W E S T M I N S T E R

Staff Report

TO: The Mayor and Members of the City Council

DATE: October 13, 2010

SUBJECT: Study Session Agenda for October 18, 2010

PREPARED BY: J. Brent McFall, City Manager

Please Note: Study Sessions and Post City Council meetings are open to the public, and individuals are welcome to attend and observe. However, these meetings are not intended to be interactive with the audience, as this time is set aside for City Council to receive information, make inquiries, and provide Staff with policy direction.

Looking ahead to next Monday night's Study Session, the following schedule has been prepared:

A light dinner will be served in the Council Family Room 6:00 P.M.

CITY COUNCIL REPORTS
1. Report from Mayor (5 minutes)
2. Reports from City Councillors (10 minutes)

PRESENTATIONS 6:30 P.M.
1. 2011 State Legislative Dinner Format and Date Selection
2. 2011 Snow Removal Procedures for Park Services
3. Review Final Draft 2010 Natural Hazards Mitigation Plan

EXECUTIVE SESSION
1. Discuss strategy and progress on potential acquisition of certain real property by the Westminster Economic Development Authority for the Westminster Urban Reinvestment Project pursuant to CRS 24-6-402 (4) (a) and (e) (***Verbal***)

INFORMATION ONLY ITEMS – Does not require action by City Council
1. Update on Community Recycling Services Stakeholders' Involvement Process
2. Capital Improvement Program (CIP) Project Status Report – 2010 2nd Period

Additional items may come up between now and Monday night. City Council will be apprised of any changes to the Study Session meeting schedule.

Respectfully submitted,

J. Brent McFall
City Manager

W E S T M I N S T E R

Staff Report

City Council Study Session
October 18, 2010

SUBJECT: 2011 State Legislative Dinner Format and Date Selection

PREPARED BY: Ben Goldstein, Management Analyst

Recommended Action:

Provide Staff with direction on the format of the 2011 State Legislative Event and select a date.

Summary Statement:

Staff is recommending a return to prior years' formats for the City of Westminster's Annual meeting with State Legislators prior to the start of the legislative session. City Council will recall that in 2009, a Saturday breakfast format was used. This format provided the opportunity for a tour and change of pace from past events; however, the weekend timing resulted in weaker attendance by legislators. Staff recommends returning to the weeknight dinner format and anticipates that the event will be more effective.

In addition, Staff is proposing hosting the legislative dinner during the first full week of December. Specific date options are included within the Background Section of this document.

Expenditure Required: $0

Source of Funds: N/A

Policy Issue:

Does Council support continuing meeting with State Legislators in a group format as proposed?

Alternative:

Pursue a weekend breakfast format with different dates, or not hold the event. Staff does not recommend a weekend breakfast as Staff believes that weekend events are more difficult to obtain attendance by State Legislators due to the significant amount of time spent during the session away from their families and at various events. Staff recommends continuing the event, although returning to the weeknight dinner format. Staff believes this is a worthwhile opportunity for City Council to interact with State Legislators representing Westminster at the Capitol.

Background Information:

For several years, the annual State Legislative event was held as a dinner with mixed success in garnering attendance from the Legislators. In 2009, the City pursued an alternative event format, in an effort to increase attendance and provide a greater experience for attendees. As Staff believes the 2009 format was effective at providing for a unique experience highlighting the benefits of urban renewal, it was less effective at increasing attendance. For this reason, Staff recommends returning to the weeknight dinner format, with some slight modifications.

The proposed new dinner format will provide the legislators with a greater opportunity to interact on a more personal level with Council and Staff, as the City attendees will be limited to City Council, City Manager, Assistant City Manager, legislative team leads, and subject matter experts on key legislative topics. Staff recommends that only subject matter experts attend rather than the entire Department Head team, as in prior years. This change will have the additional benefit of holding down the costs for the event. This event format will provide the City with more focused opportunities to engage the Legislators in thoughtful dialog regarding key policy issues.

As part of this dinner format, Staff is seeking guidance on whether the evening should include any formal presentations by Staff on key issues or whether City Council prefers to allow a more informal dialogue between City Council and the State Legislators on issues or bills they may be pursuing during the session.

In addition, Staff is requesting that City Council select a date for the event. Staff recommends limiting the possible dates to the first two weeks in December, given the election in early November, late Thanksgiving holiday, the National League of Cities conference in Denver the last week of November/first days of December, and limitations that come with the holidays in late December.

Staff has identified the following as possible dates for the dinner:

- Wednesday, December 1
- Thursday, December 2
- Tuesday, December 7
- Wednesday, December 8
- Thursday, December 9

Staff recommends hosting the dinner sometime during the first full week of December (i.e. December 7, 8 or 9) in efforts to avoid the potential scheduling conflicts with the National League of Cities in Denver the week prior.

Staff will be providing for Council's review and consideration the Legislative Policy Statement and Legislative Issues Guide in early November.

A copy of City Council's calendar for November 23 through December 10 is provided as a reference of upcoming events. Staff requests that City Council bring their personal calendars with them to Monday night's meeting in order to select a date for the legislative dinner.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment

WESTMINSTER

Staff Report

City Council Study Session Meeting
October 18, 2010

SUBJECT: 2011 Snow Removal Procedures for Parks Services

PREPARED BY: Richard Dahl, Park Services Manager
Jerry Magnetti, Parks Supervisor

Recommended City Council Action:

Review the proposed changes to snow removal procedures from the Parks, Recreation and Libraries Department, Park Services Division modifying areas of responsibilities and provide comments at the Study Session scheduled for Monday, October 18, 2010.

Summary Statement:

- Staff from Parks, Recreation and Libraries and the City Manager's Office have collaborated to update snow removal procedures for Park Services operations that meet current staffing and funding levels.
- Existing procedures are proposed to be changed to make more efficient use of staff time and resources. This plan represents a 15% reduction in snow removal responsibilities.
- Changes to existing snow removal procedures (see attached map) include:

    - Snow will no longer be cleared from interior sidewalks in parks that do not provide essential links to schools or regional trials. These are non-connecting sidewalks that provide access only to the interior of the park.
    - Parks, Recreation and Libraries Staff will no longer clear snow from property that, by City Municipal Code, is the responsibility of the adjacent private property owner. Such areas include 72nd Avenue from Newton Street to Federal Boulevard; 73rd Avenue from Lowell Boulevard to Bradburn Boulevard; various sidewalks on Sheridan Boulevard and Wadsworth Parkway that are not City owned; and private property frontages along Huron Street between 128th and 144th Avenues.
    - Staff will no longer clear random concrete trail segments that are connected on either end by soft trail (soft trails cannot be plowed without significant damage to the surface).

- Staff will continue to do snow removal on trails and sidewalks that provide pedestrian access to schools and are considered high use corridors.
- Staff will continue to clear snow from City Hall, Public Safety building, recreation centers, fire stations, and occupied public buildings on a priority basis.

Expenditure Required: $0

Source of Funds: N/A

Policy Issue:

Does City Council support the Park Services Division's plan to change snow removal procedures to meet current staffing and funding levels?

Alternative:

City Council could decide to have Parks, Recreation and Libraries Staff continue with the current policy and remove snow from all City-owned sidewalks, parks, and public facilities. This alternative is not recommended by Staff because at current staffing levels, the Park Services Division could be put in violation of City Code snow removal requirements on a regular basis.

Background Information:

Parks Services is responsible for clearing snow from parking lots, trails and sidewalks at City parks and facilities. Parks Services does not clear any streets, but is required to have snow cleared at City facilities during all operating hours.

Snow removal is accomplished using six pickup trucks with snowplows and five snow hand-crews consisting of four to six individuals with shovels and motorized snow pushers. For each snow event, the pick-up trucks are responsible to clear 43 miles of sidewalks and trails and 45 acres of facility parking lots. Hand-crews clear 52 miles of sidewalks and plazas at City Hall, the Public Safety Center building and all recreation centers.

By eliminating snow removal from non-essential park trails and areas that are the responsibility of the adjacent property owner, Staff estimates eliminating 12.5 miles of snow removal duties resulting in saving approximately 150 man hours per event, including overtime.

As part of the 2011/2012 budget development, Parks Service staffing was reduced by 4.2 FTE's through work force reduction thereby eliminating an entire snow group, leaving only 4 snow hand-crews to cover all Park Service responsibilities. Recreation centers open as early as 5:30 a.m. while Promenade businesses are open until 1 a.m. creating scheduling issues and coverage problems during extended storms. Manpower reductions will amplify these already difficult circumstances. When snow is predicted, Park Services crews are on call 24 hours a day until the event occurs or there is no longer a viable prediction.

Staff is confident that the plan put forth balances the needs of Westminster citizens with the ability of Parks Services Staff to provide a quality service for the community. This plan sets realistic and achievable goals while using available resources in an efficient manner. These recommendations will be implemented this winter unless City Council has concerns with them.

Park Services Staff will be in attendance at the October 18, 2010, Study Session to present highlights of the plan and answer any questions City Council may have about the recommendations. This plan meets the City's Strategic Plan Goals of "Financially Sustainable City Government Providing Exceptional Services."

