Task Force were in agreement that these trees should be removed quickly. Trees that are partially dead can be removed for a reasonable fee because arborists can climb and delimb the tree piece by piece. Trees that are completely dead must be taken down with bucket trucks and other equipment. The need for additional equipment dramatically increases the cost of removal, so it was imperative that the public be advised to remove their trees sooner rather than later.

Since the meetings of the Tree Task Force, progress has been made on several of these issues.

### **Tree Mortality Count**

Systematic counts of tree loss have now been performed in four neighborhoods and three parks. Jim Gerhart, the City's Municipal Arborist, counted thousands of trees and recorded them by species and mortality. Of the 2,142 trees counted, 698 (33%) were either dead or dying. The contraction of the tree canopy was assessed using aerial photography from the US Department of Agriculture. Denyse Wyskup, the City's GIS Administrator, analyzed data from USDA flights in 2012 and 2015. Her comparison found a canopy loss of 42%. The tree loss figures and the loss of canopy have since been extrapolated to a citywide loss of 40,000 trees, or about 32% of the City's tree population.

### **Funding**

Constance Lake, the City's MPO GIS Specialist, has done extensive research into the availability of federal disaster grants. One of her findings was that the City might be eligible for unspent funding that had been set aside for a flooding event in Lusk. As a result of her research, the City has begun the process of applying for a \$300,000 Hazard Mitigation Grant. A Notice of Interest (NOI) was submitted in October 2015. Homeland Security Officials have judged that the NOI is suitable for potential funding, and as a result, the City has received approval to submit a formal application.

### **Public Information Campaign**

A public information campaign is set to begin in February 2016. The first round of the campaign will encourage homeowners to remove their not-quite-dead trees ("Zombie Trees") before they become fully dead and dangerous. The second round, set to begin in March, will encourage homeowners to plant new trees. This will include guidance on appropriate trees for Wyoming's climate and planting the right tree in the right place – avoiding overhead power lines, and planting far enough away from nearby fences, buildings, and pavement.

## **Long Term Mitigation**

Tree removal is already underway. City staff have cut down many trees from city parks, and that effort will continue through the upcoming summer. Other trees are being removed by private property owners at their own initiative. A Hazard Mitigation Grant, if approved, will help to remove additional trees. If all else fails, the City's Building and Code Enforcement Division has the legal ability to compel property owners to remove a dead tree if it is posing an immediate threat to roads, sidewalks, or other types of public property (Municipal Code, 12.32.170, para. C).

A greater concern is the long term recovery of the City's urban forest. The Parks Division runs the Street Tree Program, which seeks to plant trees on public property and along public streets. The program plants about 160 trees per year. This program is popular and it is having a positive impact, but by itself, the program is not large enough to effect a full recovery of the City's urban forest.

More significant programs are now being explored. In 2017, the Parks Division intends to conduct a formal study of the City's tree population. The last formal study was performed in 2006, but given the recent events, that study is now hopelessly out of date. A new study will set a new baseline tree population, and it will help us to better identify patterns of loss by species and location. Programs to involve the private sector will also be reviewed. The City's municipal code includes landscaping requirements for new developments. These code provisions will be reviewed to see if they can be leveraged toward planting more trees, larger trees, and trees that will add to the biodiversity of the City's urban forest.

## **Tree Task Force Members**

### **Elected Officials:**

Ray Pacheco, Casper City Council

### **Casper City Staff:**

Pete Meyers, Asst Public Services Director

Dan Coryell, Parks Manager

Shelley LeClere, Code Enforcement Manager

Constance Lake, Planning Technician

Jim Gerhart, Parks Supervisor / Municipal Arborist

Zulima Lopez, Risk Manager

Cassia Smith, Budget Administrator

### **Tree Care Professionals:**

Donna Hoffman, Agricultural Extension Office

Tom Heald, Wyoming Plant Company

Robert Vanderhoof, Rocky Mountain Power

Corey Nielsen, All Trees tree service

Ryan Wenger, All Trees tree service

### **Property Experts:**

Dennis Buchholz, WCDA

Kathleen Vuolo, Homeowner

Mike Lougee, State Farm Insurance

Leslie Blythe, Rocky Mountain Power

### **Special Thanks:**

Denyse Wyskup, Regional GIS Administrator – GIS Analysis

Beth Andress, KCB Coordinator – Public education campaign

Chuck McCain, Municipal Worker – Tree counts



**Legend**

- Eastdate\_Park\_2015
- Eastdale Park 2012

# Calculation of Tree Loss - 2015

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The City of Casper suffered a traumatic freezing event in November 2014. Temperatures reached a high of 55° F on November 10, then dropped to negative 19° F the following night. The freeze then intensified, reaching an ultimate low of negative 27° F on November 11. Many trees froze internally. The event was doubly impactful because many of these trees had already been damaged by Snowstorm Atlas in the previous year.

