



# **Former Camp George West Artillery Range**

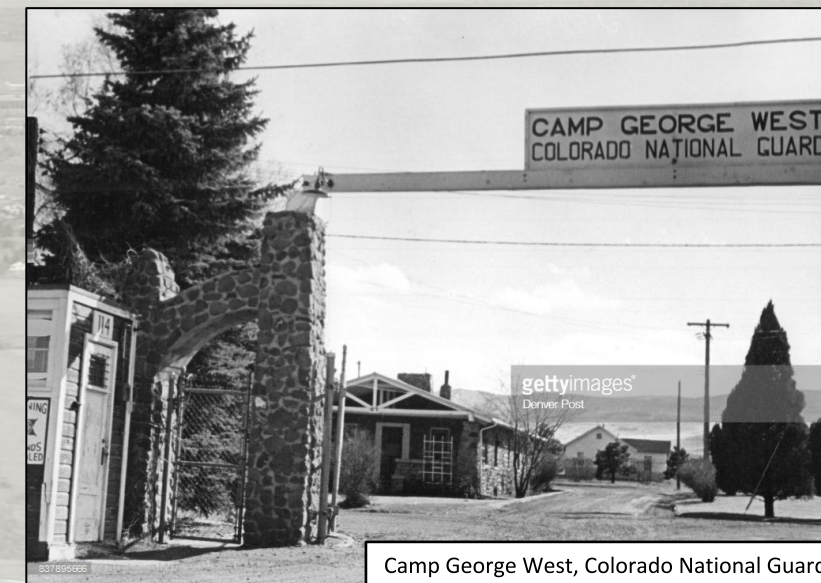
Lakewood, Colorado

Background Briefing  
Open House Meeting  
February 22, 2018

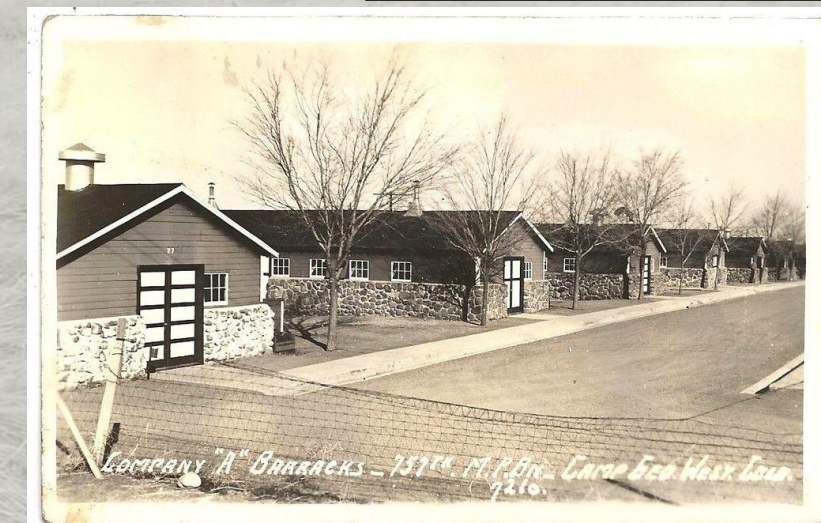


# Camp George West History

- Camp George West is located near the junction of West Colfax Avenue and Interstate 70, three miles east of Golden
- Founded in 1903 as the state militia's permanent rifle range and training facility (now National Guard)
- State Rifle Range renamed Camp George West in 1934
- Home to 757th Military Police Battalion during WWII
- 1993 Camp George West listed on National Register of Historic Places as a historic district