Respectfully submitted,

J. Brent McFall
City Manager

Attachment - Map

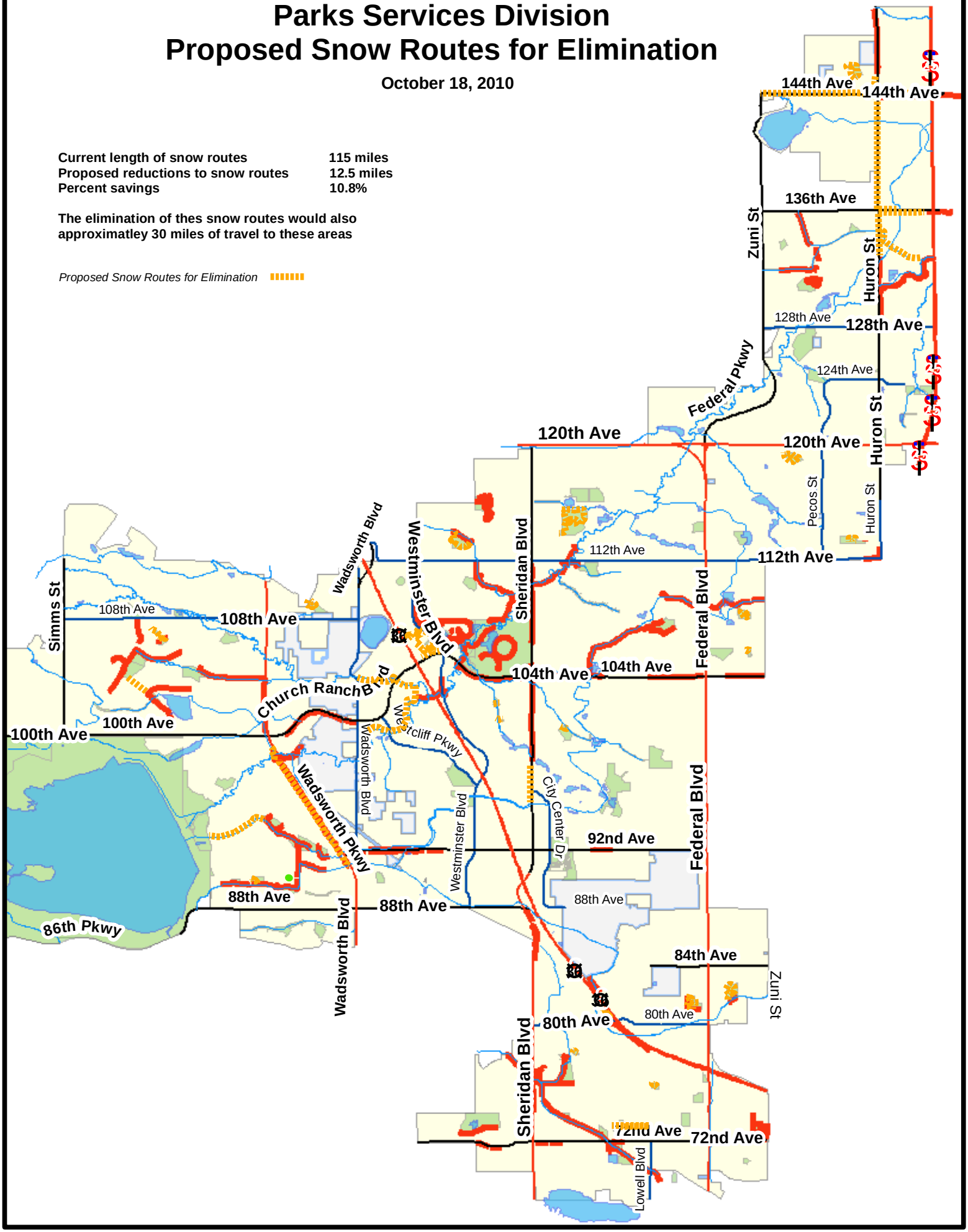
Parks Services Division
Proposed Snow Routes for Elimination

October 18, 2010

Current length of snow routes	**115 miles**
Proposed reductions to snow routes	**12.5 miles**
Percent savings	**10.8%**

The elimination of thes snow routes would also approximatley 30 miles of travel to these areas

Proposed Snow Routes for Elimination



WESTMINSTER

Staff Report

City Council Study Session Meeting
October 18, 2010

SUBJECT: 2010 City of Westminster Natural Hazards Mitigation Plan

PREPARED BY: Mike Reddy, Emergency Management Coordinator
John Burke, Senior Engineer

Recommended City Council Action

City Staff will present the proposed 2010 City of Westminster Natural Hazards Mitigation Plan to City Council. City Councillors are being asked to review the plan and provide Staff with comments and any proposed changes that may be desired.

Summary Statement

- The primary purpose for a City of Westminster Natural Hazards Mitigation Plan is to better protect the people and property of the City of Westminster from the effects of natural hazard events.
- A secondary purpose for adopting the Plan is to make the City of Westminster eligible for federal pre-disaster assistance from the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program. In addition, in the event of a federally declared disaster, an approved and adopted plan allows the City to pursue federal mitigation grant assistance in the rebuilding process.
- The Plan has been developed with input from a number of City departments along with county and state agencies. State and federal official reviews have found the Plan to be in full compliance with their combined review criteria.
- Formal adoption by Council is the final step in the Natural Hazards Mitigation Plan process.

Expenditure Required: $0

Source of Funds: Emergency Management Performance Grant (EMPG)

Policy Issue

Should the City of Westminster formally adopt the 2010 Natural Hazards Mitigation Plan as a guide for City natural hazard mitigation decisions in order to reduce harm to people and property from future natural disaster occurrences?

Alternatives

1. Council could choose not to adopt the Plan; however, this would make the City of Westminster ineligible for receiving pre and post disaster federal mitigation grant assistance in the future.
2. Council could direct staff to modify the plan; however, this will require a second review and adoption by state and federal officials prior to final City of Westminster adoption.

Neither of these alternatives is recommended by Staff.

Background Information

Many natural disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated though mitigation efforts. The City of Westminster has a long history in mitigating the risks posed by natural hazards. These efforts include land use planning efforts, adoption of progressive building and fire codes, comprehensive open space planning, dam mitigation and stabilization programs and a comprehensive storm water management program. The City of Westminster Natural Hazard Mitigation Plan (1) identifies natural hazards and associated risks to the City of Westminster; (2) identifies the many hazard mitigation initiatives that the City has taken in the past; (3) documents the process used in developing this Plan; and (4) develops future mitigation strategies to lessen vulnerability and improve resiliency to natural hazards.

The Plan is required by the Federal Emergency Management Agency in order for the City to qualify for pre and post disaster mitigation grants that can help solve problems before a disaster and help the City recover should a disaster occur.

Adoption of the 2010 Natural Hazards Mitigation Plan supports the City of Westminster strategic plan under the goal of a safe and secure community. One of the means to achieve this goal is to adopt a guide for hazard mitigation planning to better protect the people and property of the City of Westminster from the effects of natural hazard events.

Respectfully submitted,

J. Brent McFall
City Manager

Attachments

2010
City of Westminster
Natural Hazards Mitigation Plan

WESTMINSTER

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Purpose

The primary purpose of this natural hazards mitigation plan is to guide hazard mitigation planning to better protect the people and property of the City of Westminster from the effects of hazard events. It demonstrates the City's commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. A secondary purpose is to make the City of Westminster eligible for federal disaster assistance, specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program and Pre-Disaster Mitigation program.

1.2 Background and Scope

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated through mitigation efforts. Hazard mitigation is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. On average, each dollar spent on mitigation saves society an average of $4 in avoided future losses in addition to saving lives and preventing injuries (National Institute of Building Science Multi-Hazard Mitigation (Council 2005). Hazard mitigation planning is the process through which natural hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented.

The City of Westminster Natural Hazards Mitigation Plan is a single-jurisdiction plan that covers the incorporated community of the City of Westminster. It documents the City's natural hazards mitigation planning process, identifies natural hazards and associated risks to the City, and develops a hazards mitigation strategy to lessen vulnerability and improve resiliency to natural hazards.

The City of Westminster used FEMA's guidelines and Plan Review Crosswalk to guide the steps for completing this plan. Many forms, tables and organizing standards were taken from other jurisdictional plans including Boulder County's plan which was developed by AMEC Earth and Environmental.

2 COMMUNITY PROFILE

The City of Westminster is a growing suburban community that provides a wide choice of housing, schools, and public facilities. Westminster incorporates more than 2,600 acres of open space and nearly one-third of the city has been preserved as "green space" which includes parks, open space, golf courses and greenbelts.

Westminster has some historic preservation properties, such as the Bowles House and the Pillar of Fire building, a neo-Romanesque-style building built in 1892. Both buildings, along with others in the area, are listed on the National Register of Historical Places.

Westminster is located between Denver and Boulder, within the greater Denver Metropolitan area. Members of Westminster's numerous boards and commissions act as advisors to City Council on a variety of subjects, including building and municipal codes, elections, environmental issues, human services funding, open space, parks and recreation, planning, transportation, and other important City topics.

2.1 Geography and Climate:

The City of Westminster is 5,384 ft. above sea level and lies in the northwest quadrant of the Denver metropolitan area, between Boulder and Denver. It is bisected by the Denver/Boulder Turnpike (U.S. 36) and it is adjacent to I-25. Westminster is 33.7 square miles in area and is spread over mostly rolling terrain.