By the summer of 2015 it was clear that many of Casper's trees were dead or dying. In August 2015, the Casper City Council requested the formation of a Tree Task Force to address the tree loss disaster. One of its initial tasks was to estimate the extent of the problem. Several arborists were members of the task force. Their initial estimates ranged from a low of 4,700 trees lost to a high of 20,000.

Several strategies have since been employed by city staff to create a reliable and defensible estimate of tree mortality. This report is the result of those attempts.

## Measurement Techniques

Four sources of information were used for this project.

1. A 2006 study by the United States Department of Agriculture used an Urban Forest Effects Model (UFORE) to estimate the total number of trees in Casper's urban forest, with a breakout by species. The result was an estimated tree population of 123,000.
2. Three city parks were specifically surveyed for tree loss: Washington Park, Conwell Park, and Eastdale Park. 98 trees were removed from these parks for an overall tree mortality rate of 47%.
3. Specific tree loss numbers were gathered from four Casper neighborhoods. A city arborist counted trees, by species, throughout these neighborhoods: Poplar Area, Fort Casper, North Casper, and University Park. Only front yard trees were counted. 1,932 trees were identified, including 600 that were deemed to be dead or dying, for an overall mortality figure of 31%.
4. National Agriculture Imagery Program (NAIP) flight data was collected from the US Department of Agriculture, including flights from 2012 and 2015. The NAIP flights took aerial photography during the summer so that leaf coverage could be assessed. The first flight occurred well before Snowstorm Atlas, and the second flight occurred the summer after the sudden freeze. The flights do not identify individual trees; instead, they can be used to measure the area of the city's tree canopy. A comparison of the two flights shows the cumulative impact of the two traumatic events. These flights found a canopy loss of 54% in the three surveyed parks (Washington, Eastdale, and Conwell) and a canopy loss of 38% in the surveyed neighborhoods (Poplar Area, Fort Casper, North Casper, and University Park).

## Tree Loss - Counted Areas

<u>Areas</u>	<u>Counted Number of Dead Trees</u>	<u>Counted Number of Trees Overall</u>	<u>Mortality Rate</u>
Conwell Park	18	56	32%
Eastdale Park	28	60	47%
Washington Park	52	94	55%
Fort Casper Neighborhood	162	467	35%
North Casper Neighborhood	195	477	41%
Poplar Area Neighborhood	70	452	15%
University Park Neighborhood	173	536	32%
<b>Total</b>	<b>698</b>	<b>2142</b>	<b>33%</b>

<i>City Parks Only</i>	98	210	<b>47%</b>
<i>Neighborhood Areas Only</i>	600	1932	<b>31%</b>

## Canopy Loss – from NAIP Flight Data

	Surveyed Area (SF)	Canopy Coverage 2012 (SF)	Canopy Coverage 2015 (SF)	Canopy Coverage 2012 (%)	Canopy Coverage 2015 (%)	Canopy Change (%)
Fort Casper Neighborhood	1,219,354	539,409	335,583	44%	28%	-38%
North Casper Neighborhood	1,313,241	348,840	103,454	27%	8%	-70%
University Park Neighborhood	1,421,406	284,640	225,523	20%	16%	-21%
Eastdale Park	207,638	50,380	6,195	24%	3%	-88%
Conwell Park	123,735	72,837	38,759	59%	31%	-47%
Poplar Area Neighborhood	1,308,986	172,482	165,122	13%	13%	-4%
Washington Park	1,081,585	258,382	128,850	24%	12%	-50%
<b>Aggregate</b>	<b>6,675,945</b>	<b>1,726,970</b>	<b>1,003,486</b>	<b>26%</b>	<b>15%</b>	<b>-42%</b>
<i>Canopy Loss, All Neighborhoods</i>	5,262,987	1,345,371	829,682	26%	16%	<b>-38%</b>
<i>Canopy Loss, All Parks</i>	1,412,958	381,599	173,804	27%	12%	<b>-54%</b>