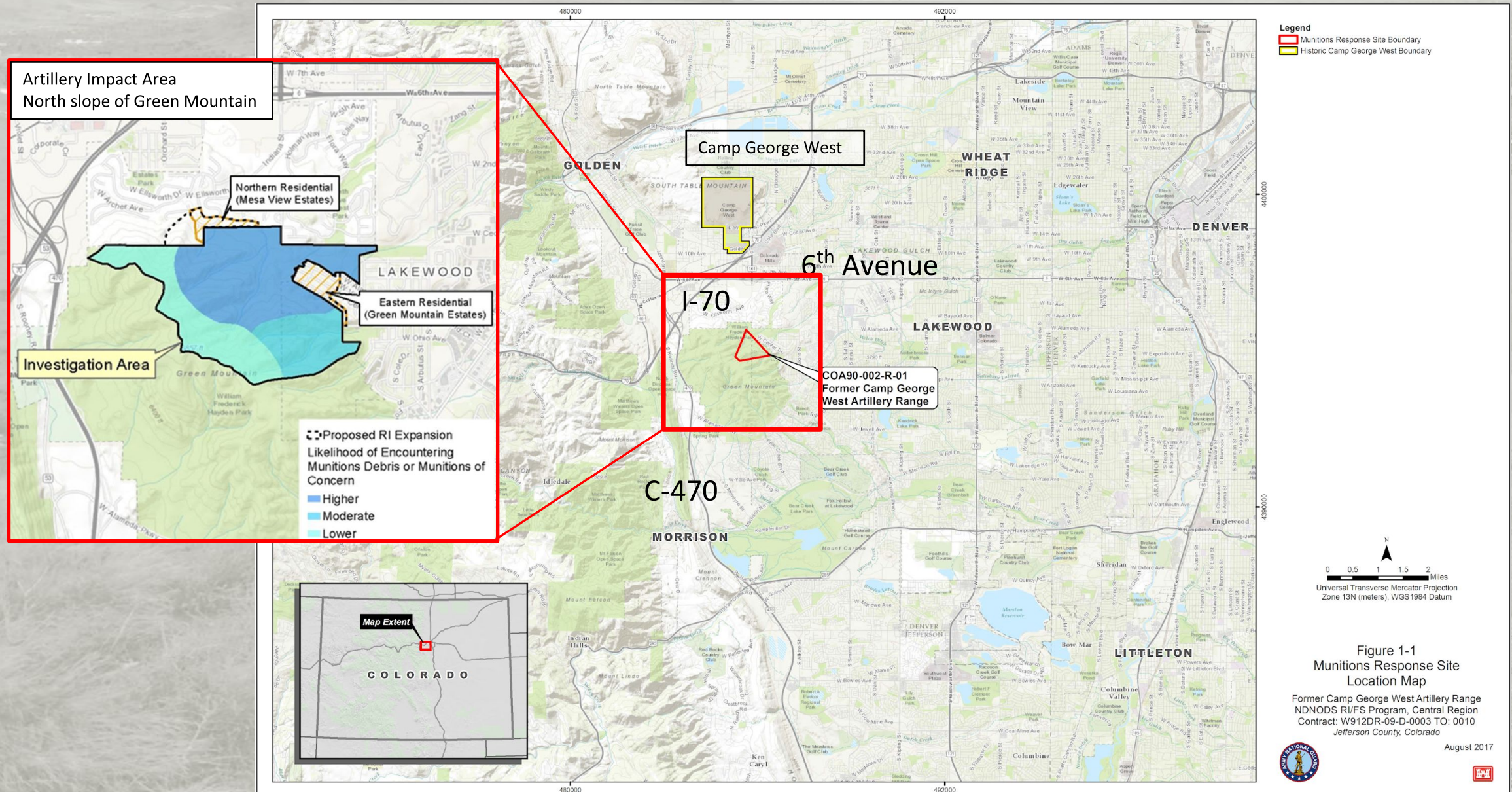


Camp George West, Colorado National Guard  
(Denver Post, Getty images)





# Camp George West Location Map





# Military Training at Camp George West

- Camp George West used for military training from 1903 to 1945
- Colorado Army National Guard used for target practice during annual encampments, and rifle and pistol instruction
- 757th Military Police Battalion training during WWII
- Leased portions of Green Mountain for artillery training



Army Cavalry Unit at Camp George West  
(Western History, Denver Public Library)



Camp George West  
(Western History, Denver Public Library)



Junior ROTC at Camp George West  
(Denver Post, Getty images)