The climate is generally semiarid with some weather extremes occurring throughout the winter and summer seasons. Most precipitation occurs during the winter and spring months with an average annual precipitation of 14.1 inches. In winter, the moisture is tempered by periods of unseasonably warm weather. In the summer, hot temperatures are moderated by relatively low humidity.

2.2 History:

Prior to the 1850's, the area that was to become Westminster was inhabited by small herds of buffalo and antelope and was dotted with small marshy ponds. There is strong evidence that the Arapaho Indians maintained a semi-permanent encampment in the vicinity of Gregory Hill.

In 1858 Jim Baker discovered gold on Little Dry Creek which encouraged pioneers to settle in the immediate area. Jim Baker, for whom Baker Elementary School, Jim Baker Reservoir, and the Baker Area are named, has been called the 'Forgotten Mountain Man'. He served the Government as a scout, guide and interpreter. He knew several Indian dialects and was Chief of the Shoshoni for a time. There is a stained glass window in the State Capitol to honor him as being the first white man to come this far West and make way for the Pioneers.

The first permanent settler to build his home in Westminster was Pleasant DeSpain. In 1870, he built his home on 160 acres of farmland near what is now the intersection of 76th Avenue and Lowell Boulevard. He and his five sons cultivated and harvested grain and the fruit from their apple and cherry orchards.

The village of DeSpain Junction grew into a small farming community and continued to attract new settlers. The merchants that came to the small village reflected the needs of the farmers and ranchers of the area: blacksmith shop, lumber store, and general store. The railroad came to DeSpain Junction in 1881 and a man named Edward Bowles was instrumental in the construction of the train depot.

Many of the homesteaders found farming in Colorado's arid climate to be much more difficult than they had experienced in the Midwest and the East. For this reason, they sold their land to C.J. Harris, a real estate developer from Connecticut who arrived in DeSpain Junction in 1885. He subdivided the farms he bought into smaller tracts of land which he then sold to fruit farmers. The Harris house can be seen at 7996 Bradburn Blvd. At his request, and with Pleasant DeSpain's permission, the town was renamed Harris, but was also known as Harris Park. Today the City of Westminster is recognized as a full-service City. Because of its location and the large variety of amenities it offers, Westminster has grown very quickly. The City has entered into a new era of sustainability and infill development to support new growth.

2.3 Economy:

There are over 4,000 businesses located in Westminster. The business community includes small, family-owned companies, service companies, high-tech manufacturers, as well as national and international headquarters. The following provides a snap shot of the City's economy and business community.

2.4 Demographics:

The Census estimates that the 2008 population for Westminster is 106, 303. It also predicts that the 2010 population will be 109, 838. The City's 2010/11 City Profile estimates the 2010 population to be 109, 353 with a median age of 34.4. As the 2010 Census information becomes available, population numbers will be updated in this plan.

The 2010/2011 City Profile estimates for the demographics in the City are as follows:

Ethnicity	
White	80.8%
Hispanic or Latino	19.0%
Asian	6.1%
African American	1.8%
Other	11.3%

Age Distribution
(*Census Estimate)*

Under 19	28.9%
20 to 24	6.9%
25 to 34	15.1%
35 to 44	15.0%
45 to 54	15.7%
55 to 64	10.4%
65 over	7.9%

Male: 50.3%
Female: 49.7%

Other:
Average household size: 2.61 members
Language other than English spoken at home: 15,098
Speak English less than "very well": 1,303
Median household income, in 2008 adjusted dollars: $61,613
Per capita income, $29,679
Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year Estimates & City of Westminster 2010/11 City Profile

3 PLANNING PROCESS

3.1 Planning Requirements

Requirements 201.6 (b) and 201.6(c)
In order to develop a more comprehensive approach to reducing the effects of natural disaster, the planning process shall include:
1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non profit interests to be involved in the planning process; and
3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. The plan shall document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

The City of Westminster established a Hazard Mitigation Planning Committee (HMPC) made up of representatives from the Westminster Fire and Police Departments, Emergency Management, Public Works and Utilities, Community Development, City Manager's Office, Parks and Recreation as well as other important stakeholders listed below to oversee the development of the Natural Hazards Mitigation Plan.
The City's HMPC's role was to:
• Serve as a hazard mitigation planning committee as defined by regulations in the Disaster Mitigation Act of 2000 (DMA),
• Meet the DMA requirements as established by federal regulations and following the Federal Emergency Management Agency's (FEMA) planning guidance,
• Facilitate the entire planning process,
• Identify the data requirements that HMPC participants could provide and conduct theresearch and documentation necessary to research that data,
• Assist in facilitating the public input process, by developing an action plan for public input.
• Produce the draft and final plan documents, and
• Coordinate the Colorado Division of Emergency Management and FEMA Region VIII plan reviews.

At the initial meeting of the HMPC working group, the previous DRCOG plan was discussed. It was determined that the City should develop an entirely new plan specific to Westminster. Due to the fact that Jefferson County was not going to participate in a regional hazard Mitigation plan, the City of Westminster decided to participate in a separate plan. Since the City resides within both Adams and Jefferson Counties, it was determined that it would be more beneficial for an entirely new plan be developed. The previous regional plan was also recognized to be too generic to have any significant benefits for the City as a planning tool. Before the final revised

mitigation plan was completed, each previously identified project in the regional plan was reviewed and their status was determined.

3.2 Local Government Participation

The DMA planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:
• Participate in the process,
• Detail areas within the planning area where the risk differs from that facing the entire area,
• Identify specific projects to be eligible for funding, and
• Have the governing board formally adopt the plan.
For the City of Westminster's HMPC committee members, "participation" meant:
• Attending and participating in the HMPC meetings,
• Providing available data requested of the HMPC,
• Reviewing and providing comments on the plan drafts,
• Advertising, coordinating, and participating in the public input process, and
• Coordinating the formal adoption of the plan by the City of Westminster's Council.

3.3 The Planning Process

The HMPC established the planning process for the City of Westminster's plan using the DMA planning requirements and FEMA's associated guidance. This modified process was originally developed by *AMEC Earth and Environmental*. *AMEC* formulated the four step planning process as outlined by FEMA, into a 10 step process. This guidance is structured around the four-phase process and also uses *AMEC*'s process as well:

Source: AMEC Earth and Environmental-Boulder Plan

FEMA's 4-Phase Process	***Modified 10-Step Process***
1) Organize Resources	
201.6(c)(1)	*1) Organize the Planning Effort*
201.6(b)(1)	*2) Involve the Public*
201.6(b)(2) and (3)	*3) Coordinate with Other Departments and Agencies*
2) Assess Risks	
201.6(c)(2)(i)	*4) Identify the Hazards*
201.6(c)(2)(ii)	*5) Assess the Risks*
3) Develop the Mitigation Plan	
201.6(c)(3)(i)	*6) Set Goals*
201.6(c)(3)(ii)	*7) Review Possible Activities*
201.6(c)(3)(iii)	*8) Draft an Action Plan*
4) Implement the Plan and Monitor Progress	
201.6(c)(5)	*9) Adopt the Plan*
201.6(c)(4)	*10) Implement, Evaluate, and Revise the Plan*

Organize Resources-Planning Step 1: Organize the Planning Effort

With the City of Westminster's commitment to participate in the DMA planning process, The HMPC established the framework and organization for development of the plan. The HMPC, which was comprised of key City stakeholders as well as other local governments and representatives, developed the plan with leadership from the City of Westminster's Emergency Management Coordinator. The list of participating HMPC *organizations* is provided below:

City of Westminster:

• Environmental Services
• Risk Management
• Police Department
• Fire Department
  - ✓ Emergency Management

•City Manager's Office
• Community Development
  - ✓ Geographic Information Systems
  - ✓ Historic Preservation
  - ✓ Planning

• Parks and Open Space
• General Services
• Public Works and Utilities

Other Government and Stakeholder Representatives:

• American Red Cross
• Adams and Jefferson County Emergency Management
• Colorado Division of Emergency Management
• Urban Drainage and Flood Control District
• National Weather Service

*****A specific list of the participating individuals is listed under **Planning Step 3: Coordinate with Other Departments and Agencies**

The planning process officially began on May 11th 2009, with a kick-off meeting in Westminster. The meeting covered the scope of work and an introduction to the planning requirements. Participants were provided with a Data Collection Guide, which included worksheets to facilitate the collection of information necessary to support development of the plan. These worksheets were originally developed by *AMEC Earth and Environmental.* Participants were encouraged to voice ideas for the project and to suggest other stakeholders that would be beneficial to the planning process.