## Tree Counts with UFORE Data

The UFORE study of 2006 is the only available tree population estimate for all of Casper. This study's number of 123,000 trees is therefore used as a baseline. From this baseline, there are three plausible calculations that could be performed to estimate overall tree loss:

1. **Tree Loss through UFORE and Tree Count Mortality Rate:** Tree loss can be extrapolated from the tree count mortality figure (33%) and the baseline UFORE number.  $33\% * 123,000 = 43,199$ .
2. **Tree Loss through UFORE and Canopy Loss Rate:** Tree loss can be extrapolated from the canopy loss figure (42%) and the baseline UFORE number.  $42\% * 123,000 = 51,528$ .
3. **Tree Loss through UFORE and Tree Count, By Species:** Tree loss can be calculated based on the tree count mortality figure, but adjusted for the prevalence of each species. The 2015 tree count did not perfectly align with the species sample that was found in the 2006 UFORE study. If the UFORE study is presumed to have the more statistically accurate breakdown by species, then the 2015 tree count numbers can be corrected with tree loss by species. For example: The 2015 tree count identified 260 plains cottonwood trees (either dead or alive), which constituted 12% of the overall number of trees counted. However, the UFORE study found that plains cottonwood accounted for 17.5% of Casper's urban forest; in other words, the number of plains cottonwood counted in 2015 was statistically low compared to the actual number from the UFORE count. 62 of the cottonwoods (24%) were found dead in the 2015 count. If the 24% mortality figure is correct for all cottonwoods in the city, then it can be applied to the more accurate number of cottonwoods as identified by UFORE in 2006.

$$123,000 * 17.5\% = 20,910 \text{ plains cottonwood in 2006}$$

$$20,910 * 24\% \text{ cottonwood mortality rate} = 5,018 \text{ deceased plains cottonwood}$$

When the 2015 count is adjusted for species, the result is a total loss of 21,008 trees.

## Avoiding UFORE Data

The city's overall tree population can be extrapolated from the counted areas, which allows us to avoid the UFORE data on the off chance that it was flawed in some way. The 2015 counts covered 121 residentially zoned acres and 32 park acres, which constitutes 2.6% of the city's residential area and 1.3% of the city's park area. If we assume that the residential density of trees from within the surveyed area is representative, then the 1,932 residential trees surveyed can be extrapolated to 74,693 residential trees citywide. Likewise, the 210 park trees surveyed can be extrapolated to 16,587 park trees citywide. The extrapolated total number of trees in park or residential areas, therefore, comes to 91,280.

It should be noted that a key drawback of this method is that it excludes all commercially or industrially zoned property. There is no easy fix to this flaw, but some consolation can be drawn

from the belief that the residential and park areas probably contain the vast majority of the city's urban forest.

4. **Tree Loss through Extrapolated City Area, Tree Count Mortality Rate:** The Tree Count resulted in a 31% mortality rate in residential areas and a 47% mortality rate in parks. Applying these numbers to the extrapolated tree population results in 35,105 dead residential trees and 5,142 dead park trees, so the total number of dead trees citywide is 40,248.
5. **Tree Loss through Extrapolated City Area, Canopy Loss Rate:** The same method can be applied to the residential and park trees, but instead of using the tree count mortality numbers, we can use the canopy loss mortality numbers of 38% for residential areas and 54% for parks. The result is 28,630 trees lost in the residential areas and 9,032 trees lost in parks, so the total number of dead trees citywide comes to 37,662.

### Summary of Counts:

1. Tree Loss through UFORE and Tree Count Mortality Rate:	43,199
2. Tree Loss through UFORE and Canopy Loss Rate:	51,528
3. Tree Loss through UFORE and Tree Count, By Species:	21,008
4. Tree Loss through Extrapolated City Area, Tree Count Mortality Rate:	40,248
5. Tree Loss through Extrapolated City Area, Canopy Loss Rate:	37,662
<hr/>	
Average of Five Counting Methods:	38,729
Range of all Counting Methods:	low of 21,008
	high of 51,528

### Conclusions

For the time being, the City will use 40,000 as the official estimate of the number of trees lost from the 2014 freezing incident. This is an imperfect number for various reasons, but it is also a workable number that is not very far removed from any of the five estimates generated.