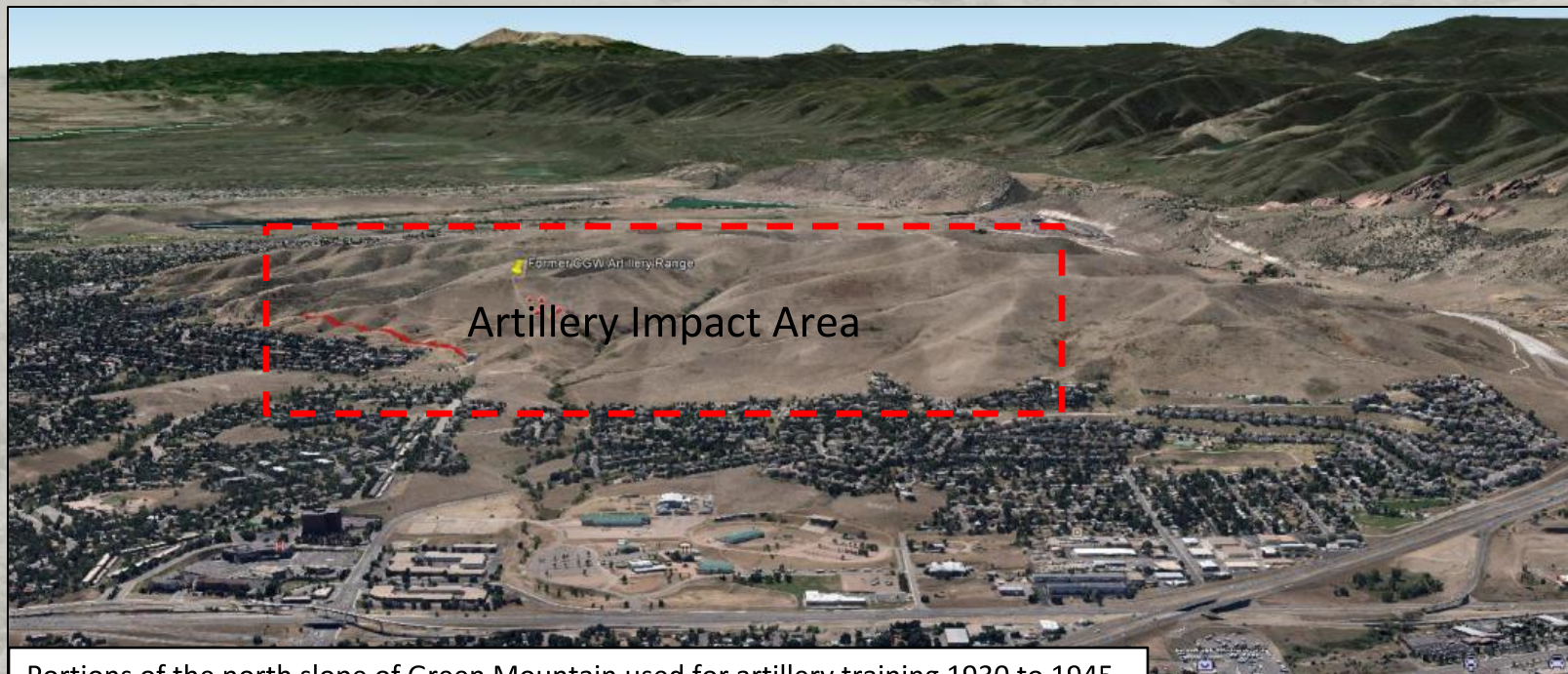


COARNG prepares to fire cannon while training at Camp George West  
(Denver Public Library Western History Photograph Collection)



# Military Training on Green Mountain

- Portions of Green Mountain leased from William F. Hayden family by Colorado Army National Guard in 1930s
- North slope of Green Mountain used for artillery training 1930 to 1945
- Training location: No historical records or maps of training ranges
- Artillery training: 75mm projectiles (high explosive [HE] & shrapnel)



Portions of the north slope of Green Mountain used for artillery training 1930 to 1945



# Discovery of Former Artillery Impact Area

- **Public finds debris** from 75mm projectiles on north slopes of Green Mountain following a 2009 grass fire
- **Preliminary Assessment** completed in 2009, designates 135-acre artillery impact area as a munitions response site (MRS) for further investigation
- National Guard conducted **visual surface survey of trails within Hayden Park** in 2010 to address immediate hazards to trail users. Survey recovers additional munitions debris and confirms historical military use



Artillery impact area discovered on north slope of Green Mountain



# Munitions Items Found by Public



2014 Contractor MD Finding



2010 Nearby Resident MD Finding



2012 Lakewood Employee MEC Finding

**MEC** = Munitions and explosives of concern  
**MD** = Munitions debris



# Summary of Munitions Investigations

Munitions Investigation	Date	Conclusions
Preliminary Assessment (PA)	2009	<ul style="list-style-type: none"> <li>135-acre impact area, Guard training site 1930 to 1945</li> <li>75mm high explosive (HE) and Shrapnel projectiles</li> </ul>
Historic Records Review (HRR)	2011	<ul style="list-style-type: none"> <li>No historical aerial photographs to clarify location of range</li> </ul>
Site Inspection (SI)	2011	<ul style="list-style-type: none"> <li>Visual survey - 3 munitions debris (MD) items detected</li> <li>Recommends further investigation (Remedial Investigation)</li> <li>No munitions constituents (antimony, lead, explosives) contamination detected in soil samples</li> </ul>
Advanced Technology Demonstration	2013	<ul style="list-style-type: none"> <li>Advanced sensor (MPV) successfully demonstrated</li> <li>Nine (9) munitions and explosives of concern (MEC) items recovered in 2-acre study area</li> </ul>
Remedial Investigation (Hayden Park)	2015 - 2017	<ul style="list-style-type: none"> <li>Munitions response site (MRS) revised to 466 acres</li> <li>Unacceptable risks from explosives hazards identified</li> <li>Investigation expanded into edge of neighborhoods</li> </ul>
Remedial Investigation (Priority 1 Neighborhoods)	2016 - 2018	<ul style="list-style-type: none"> <li>Initial survey not effective due to small metal debris</li> <li>Resurvey yards using new advanced sensors (MPV)</li> </ul>