During the planning process, the HMPC communicated through face-to-face meetings, e-mail, and a data file collection site (DFC). The Management Intern created participant specific worksheets that served as a data collection resource. Information that was needed was outlined on each worksheet and a response including the requested information was delivered via e-mail. The Emergency Manager, Management Intern and HMPC also met numerous times during the planning period beginning May 11th 2009. The purpose of each meeting is described below:

Meeting Topics and Dates

- Scope of project meetings, 5/08/09; 5/11/09; 5/19/09; 5/27/09
- Kick-off meeting with HMPC; planning process; hazard identification updates; 5/28/09
- Hazard research meetings; plan formulation meetings, work sessions, 6/09/09; 6/16/09; 6/23/09

- Meeting with the State Mitigation Officer, Plan Guidance Meeting, 7/07/09
- Risk assessment overview and work session, 7/16/09
- Development of mitigation goals and objectives 8/11/09; 8/31/09; 9/28/09
- State and HMPC working group meeting 1/7/10
- Developing and prioritizing mitigation recommendations 1/7/10
- Review of draft plan/response to public comments month of April and May
- Meeting with CDEM representative 5/17/10
- Final Edit procedures: 5/19/10;5/24/10;5/25/10
- Meetings with GIS, Public Works and Utlilities and Drought 6/8/10
- Summer Celebration Plan Debut 6/10/10
- GIS Impervious Mapping Meeting 6/14/10
- Meeting with State-Deanna Butterbaugh 7/2/10
- City Council Study Session 10/18/10
- Formal Public Hearing with City Council 11/8/10
- Formal Adoption of Plan (*date pending FEMA conditional approval)*
- **The Management Intern and the City's Emergency Management Coordinator met approximately once a week for 2-3 hours from May 11th, 2009- June 31st 2010)*

Planning Step 2: Involve the Public

Public involvement activities included City wide press releases, website postings and the collection of public comments to the draft plan. The announcement of the plan was also published in the Westminster Chamber of Commerce E-newsletter and was announced on the Westminster Fire Department's social media outlets such as Twitter and Facebook. Copies of the plan were made available at the public libraries, City Hall and the City's Public Safety Center. The City's Emergency Management Coordinator received comments and questions concerning the plan.

After the drafting stage, the plan was made available a second time for public review. The City Summer Celebration provided an ideal setting for displaying information about the City's Emergency Management Program and also for displaying the plan prior to plan approval. The Press Release for the Summer Celebration was as follows:

Natural Hazard Mitigation Plan Debuts

The City of Westminster has developed a Natural Hazards Mitigation Plan. This plan will serve as one of the City's documents for future mitigation actions in an effort to "manage disaster mitigation, preparedness, response and recovery." The Document was open for public comment in April and May; those comments have been considered and now the final version of the plan is complete. Emergency Management Coordinator Mike Reddy will have the final version of the City of Westminster Natural Hazards Mitigation Plan available for review at the Summer Celebration Event on Thursday June 10th, 5-7 p.m. at Irving St. Park. The public is encouraged to stop by the Westminster Fire Department tent at the Summer Celebration event to take a look at the new plan before it is presented to the State of Colorado, the Federal Emergency Management Association and the Westminster City Council for adoption. Questions may be directed to Emergency Management Coordinator Mike Reddy at 303-658-4550 or mreddy@cityofwestminster.us

City of Westminster Summer Celebration Hazard Mitigation Plan Display

A public hearing was held by City Council prior to finalizing the plan (*date to be determined after public input period and FEMA conditional approval*). Where appropriate, stakeholders and public comments were incorporated into the final plan, including the sections that address mitigation goals and strategies.
The public input received by the Emergency Management Coordinator included:

- A request for more seasonal highlights concerning severe storms by neighborhood
- A request that the maps used in the planning document be larger
- A request for an increase in public information newsletters concerning natural hazards.

All press releases and website postings are on file with the City of Westminster Fire Department, Emergency Management. The plan is available online at the City's Website:
http://www.ci.westminster.co.us/639.htm
* *The website will be updated with the final version of the plan after FEMA conditional approval and City Council adoption.*

Planning Step 3: Coordinate with Other Departments and Agencies

Early in the planning process, the HMPC determined that data collection, mitigation strategy development, and plan approval would be greatly enhanced by inviting state and regional agencies and organizations to participate in the process. Based on their involvement in hazard mitigation planning, and/or their interest as a neighboring jurisdiction, individual representatives from the following agencies were invited to participate on the HMPC:
Mike Reddy*: Emergency Management Coordinator*
Lilia Colter: *Management Intern*
John Burke: *Community Development*

Stuart Feinglas: *Water Resource Annalist*
Carmen Linnebur:*Lead Software Engineer*
Steve Baumann: *Assistant City Engineer*
Heather Cronenberg: *Community Development*
Bob Booze: *Distribution and Collections Superintendent*
Rick Clarke: *Utilities Operations Manager*
Mac Cummins: *Community Development*
Jeri Elliott: *Police Department*
Doug Hall: *Fire Department*
Mike Happe: *Public Works and Utilities*
Dave Horras: *Community Development*
Bob Krugmire: *Public Works and Utilities*
Rod Larsen: *Parks and Recreation*
Dave Loseman: *Community Development*
Dave Murray: *GIS*
Carey Rangel: *General services*
Dan Strietelmeier: *Public Works and Utilities*
Heather McDermott: *Adams County Emergency Management*
Tim McSherry: *Jefferson County Emergency Management*
Kent Davis: *Broomfield Emergency Management*
Deanna Butterbaugh and Marilyn Gally: *Colorado Division of Emergency Management*
Kevin Stuart: *Urban Drainage and Flood Control District*
**All of the stakeholders listed above did participate in the planning and drafting processes for the Natural Hazards Mitigation Plan.*

Coordination with other community planning efforts is also paramount to the success of this plan. Hazard mitigation planning involves identifying existing policies, tools, and actions that will reduce a community's risk and vulnerability from natural hazards. The City of Westminster uses a variety of comprehensive planning mechanisms, such as The City of Westminster Comprehensive Plan, The Emergency Plan and Management System and other City policies to guide growth and development. Integrating existing planning efforts, mitigation policies and action strategies is an ongoing policy requirement outlined in the City's Comprehensive Plan. The development of the Natural Hazards Mitigation Plan references numerous existing plans, studies, reports, and initiatives as well as other relevant data from neighboring communities and other jurisdictions.

These plans include:

- City of Westminster Emergency Plan and Management System
- Flood Studies
- City of Westminster Comprehensive Plan
- 2007 Storm Drainage Study (City of Westminster)
- City of Westminster Drought Plan
- Police Service Program
- Open Space Master Plan (City of Westminster)
- State of Colorado Natural Hazard Mitigation Plan
- State of Colorado Emergency Operations Plan

Other documents were reviewed by individual members of the HMPC and information that was appropriate and beneficial for the Natural Hazards Mitigation Plan was provided to the Management Intern via assigned worksheets.

3.4 Assess Risks

Planning Steps 4 and 5: Identify the Hazards and Assess the Risks

The HMPC researched and identified all the natural hazards that have, or potentially could impact the City. Most historical event research was conducted and compiled by the Management Intern and was then analyzed by the HMPC to determine hazard specific vulnerability and risk for the City. The City's Geographic Information Systems (GIS) Department provided City specific maps that were used to analyze hazards and their corresponding vulnerabilities. The HMPC reviewed the City's current capabilities to mitigate risk and vulnerability from natural hazards. Information about existing government programs, policies, regulations, ordinances, emergency plans and current projects provide a scope of activities and measures already in place that contribute to mitigating some of the risks and vulnerabilities that the City of Westminster faces.

The first draft of the plan contained the hazard identification summary and included a basic template for the plan. The second draft included the hazard identification, the City's vulnerability and capability assessment, information about the public input process and the City's decided goals and actions. A more detailed description of the risk assessment process and the results are included in **Section 4: Risk Assessment**. The plan was reviewed several times by the City of Westminster's Emergency Management Coordinator and Management Intern. The plan was also reviewed by individual HMPC members and by State Emergency Management Representatives from CDEM.

3.5 Develop the Mitigation Plan

Planning Steps 6 and 7: Set Goals and Review Possible Activities

In a meeting held on January 7th 2010, the HMPC discussed the City's existing hazard mitigation projects and established future goals for the City. The process involved a review of all past mitigation activities that have taken place in the City. Subsequently, each City department identified their individual department goals. From that, a consensus was reached on five major goals and their subsequent objectives.

Planning Step 8: Draft an Action Plan

Based on input from the HMPC regarding the risk assessment and decided goals and activities, the Management Intern produced a complete first draft of the plan. This complete draft was posted for HMPC review and comment and was discussed in a group meeting. Other agencies were invited to comment on this draft as well, including representatives from the Colorado Division of Emergency Management, Urban Drainage & Flood Control staff, and Adams, Jefferson and Broomfield County emergency management staff. The HMPC and other agency comments were integrated into the second draft, which was advertised and distributed to collect public input and comments. While Public input was being solicited, a draft copy was reviewed by State mitigation staff. Both public input and State recommendations were integrated into the final draft prior to submittal to FEMA for review. Upon FEMA conditional approval, the formal City hearing was held and the Plan was adopted as a formal City document *(pending)*.

3.6 Implement the Plan and Monitor Progress

Planning Step 9 and 10: Adopt the Plan and Implement, Evaluate and Revise the Plan

In order to secure buy-in and officially implement the plan, the plan was adopted by the City of Westminster City Council *(date to be established after FEMA conditional approval).* A copy of the adoption resolution is included (*pending*).

Plan Adoption. Once the adoption is complete, formal approval by FEMA can proceed.