One notable critique of this estimate is that it was generated from areas that were not randomly selected. The 2006 UFORE study collected data from 234 plots, with each plot equal to one tenth of an acre, for a total surveyed area of 23.4 acres. The 2015 counts were made by surveying 153 acres of park land and residential front yard. This is much larger than the UFORE area, but these areas are much more concentrated (distributed across just three parks and four neighborhoods) and they were not selected randomly.

It has been ten years since the last UFORE study, and given the events of the last decade, another formal UFORE is probably in order. There have been two traumatic tree killing events, but there

have also been other events that have impacted the urban forest. The overall area of the city has grown, with many acres annexed, particularly in the south and the east. The city has eliminated thousands of Russian Olive trees, especially in the riparian areas of the North Platte River. Last but not least, the city's Street Tree Program was initiated in this time period, and the purpose of that program has been to expand the city's urban forest and to increase the biodiversity of its trees.

For now, it is sufficient to know that many thousands of trees were killed by this event. We must acknowledge that any mitigation program will need to be muscular enough to handle thousands of trees. We must also acknowledge that even with a robust recovery effort, the city's urban forest will take years to recover.

**THERE IS A MENACE HAUNTING THE STREETS OF CASPER...**



## **THE STANDING DEAD**

**Don't let a little green trick you. Remove the threat, before it's too late.**

Many trees in Casper have been traumatized by extreme weather in the last two years. Many trees simply did not recover and are now haunting the streets of Casper, ***not quite dead, but not quite alive***. Some of these trees have tufts of green leaves making them seem like they are truly alive, but don't let these trees fool you. These dead and dying trees can become a hazard to your home, your business, vehicles, and pedestrians.

**Don't wait until disaster strikes, remove them now.**

### **How do I know if my tree is dead or dying?**

If there were no leaves on your tree this summer, then it is easy to tell that it is dead and it should be removed as soon as possible. If your tree had less than half of the leaves it had last year, it is dying and should be removed. It is less costly and safer to cut down a tree that is dying, but not yet fully dead. If you are unsure of the health of your tree, consult an arborist with a tree company, the University of Wyoming Cooperative Extension, or with the City of Casper.

### **How can I get more information or help?**

To receive advice from one of the city's arborists, or to schedule a free site visit, call the City's Parks Division at (307)235-8283. More information is also available on the city's website: [www.casperwy.gov](http://www.casperwy.gov)

Return to: Wyoming Office of Homeland Security  
5500 Bishop Boulevard, Cheyenne, WY 82002  
[melinda.gibson@wyo.gov](mailto:melinda.gibson@wyo.gov) (e-mail) 307.777.4914 (desk) 307.635.6017 (fax)

# Notice of Interest

HMGP – DR-4227

## Part I

### Applicant Information

<i>Name of Applicant (Jurisdiction)</i>	City of Casper
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### Point of Contact Information

<i>First &amp; Last Name</i>	Pete Meyers
<i>Title</i>	Assistant Public Services Director
<i>Agency/Organization (if different from applicant)</i>	
<i>Address 1</i>	200 North David Street
<i>Address 2</i>	
<i>City, State ZIP</i>	Casper, WY 82601
<i>Office Phone</i>	307-235-8283
<i>Cell Phone</i>	307-333-3124
<i>Fax</i>	307-234-0709
<i>E-mail</i>	pmeyers@casperwy.gov

### Alternate Point of Contact Information

<i>First &amp; Last Name</i>	Dan Coryell
<i>Title</i>	Parks Manager
<i>Agency/Organization (if different from applicant)</i>	
<i>Address 1</i>	200 North David Street
<i>Address 2</i>	
<i>City, State ZIP</i>	Casper, WY 82601
<i>Office Phone</i>	307-235-8283
<i>Cell Phone</i>	307-315-8058
<i>Fax</i>	307-234-0709
<i>E-mail</i>	dcoryell@casperwy.gov

## Part II

### Community Information

<b>Does your jurisdiction participate in the National Flood Insurance Program (NFIP)?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Does your jurisdiction have a mitigation plan?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    Expiration Date: September 19, 2016