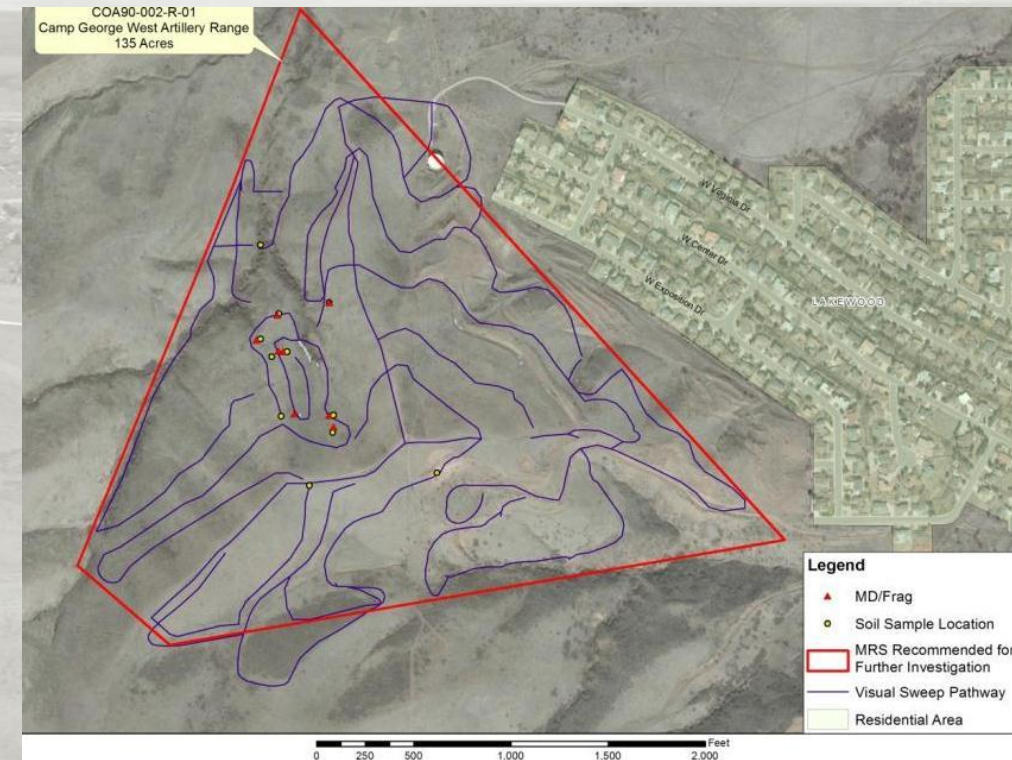
# Site Inspection Results

## Munitions Investigation

- Detector-aided visual survey of transects following terrain (7.5 miles of transects)
- Evidence of munitions training:
  - 75mm high explosive (HE) projectile debris
  - 75mm shrapnel projectile debris
- Confirmed Army National Guard artillery training in the 135-acre artillery impact area

## Munitions Constituents (MC)

- Eleven (11) soil samples analyzed for antimony, lead and explosives
- No soil contamination detected, no additional action recommended for munitions constituents



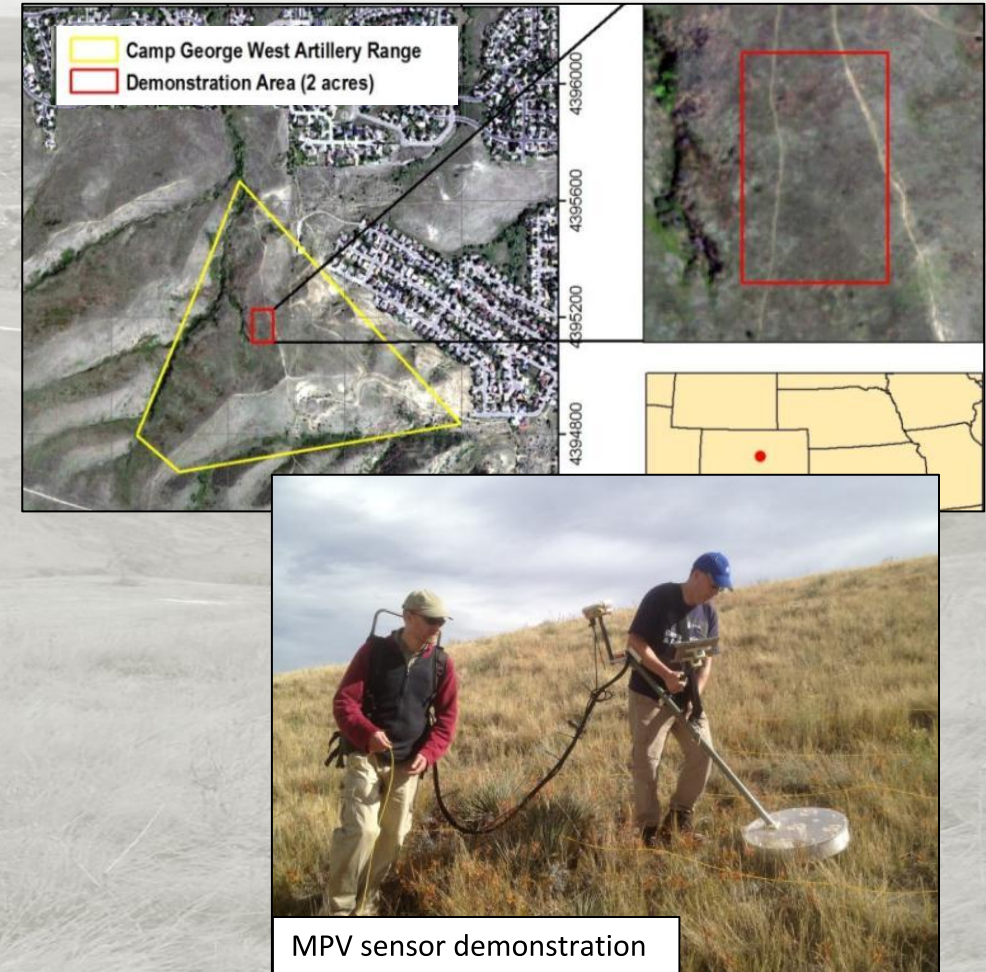
Munitions debris (MD) from M48 75mm HE projectiles