Implement, Evaluate, and Revise the Plan

The true worth of any mitigation plan is in the effectiveness of its implementation. Up to this point in the planning process, all of the HMPC's efforts have been directed at researching data, coordinating input from participating departments, and developing appropriate mitigation actions. An overall implementation strategy is described in

Plan Implementation and Maintenance.

Finally, there are numerous organizations within the City whose goals and interests interface with hazard mitigation. Coordination with other planning efforts and goals is paramount to the ongoing success of this plan and hazard mitigation in the City of Westminster. A plan update and maintenance schedule and a strategy for continued public involvement are also included.

4 RISK ASSESMENT

201.6(c)(2) The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

As defined by the Federal Emergency Management Agency (FEMA), risk is a combination of hazard, vulnerability, and exposure. Risk "is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." The risk assessment process identifies and profiles relevant hazards and assesses the exposure of property and infrastructure to these hazards. The process allows for a better understanding of a jurisdiction's potential risk to natural hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events. This risk assessment followed the methodology described in the FEMA publication; *Understanding Your Risks-Indentifying Hazards and Estimating Losses.*

4.1 Understanding Your Risks—Identifying Hazards and Estimating Losses

This section breaks the assessment down to a four-step process:
1) Identify Hazards
2) Profile Hazard Events
3) Inventory Assets
4) Estimate Losses

Data collected through this process has been incorporated into the following sections of this chapter:

• **Identifying Hazards** identifies the natural hazards that threaten the planning area.
• **Profiling Hazards** discusses the threat to the City and describes previous occurrences of hazard events and the likelihood of future occurrences.
• **Assessing Vulnerability** assesses the City's total exposure to natural hazards, considering assets at risk, critical facilities, and considers future development trends.

While not required by FEMA, the HMPC conducted a mitigation capability assessment, which inventoried existing mitigation activities and existing policies, regulations, and plans that pertain to mitigation and can affect net vulnerability. The findings from this undertaking are in **Mitigation Capabilities Assessment**.

4.2 Identifying Hazards.

201.6(c)(2)(i) [The risk assessment shall include a] description of the type and location of all natural hazards that can affect the jurisdiction.

Methodology
The HMPC agreed upon a list of natural hazards that could potentially affect the City of Westminster. The HMPC reviewed the existing hazard identification study in the City's Emergency Plan and Management System (EPMS) to update the hazards that threaten the City. Hazards data from the Colorado Division of Emergency Management, the National Oceanic and Atmospheric Administration, the High Plains Regional Climatic Center, The 2003 Adopted DRCOG Natural Hazard Mitigation Plan and many other sources were examined to assess the significance of these hazards to Westminster. Significance was measured in general terms and focused on key criteria such as frequency and impact, which includes deaths, injuries and both property and economic damage. The natural hazards evaluated as part of this plan include those that have occurred historically or have the potential to cause significant human and/or monetary losses in the future. The following natural hazards were identified and investigated for the City of Westminster's Natural Hazard Mitigation Plan:

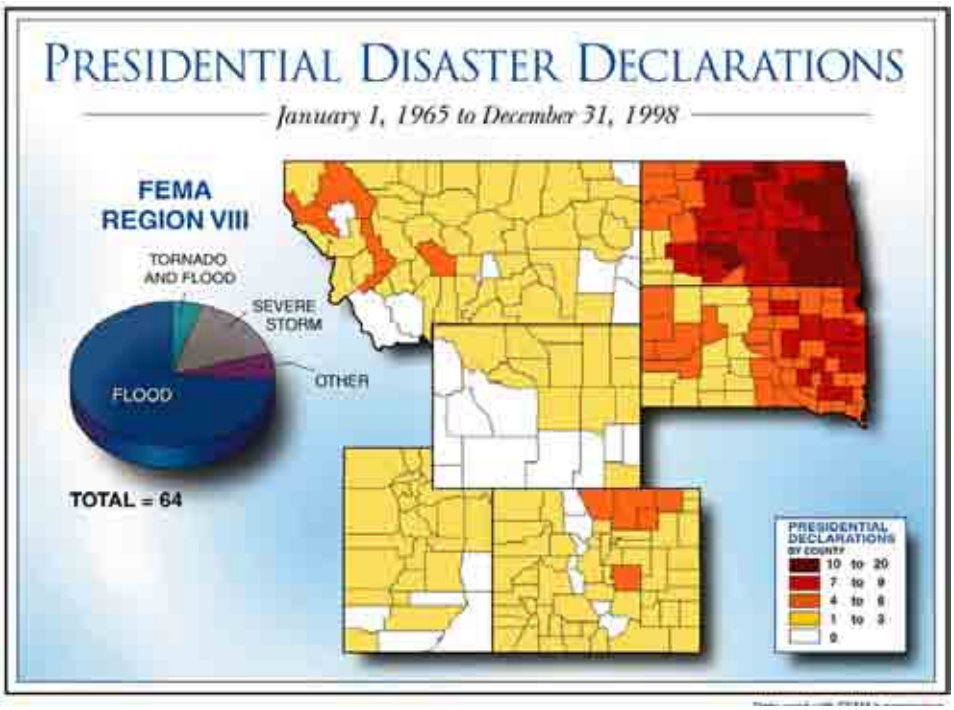
- **Dam Failure**
- **Drought**
- **Earthquakes**
- **Floods**
- **Human Health Hazards**
  - Pandemic Flu
  - West Nile Virus
- **Severe Weather**
  - Hailstorms
  - Heavy Rains/Storms
  - Lightning
  - Tornadoes
  - Windstorms
  - Winter Storms
- **Wildland Grass Fires**

Westminster Presidential Disaster Declaration History, 2000-2009

- 2003 snowstorm
- 2006 snowstorm

The State of Colorado has received 15 Presidential major disaster declarations between 1955 and mid-2007 and 4 emergency declarations (including one related to assistance for evacuees following Hurricane Katrina).

(Image 1) Presidential Disaster Declarations FEMA Region VIII, January 1, 1965 to December 31, 1998



Source: Boulder Multi-Hazard Mitigation Plan (Data used with FEMA permission)

Previous occurrences are discussed in more detail by hazard in **Profiling Hazards**.

4.3 Profiling Hazards

Requirement 201.6(c)(2)(i)
The risk assessment shall include a description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Definitions: Frequency & Impact

Frequency:

Low	0 to 5 significant events in the past 25 years
Medium	5 to 10 significant events in the past 25 years
High	10 or more significant events in the past 25 years

Severity of Impact:

Low	Exposures have been partially or fully mitigated or minimal risk exists. Property loss / damage and / or threat to population is considered minimal based upon probable location/s.
Medium	Exposures have either not been or cannot be mitigated. Property loss / damage and /or threat to population is considered possible based upon location/s.
High	Exposures have not been mitigated. Widespread property loss / damage and / or threat to population is considered highly likely

**taken from the City of Westminster Emergency Plan and Management System*

Likelihood of Future Occurrence:

The HMPC researched information from various media sources, interviewed long time City employees with previous knowledge, researched event information through the High Plains Regional Climatic Center and compared information and data with surrounding jurisdictions to establish the likelihood of future occurrences of each specified hazard. The Categories are:

1. **Unlikely**
2. **Likely**
3. **Highly Likely**

Table 1

Hazard Threat	Description/Frequency	Threatened Areas	Notes
Dam Failure	Dams have the potential to cause severe damage to property, as well as injuries and loss of life. A number of dams have the remote potential to impact the City of Westminster: Standley Reservoir Ketner Reservoir Woman Creek Reservoir McKay Lake Tepper Reservoir **Frequency – Low** **Impact – High** **Likelihood- Unlikely**	Flood Plain Areas within the City of Westminster.	It is predicted that the failure of any of the dams would cause property damage and possible injury or death. Previously, the largest threat was Standley Reservoir. A 32.5 million dollar mitigation project, completed in 2004, significantly reduced the threat of a dam break.
Earthquake	At least four major faults exist along the front range of Colorado including some along the Western portion of the City of Westminster. The frequency is unpredictable and an earthquake will be unexpected by the majority of the population. **Frequency – Low** **Impact – Low/medium depending on location of epicenter.** **Likelihood- Unlikely**	All areas.	It is possible for any area in the City to feel an earthquake even if the epicenter is not located within the City of Westminster. The major earthquake faults are located West of Interstate 25.
Urban or Street Flooding	Waterways and gulches that are normally dry pose an extreme threat during heavy rains. Residences close to the major drainage basins are especially threatened. Soil saturated by previous storms magnifies the effect of a severe storm capable of producing flash flooding. **Frequency – Low** **Impact- medium** **Likelihood: highly likely**	All areas.	Major drainage basins are: • Big Dry Creek • Little Dry Creek Coal Creek (possible secondary impact)

Hazard Threat	Description/Frequency	Threatened Areas	Notes
Riverine Flooding	Neighborhoods along Little Dry Creek and Big Dry Creek are susceptible to high running water due to severe winter storm snow melt or heavy localized rain. Flood damage potential is low to moderate due to flood mitigation efforts. **Frequency – Low Impact – Low Likelihood- Unlikely**	Flood Plain Areas within the City of Westminster. **See City Flood Plain Map**	High numbers of visitors and recreational enthusiasts at Standley Reservoir and along Big Dry Creek increase the number of people that may be affected and need warning and evacuation.
Tornado	Typically April through June. However, tornadoes are possible during other months of the year as well. **Frequency – Low Impact – High Likelihood- Unlikely**	Areas primarily East of I-25	NWS reports the north metro area averages one confirmed tornado each year since 1950. Development will increase probability of property damage. (NWS)
Wildland Fire	Open space and undeveloped property pose a threat with brush fires throughout the year in the City of Westminster. Most are contained immediately and do not escape initial attack. Periods of low humidity, lack of precipitation, and high winds provide ideal conditions for ignition. **Frequency – Low Impact – Low Likelihood- Unlikely**	Open space and undeveloped properties. The City of Westminster has small but frequent areas of open space which lowers the impact if a wildland fire were to ignite in the City.	Drought conditions may significantly increase the potential for wildland fires.
Winter Storm	Typically September through April. Heavy snowfall totals may seriously disrupt transportation, communications, and complicate emergency response. The absence of severe winter storms in the last several years is not typical of the front range. **Frequency – Medium Impact – Medium Likelihood- Highly likely**	All areas.	Although not necessarily an annual event, the City of Westminster is extremely susceptible to heavy snowfalls. NWS reports records of more than 48” of snow in a single storm. The City of Westminster has a long history of heavy snowfall totals.