### Project Information

<b>Project Latitude</b>	N 42 deg 50' 44.7372"
<b>Project Longitude</b>	W 106 deg 18.993988'
<b>Project Location or Address</b>	City of Casper, Wyoming
<b>Describe the problem to be solved</b>	
<p>Casper suffered a catastrophic freezing event in November 2014. Temperatures reached a high of 55° F on November 10, then dropped to negative 19° F the following night. The freeze then intensified, reaching an ultimate low of negative 27° F on November 11. Winter storms are specifically identified in Natrona County's hazard mitigation plan document.</p> <p>The freeze was sudden, and it occurred early in the year. Many trees were not yet in hibernation which caused them to freeze internally. A systematic count by municipal arborists resulted in an estimate of 33% citywide tree death as a result of this event; an analysis of Department of Agriculture flight data puts tree canopy loss at 42%. The Casper City Council has met to discuss the implications of this event, and they have ordered the creation of a task force to develop solutions.</p> <p>City employees have been actively removing dead trees from city parks and other city-owned property. So far this year, 55% of the trees were removed from Washington Park (52 trees), 32% of the trees were removed from Conwell Park (18 trees), and 43% of the trees were removed from Eastdale Park (28 trees).</p> <p>Tree removal throughout the city's other 45 parks is ongoing, but tree removal from the more inaccessible areas, such as drainage ways, has not yet begun. The cost of tree removal from a park, if it is performed by city staff, is roughly \$300 per tree. Removal from inaccessible locations, such as the Garden Creek drainage way, is far more difficult and expensive. Drainage ways are of particular concern because the deadfall in these areas creates the potential for flooding and wildfires. Garden Creek has been identified as being particularly hazardous because it extends to the mountain, thereby creating a fire corridor for forest fires that runs directly into an urban neighborhood. Flooding and forest fires are specifically mentioned in Natrona County's hazard mitigation plan.</p> <p>Many trees are in the process of dying as a result of this disaster, but they are still standing. The cost of private sector tree removal is approximately \$1,200 per tree, but this figure increases significantly when the tree becomes completely dead (skeletal) and unsafe to climb. Homeowners have not acted quickly to remove these trees, and many local arborists are fearful that they will not act unless and until the tree becomes an immediate hazard.</p> <p>This tree loss event has decimated the city's urban forest, and even under the most optimistic of scenarios, the city's forest will take more than a decade to recover. Hazard Mitigation grants will be sought to help with the removal of dead trees from city property and city rights of way (streetside areas) and the planting of replacement trees. In the short term, the tree removal will promote public safety and enhance the city's appearance, which should in turn help to enhance the local economy. In the long term, the recovery of the city's urban forest will require an aggressive campaign of tree planting and tree care.</p>	

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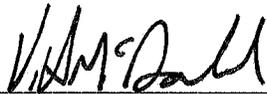
**Briefly describe the alternatives considered and proposed/selected mitigation activity to solve the problem.**

The alternative to government removal of dead trees would be reliance on the property owners to remove them. Homeowners are being encouraged to remove their dead trees, but many have proven reticent. A public information campaign has already been launched to encourage tree removal. This may have an impact on the problem, but we presume that many property owners are financially unable to remove these trees. Casper's economy has been impacted by the recent decline in oil and gas prices; taxable sales within the city have dropped by 20% over the previous year. In a weak economy, it is natural to expect homeowner resistance to paying a large and unanticipated expense. Given the scope of the disaster, it is inevitable that many trees will end up falling naturally if an incentive program cannot be developed.

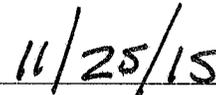
The city government cannot afford to hire private sector arborists to remove all of the trees that were lost in this event. The program that is being envisioned would help to fund three types of tree removal:

1. Fully fund the removal of trees and tree limbs from parks and city-owned urban areas. Dead trees in these areas pose an inherent threat to pedestrians.
2. Fully fund the removal of trees and deadfall from drainage ways throughout the city. Dead trees in these areas contribute to the risk of flooding and forest fires.
3. Create an incentive program for homeowners that would fund a portion of the cost to remove trees from within the streetscape right of way. Trees in the right of way are the homeowner's responsibility, but Hazard Mitigation funding could be used to pay a portion of the cost – for example, the homeowner may be asked to pay for half of the removal while the Hazard Mitigation grant pays for the remaining half. Trees in these areas pose an inherent threat to pedestrians and motorists.

<b>Total Estimated Cost</b>	<b>\$400,000 (Includes \$100,000 local match)</b>
<b>Source of Matching Funds</b>	<b>General Fund Reserves and In Kind Contribution (City Staff)</b>



Signed



Date

V. H. McDonald

Printed Name

City Manager

Title