# Advanced Technology Demonstration

## MVP Advanced Electromagnetic Sensor

- Advanced geophysical classification process demonstration on two-acre portion of artillery impact area
- MPV system successfully demonstrated ability to classify buried items as possible munitions or non-munitions-related without digging
- Evidence of munitions training:
  - 9 MEC (75mm projectiles)
  - 375 munitions debris (MD) items
  - Most items at depths of 4 – 8 inches
  - Deepest item was 16 inches



*“Camp George West is an excellent site for classification using advanced EMI sensors.”*

Environmental Science Technology Certification Program (ESTCP) Report, June 2013



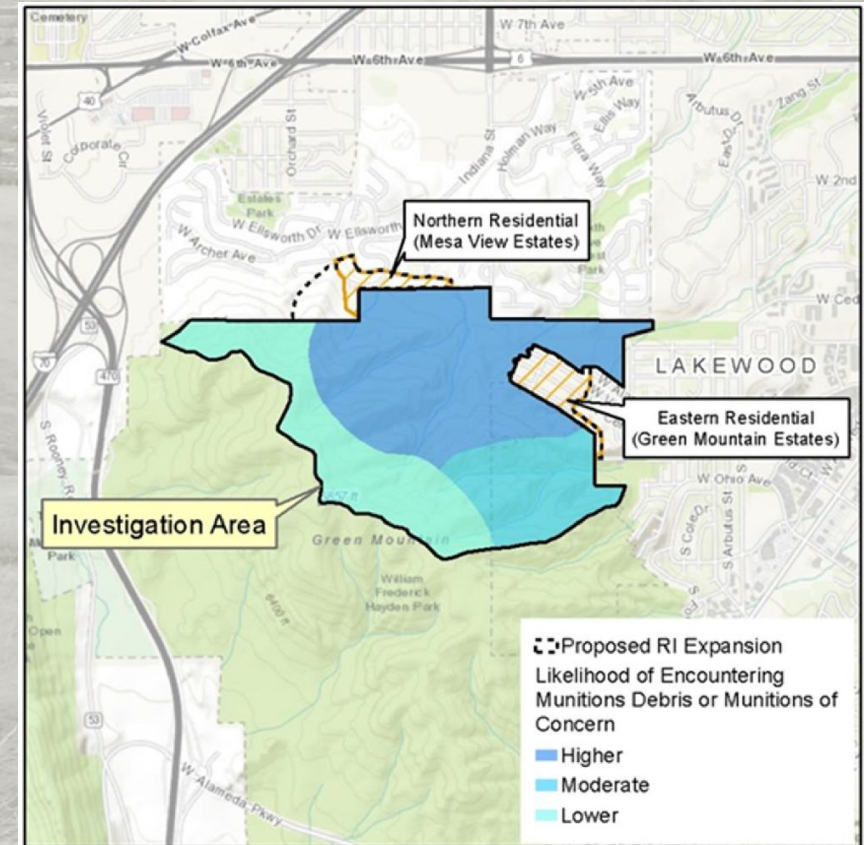
# Remedial Investigation / Feasibility Study

## Hayden Park Investigation Goals:

- Collect information to understand nature and extent of munitions contamination
- Determine what risks remain to public and environment due to explosives hazards