Hazard Threat	Description/Frequency	Threatened Areas	Notes
Hail Storms	Typically March through October. Hailstones can by anywhere from 3/8 of an inch to grapefruit sized. Can cause sever damage to homes, vehicles, utilities and other forms of property. Major hail events are frequent along the Front Range. **Frequency- High Impact- Medium Likelihood- Highly likely**	All areas	Hailstorms have cost hundreds of thousands of dollars in recovery. Most typical month for Hailstorms is June and they are usually and afternoon/ evening phenomena.
High Wind Events	Can occur year round **Frequency- Medium/ high Impact- Medium/low Likelihood- Highly likely**	All areas	
Lightning	Typically occur in the summer months, usually May- September. According to the National Weather Service, lightening is the number one weather related killer in Colorado. **Frequency – High Impact – Low Likelihood- Highly likely**	All areas	Lightening heats the surrounding air to 50,000 degrees. This causes rapid expansion of the air which produces thunder. A lighting stroke also contains an enormous amount of electricity. Enough to power several homes for a month.
Drought	Due to the City's geographic location in a semi-arid climate, the area has experienced periods of drought. Drought events are usually long term. **Frequency- High/long term Impact- Situational Likelihood- Likely**	All areas	

**This table was developed for the City of Westminster's Emergency Plan and Management System and was modified for this plan.*

For each hazard, a generic description of the hazard and associated problems is provided along with details specific to Jefferson and Adams Counties and the City of Westminster. Information on past occurrences and the extent or location of the hazard within or near the City and impacts, where known, are also discussed here. To assess the history of natural hazard events in Westminster, the HMPC evaluated the hazards history for the City. The Management Intern gathered most of the data from the High Plains Regional Climatic Center and other local

resources, such as corresponding City departments. In general, information provided by planning team members is integrated into this section with information from other data sources, such as National Weather Service databases. The frequency of past events was used to gauge the likelihood of future occurrences. Overall hazard descriptions were taken from the City of Boulder's Multi Hazard Mitigation Plan that was developed by AMEC Earth and Environmental. Where possible, frequency was calculated based on existing data. The following sections provide profiles (in alphabetical order) of the natural hazards that the HMPC identified in **Identifying Hazards**.

4.4 Dam Failure

Dams are manmade structures built for a variety of uses, including flood protection, power, agriculture, water supply, and recreation. Dams typically are constructed of earth, rock, concrete, or mine tailings. Two factors that influence the potential severity of a full or partial dam failure are the amount of water impounded and the density, type, and value of development and infrastructure located downstream.

Dam failures can result from any one or a combination of the following causes:

- Prolonged periods of rainfall and flooding, which can result in over-topping.
- Earthquakes
- Inadequate spillway capacity resulting in excess overtopping flows
- Internal erosion caused by embankment or foundation leakage or piping or rodent activity
- Improper design
- Improper maintenance
- Negligent operation
- Failure of upstream dams on the same waterway

Overtopping is the primary cause of earthen dam failure.

Water released by a failed dam generates tremendous energy and can cause a flood that is catastrophic to life and property. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Impacts to life safety will depend on the warning time and the resources available to notify and evacuate the public. Major loss of life could result as well as potentially catastrophic effects to roads, bridges, and homes. Associated water quality and health concerns could also be an issue.

There are dams and reservoirs located throughout the City of Westminster. There is one Class I and four Class II dams. Class I dams are defined as those dams whose failure would result in loss of life. Class II dams are defined as those dams whose failure would result in significant damage but not loss of human life.

Past Occurrences:

There have been no dam breaks within the City of Westminster.

Likelihood of Future Occurrences:

The likelihood has been significantly reduced due to the Standley Lake Renovation Project therefore, it is **unlikely** that the City will experience a dam failure. The cities of Westminster, Northglenn and Thornton, who store water in Standley Lake, worked together on a massive renovation project that resulted in enhanced dam safety and stability to meet future water delivery needs. The $32.5 million renovation was completed within budget and ahead of schedule.

The work involved construction of a new, tunneled outlet works with a multi-level intake; and placement of additional berms on the downstream face to enhance dam stability. Additionally, the dam's spillway was enlarged to meet Colorado safety standards that require the spillway to be able to accommodate water flow from a catastrophic storm. The height of the dam and capacity of the lake were not increased during this project however the renovation allows the reservoir to safely store at full capacity.

The three cities determined that while enlarging the spillway, other safety issues could be addressed and operational improvements could be constructed cost effectively. The final renovation components were recommended by an independent board of review composed of internationally known experts in dam foundations, outlet works and spillways.

A team of local engineering firms led by CH2M HILL completed the design of the renovation with construction beginning in July 2002 by ASI/R.E. Monks construction contractors. Project costs were divided equally by the cities of Northglenn, Thornton and Westminster.

Thanks to the renovation, Standley Lake can continue to function as a reliable water supply reservoir for use by more than 250,000 residents and downstream farmers. Standley Lake is now entering a new life cycle as a vital community resource for the next century, which would not have been possible without the renovation.

4.5 Drought

Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multi-year period, and it is often not obvious or easy to quantify when a drought begins and ends. Drought is a complex issue involving many factors—it occurs when a normal amount of moisture is not available to satisfy an area's usual water-consuming needs. Drought can often be defined regionally based on its effects:

• **Meteorological** drought is usually defined by a period of below average water supply.
• **Agricultural** drought occurs when there is an inadequate water supply to meet the needs of the state's crops and other agricultural operations such as livestock.
• **Hydrological** drought is defined as deficiencies in surface and subsurface water supplies. It is generally measured as stream flow, snowpack, and as lake, reservoir, and groundwater levels.
• **Socioeconomic** drought occurs when a drought impacts health, well-being, and quality of life or when a drought starts to have an adverse economic impact on a region.

With its semiarid conditions, drought is a natural but unpredictable occurrence in Colorado. Due to natural variations in climate and precipitation sources, it is rare for all of Colorado to be deficient in moisture at the same time. However, single season droughts over some portion of the state are quite common. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users that have a different water supply. Individual water suppliers may use criteria, such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler, to define their water supply conditions. The drought issue is further compounded by water rights specific to a state or region. Water is a commodity possessed under a variety of legal doctrines .Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with

drought in Colorado are those related to water intensive activities such as agriculture, wildfire protection, municipal usage, commerce, tourism, recreation, and wildlife preservation. A reduction of electric power generation and water quality deterioration are also potential problems. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. An ongoing drought may also leave an area more prone to beetle kill and associated wildfires. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.

Past Occurrences

According to the *2004 Drought and Water Supply Assessment*, Colorado has historically experienced multiple severe droughts. Because of the recurring drought pattern in Colorado and the Front Range, the City of Westminster developed a Drought Plan which involves efforts to reduce water usage during severe drought periods. The most significant drought events of the instrumented period (which began in the late 1800s) are listed in the table below.

(Table 2) Significant Colorado Drought Periods of the Modern Instrumented Era:

Years	Impacted Area
1890-1894 1890 and 1894	Severe drought east of mountains
1898-1904 1902-1904	Very severe drought over southwestern Colorado
1930-1940 1931-1934, 1939	Widespread, severe, and long lasting drought in Colorado
1950-1956 1950, 1954-1956	Statewide, worse than the 1930s in the Front Range
1974-1978 1976-1977	Statewide, driest winters on recorded history for Colorado's high country and Western Slope
1980-1981 Winter 1980-1981	Mountains and West Slope; writing of the Colorado Drought Response Plan and the formation of the Water Availability Task Force
2000-2003 2001-2002	Significant multi-year statewide drought, with many areas experiencing most severe conditions in Colorado in instrumented history

Source: Drought and Water Supply Assessment, 2004, http://cwcb.state.co.us/Conservation/Drought/Drought_Water/index_DWSA.html

Likelihood of Future Occurrences:

Likely: According to historical data of Westminster and the *Drought and Water Supply Assessment*, the City will experience drought conditions in the future. The severity and longevity of these occurrences is unknown and hard to predict. The City of Westminster Drought Plan

outlines water conservation measures designed to reduce water waste and un-necessary water consumption during drought periods.