## Feasibility Study Goals:

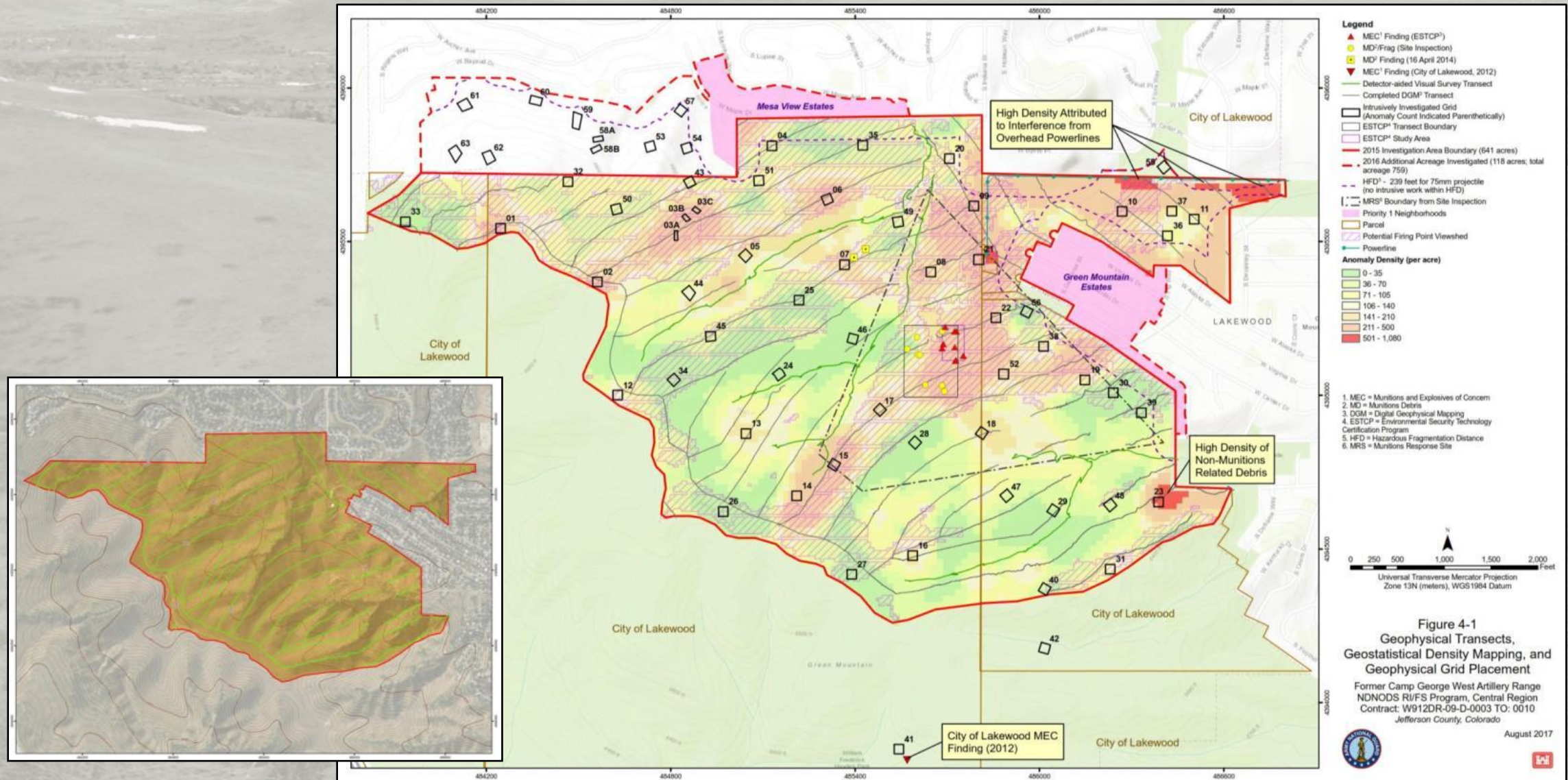
- Identify and evaluate potential remedial action alternatives





# Remedial Investigation Fieldwork

## Transects, Density and Grids

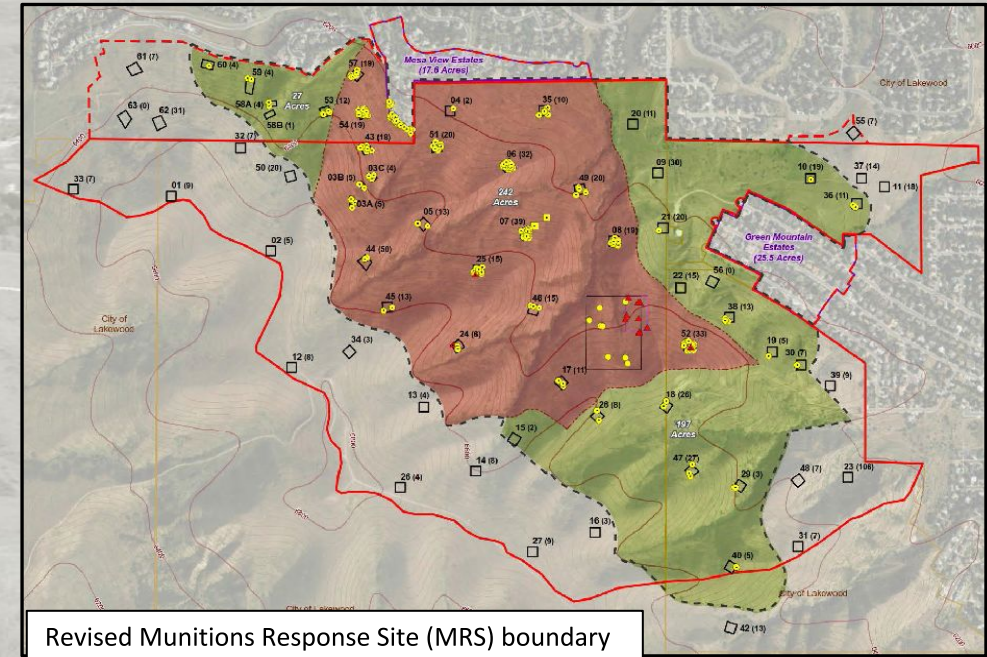




# Results of Hayden Park Investigation

## Munitions Contamination

- Munitions Response Site (MRS) boundary revised from 135 acres to 466 acres
  - 242-acre Concentrated Munitions Use Area
  - 224-acre Non-Concentrated Munitions Use Area
- Thirteen (13) hazardous munitions items recovered, confirming explosives hazards
- Evidence of 75mm projectiles:
  - 75mm M48 high explosive (HE) projectiles
  - 75mm Mk1 shrapnel projectiles
- Investigation expanded into edges of neighborhoods



Revised Munitions Response Site (MRS) boundary

## Munitions Hazards

- Risk Management Methodology identified ***unacceptable risks from explosives hazards*** at site



Examples of munitions items recovered during remedial investigation



# Summary of Munitions Items Recovered

## Former Camp George West Artillery Range MRS

Munitions Type	Location	Quantity	Year Reported	Found By
75mm projectile	North side of Green Mountain	Multiple MD items	2010	Nearby resident
75mm projectile	Northern face of Green Mountain	5 MD items (M48 HE)	2011	Follow-up fieldwork after 2010 find
75mm projectile	Northern face of Green Mountain (likely target backstop)	3 MD items (M48 HE & Mk1 shrapnel)	2011	SI field team
75mm projectile	Green Mountain (off-trail, south of previous investigations)	1 MEC (Mk 1 shrapnel)	2012	City of Lakewood employee
75mm projectile	Green Mountain (2-acre technology demonstration site)	9 MEC (Mk 1 shrapnel) 375 MD (M48 HE & Mk1 shrapnel)	2012	MPV demonstration team
75mm projectile	Northern face of Green Mountain (west of previous investigations)	Several MD items	2014	Contractor personnel public visit to Hayden Park
75mm projectile	Northern face of Green Mountain	3 MEC (Mk1 shrapnel) 232 MD (M48 HE & Mk1 shrapnel)	2015 - 2016	RI field team

**MEC** = Munitions and explosives of concern  
**MD** = Munitions debris

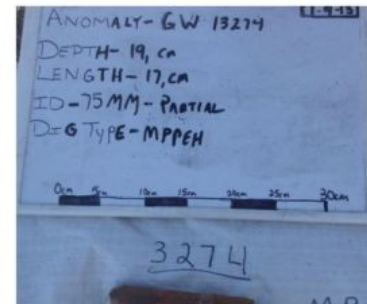


# Hazardous Munitions Items Recovered

## Former Camp George West Artillery Range MRS



MEC found by City of Lakewood employee, 2012



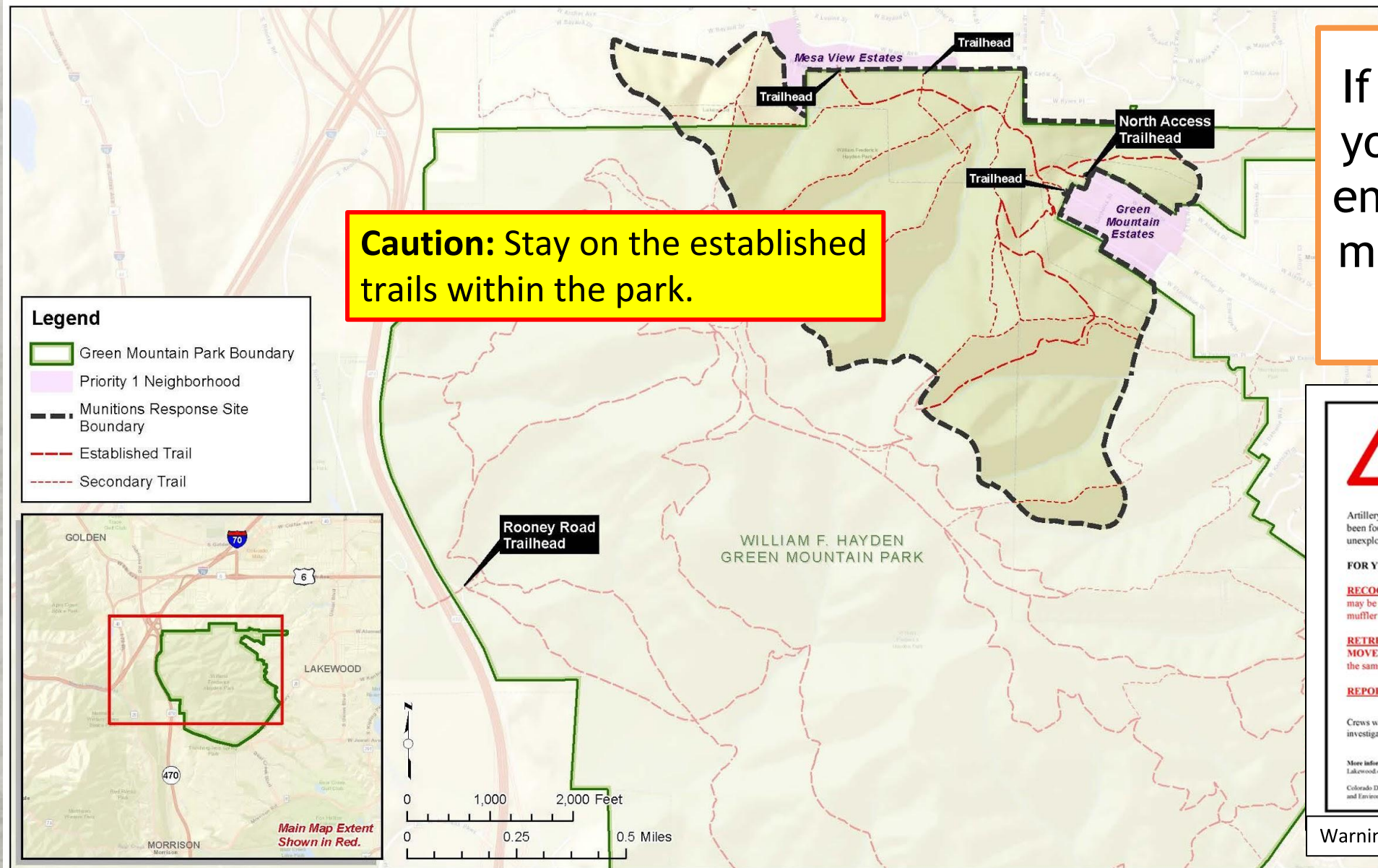
MEC recovered during remedial investigation, 2015