4.6 Earthquakes

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the location on the ground surface as felt by humans and defined in the Modified Mercalli scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

(Table 3) Earthquake Intensities with Approximate Corresponding Magnitudes:

Modified Mercalli Intensity	Description	Richter Magnitude
I	**Instrumental**: detected only by seismographs	3.5
II	**Feeble**: noticed only by sensitive people	4.2
III	**Slight**: like the vibrations due to a passing train; felt by people at rest, especially on upper floors	4.3
IV	**Moderate**: felt by people while walking; rocking of loose objects, including standing houses	4.8
V	**Rather strong**: felt generally; most sleepers are awakened and bells Ring	4.9-5.4
VI	**Strong**: trees sway and all suspended objects swing; damage by overturning and falling of loose objects	5.5-6.0
VII	**Very strong**: general alarm; walls crack; plaster falls	6.1
VIII	**Destructive**: car drivers seriously disturbed; masonry fissured; chimneys fall; poorly constructed buildings damaged	6.2
IX	**Ruinous**: some houses collapse where ground begins to crack, and pipes break open	6.9
X	**Disastrous**: ground cracks badly; many buildings destroyed and railway lines bent; landslides on steep slopes	7.0-7.3
XI	**Very disastrous**: few buildings remain standing; bridges destroyed; all services (railways, pipes and cables) out of action; great Landslides and floods	7.4-8.1
XII	**Catastrophic**: total destruction; objects thrown into air; ground rises and falls in waves	> 8.1

Source: Math/Science Nucleus.Org

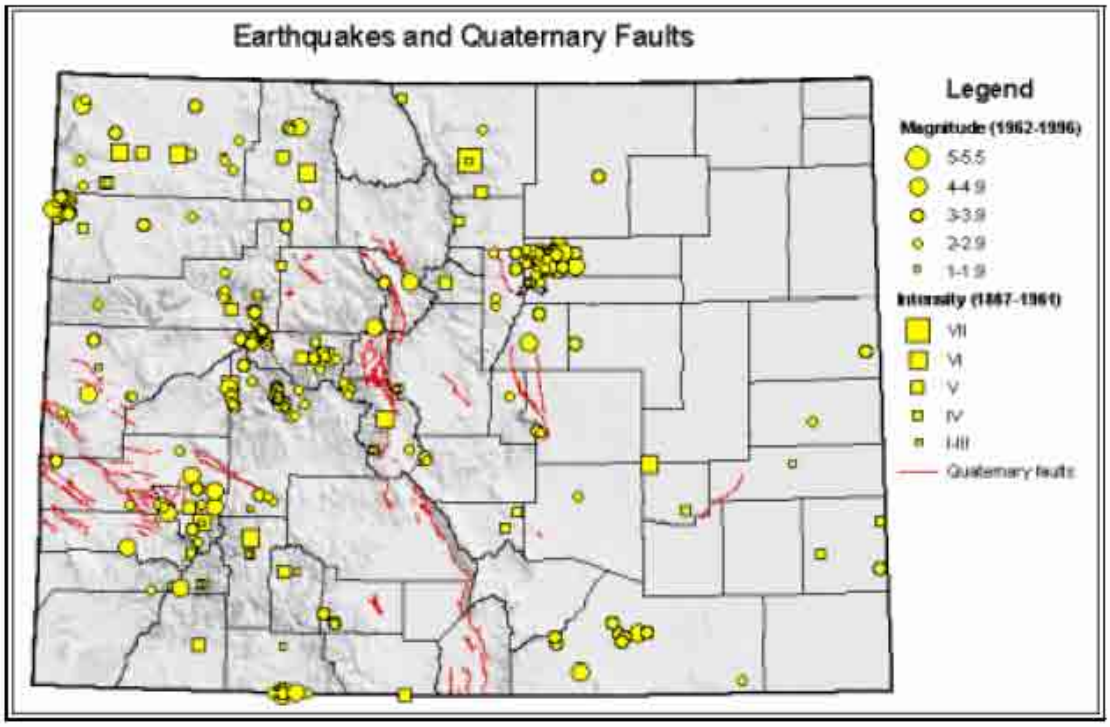
Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, communication, and transportation lines. Other damage-causing effects of earthquakes include surface rupture, fissuring, settlement, and permanent horizontal and vertical shifting of the ground. Secondary impacts can include landslides, seiches, liquefaction, fires, and dam failure. Colorado is considered a region of minor earthquake activity. Geologic studies indicate there are
about 90 potentially active faults in Colorado with documented movement within the last 1.6 million years. Active faults, which represent the highest earthquake hazard, are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years).

Stress builds up and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. The amount of energy released during an earthquake is usually expressed as a Richter magnitude and is measured directly from the earthquake as recorded on seismographs. Another measure earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface as felt by humans and defined in the Modified Mercalli scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

Past Occurrences

According to the U.S. Geological Survey (USGS), eastern Colorado is nearly void of seismic activity, with just a few epicenters in the Arkansas and Platte river valleys. Most shocks in the history of Colorado have been centered west of the Rocky Mountain Front Range. The first seismographs in Colorado of sufficient quality to monitor earthquake activity were installed in 1962. Newspaper accounts are the primary source of published data for earthquake events before that time. Image 3 illustrates historic earthquakes and Quaternary faults in Colorado

(Image 2) Historic Earthquakes and Quaternary Faults in Colorado



Source: State of Colorado Natural Hazard Mitigation Plan, 2004

The following is a summary of known earthquake activity in Colorado with a focus on the Front Range region.

• **Since 1867**—More than 400 earthquake tremors of magnitude 2.5 or greater have been recorded in Colorado.

• **November 7, 1882**—On this day, the largest recorded earthquake in the state and the first to cause damage in Denver occurred. The epicenter is thought to have been located in the Front Range near Rocky Mountain National Park; the magnitude was estimated to be about 6.2 on the Richter scale. The earthquake was felt as far away as Salina, Kansas, and Salt Lake City, Utah.

• **1962-1967**—A series of earthquakes occurred in the Denver area from 1962-1967. The earthquakes were felt by cities and towns within a 100-mile radius of Denver. Some people attribute this earthquake activity to deep-well injections conducted at the Rocky Mountain Arsenal starting in 1962. A few notable occurrences are detailed below.

• **1965**—Shocks on February 16, September 29, and November 20 caused intensity VI damage in the Commerce City area.

• **January 4, 1966**—A magnitude 5.0, intensity V earthquake occurred northeast of Denver.

• **April 10, 1967**—The Colorado School of Mines rated this earthquake of magnitude 5.0. The earthquake broke 118 windowpanes in buildings at the Rocky Mountain Arsenal, cracked an asphalt parking lot in the Derby area, and caused school officials in the area to dismiss schools because of cracked walls.

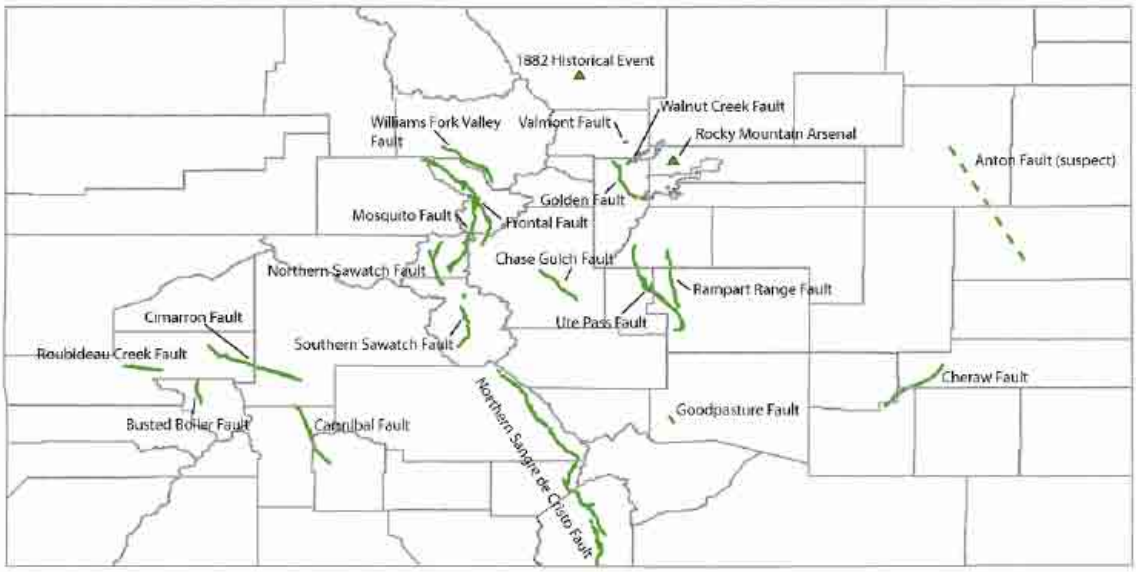
• **April 27, 1967**— Boulder sustained minor damage to walls and acoustical tile ceilings as a result of this magnitude 4.4 earthquake.

• **August 9, 1967**—Located northeast of Denver, this magnitude 5.2, intensity VI earthquake caused more than $1 million in damage and is considered the most economically damaging earthquake in Colorado history.