MEC recovered during MVP technology demonstration

MEC = Munitions and explosives of concern  
MD = Munitions debris



# Stay on the Trails at Hayden Park



**Caution:** Stay on the established trails within the park.

If you believe you may have encountered a munition, call **911**.



## CAUTION: HISTORIC MILITARY ARTILLERY USE AREA

Artillery shells from military training prior to World War II have been found in this park. There is a *potential* that pieces of unexploded artillery could still be in the park.

FOR YOUR SAFETY, PRACTICE THE 3 R's:

**RECOGNIZE** that old artillery shells or military munitions may be present and could resemble a piece of pipe, a soda can, a muffler tail pipe or other metal objects.

**RETREAT** from suspicious items. **DO NOT TOUCH, MOVE OR DISTURB.** Immediately leave the area following the same path used to enter the area.

**REPORT** the suspicious item by calling 911.

Crews will be working on the north slopes of Green Mountain to investigate the nature and extent of the artillery debris.

More information:  
Lakewood.org/HaydenPark

Colorado Department of Public Health  
and Environment: 303-692-3303



Warning signs at trail heads in Hayden Park



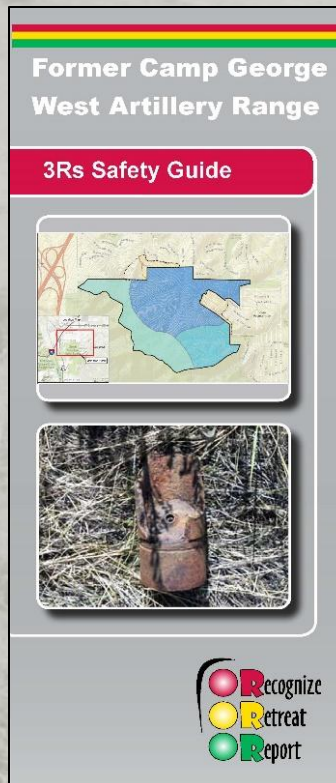
# Practice the 3R's of Explosives Safety



Recognize when you may have encountered a munition, which may come in many sizes, shapes and colors.

Do not touch, move or disturb it. Carefully leave the area. Retrace your steps and mark the path.

Immediately notify the police, providing as much information as possible.



3Rs Safety Guide brochures  
are available today

If you believe  
you may have  
encountered a  
munition, call  
**911.**



75mm shrapnel projectile munitions debris recovered from north slopes of Green Mountain in 2014 as part of the Camp George West Remedial Investigation.

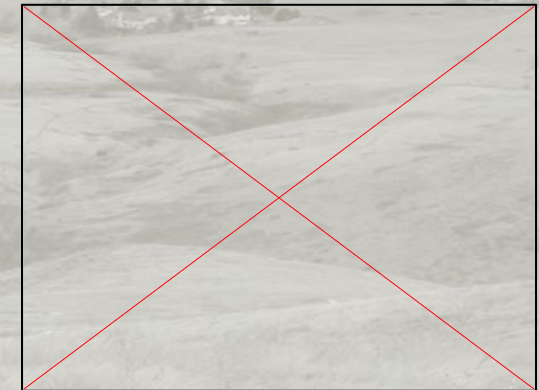


US Army Corps  
of Engineers®



# Open House Poster Stations

- Thank you for joining us tonight!
- Please visit the Poster Stations:
  - Remedial Investigation Results (Hayden Park)
  - Priority 1 Neighborhood Investigation Update





# Additional Resources

## Contacts for more information:

Army National Guard Directorate:

LTC James Crowley

Email: [james.c.crowley.mil@mail.mil](mailto:james.c.crowley.mil@mail.mil) or call (703) 601-7785

Colorado Department of Public Health and Environment:

Mr. Warren Smith

Email: [warren.smith@state.co.us](mailto:warren.smith@state.co.us) or call (303) 692-3373

City of Lakewood:

Ms. Stacie Oulton

Email: [staoul@lakewood.org](mailto:staoul@lakewood.org) or call (303) 987- 7058