• **November 27, 1967**—A magnitude 5.1, intensity VI earthquake occurred northeast of Denver.

• **Since 1971**, there have been 12 to 15 earthquakes located north and northeast of Denver that were large enough to be felt in the Denver Metropolitan Area.

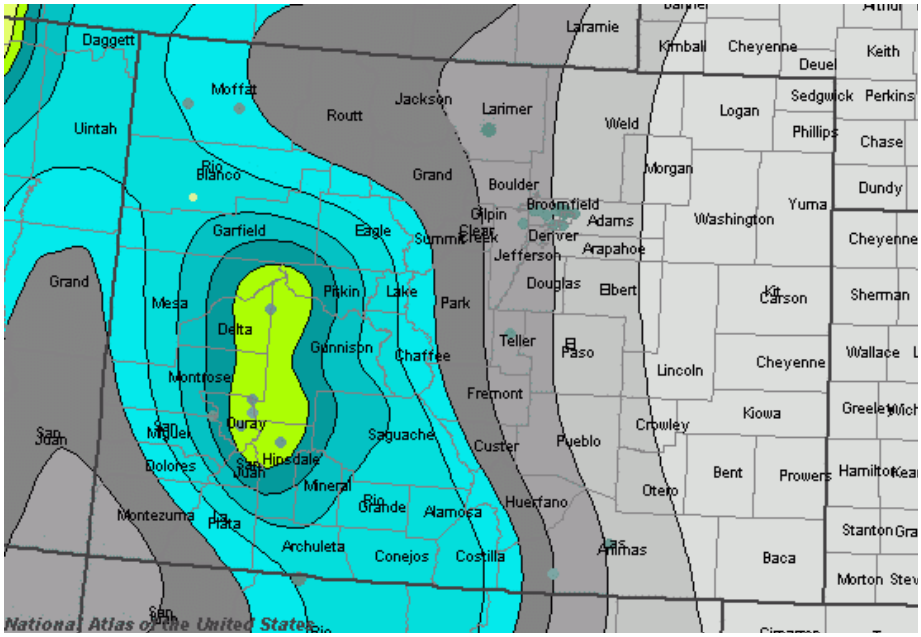
(Image 3) Colorado Major Fault Map:



Source: State of Colorado Natural Hazard Mitigation Plan, 2004

Seismic hazard zone maps and earthquake fault zone maps are used to identify where such hazards are more likely to occur based on analyses of faults, soils, topography, groundwater, and the potential for earthquake shaking that can trigger landslide and liquefaction. Images 5 and 6 are probabilistic seismic hazard maps of Colorado from the USGS that depict the probability that ground motion will reach a certain level during an earthquake. The data show peak horizontal ground acceleration (the fastest measured change in speed for a particle at ground level that is moving horizontally because of an earthquake). Image 5 depicts the shaking level that has a 10 percent chance of being exceeded over a period of 50 years (as well as earthquakes in Colorado between 1568 and 2004).

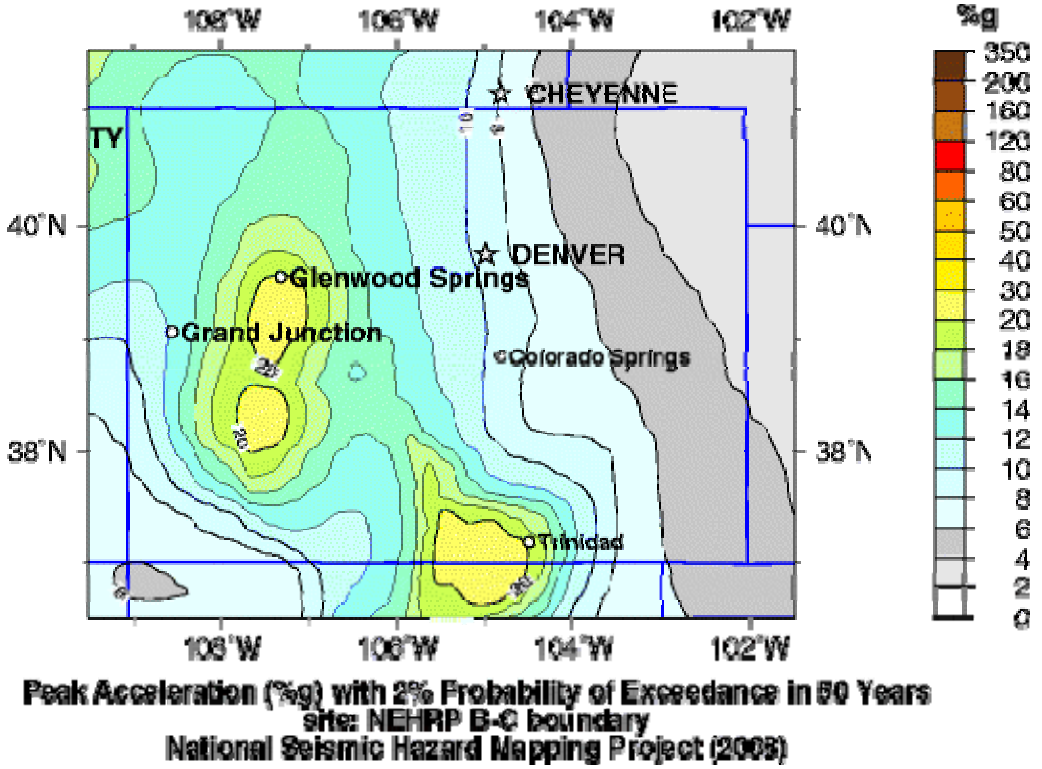
(Image 4) Colorado Seismic Hazard Map—10% Probability of Exceedance in 50 Years:



(Image 5)

Source: USGS, www.nationalatlas.gov

(Image 6) Colorado Seismic Hazard Map



Source: USGS Earthquake Hazards Program http://earthquake.usgs.gov/regional/states/colorado/hazards.php

Likelihood of Future Earthquake Occurrences:

Unlikely: Because there are no faults directly located in the City of Westminster, the likelihood of future occurrences is based only off of the seismic activity in surrounding areas. The effects of earthquakes will be felt in Westminster depending on their intensity and the relative proximity of the epicenter to the City.

4.7 Floods:

Floods can be among the most frequent and costly natural disaster in terms of human hardship and economic loss and can be caused by a number of different weather events. Floods can cause injuries and deaths and substantial damage to structures, landscapes, and utilities. Certain health hazards are also common to flood events. Standing water and wet materials in structures can become a breeding ground for microorganisms such as bacteria, mold, and viruses. This can cause disease, trigger allergic reactions, and damage materials long after the flood. Direct impacts such as drowning can be limited with adequate warning and public education about what to do during floods. Where flooding occurs in populated areas, warning and evacuation will be critical to reduce life and safety impacts. The City of Westminster is somewhat susceptible to various types of flood events as described below:

Riverine or Overbank Flooding

This type of flooding is defined as when a watercourse exceeds its "bank-full" capacity and is usually the most common type of flood event. However, due to Westminster's geographic/ topological characteristics, riverine flooding is not common. Riverine flooding generally occurs as a result of prolonged rainfall, or rainfall that is combined with soils or drainage systems that are already saturated or overloaded from previous rain events. The duration of riverine floods may vary from a few hours to several days.

Factors that directly affect the amount of flood runoff include precipitation amount, intensity, and spatial and temporal distribution; the amount of soil moisture; seasonal variation in vegetation; snow depth; and the water resistance of the surface due to urbanization. Other factors, such as debris blocking a waterway or channel, can further aggravate a flood event. As a result, drainage systems can become overloaded more frequently. The most serious overbank flooding occurs during flash floods that result from intense rainstorms or following a dam failure. The term "flash flood" describes localized floods of great peak flow and magnitude and short duration. In contrast to riveriene flooding, this type of flood usually results from a heavy rainfall on a relatively small drainage area. Flash floods by definition occur very quickly and may occur with little or no warning.

Irrigation Ditches/Canals Flooding

Ditches convey irrigation water along hillsides, following contours and, as a result, cut across the natural drainage pattern of storm water runoff flowing down hillsides. Although efforts are made to separate storm water runoff and irrigation water, excessive runoff can flow into an irrigation ditch causing overbank flooding or a collapse of the ditch itself. Similar to flash floods, there is often little warning for these types of events.

Urban or Street Flood Events

These events occur due to the conversion of land from fields to roads and parking lots, which cause the land to lose its ability to absorb rainfall. Urbanization increases runoff two to six times over what would occur on natural terrain. Except at underpasses, street flooding and yard ponding usually do not exceed more than a foot or two and are often viewed more as a nuisance than a major hazard. However, during periods of urban flooding, high velocity flows can occur in streets, even in areas with only shallow flooding but can also overflow and runoff from impermeable surfaces can cause property damage.

Floodplains

The channel and the area adjacent to a channel inundated by the 100 year flood are referred to as the floodplain. Floodplains are illustrated on inundation maps, which show areas of potential flooding and water depths. In its common usage, the floodplain most often refers to that area that is inundated by the 100-year flood or the flood that has a 1- percent chance of occurring in any given year. In Westminster, the regulatory floodplain is defined by Flood Hazard Area Delineation maps (FHAD's) as adopted by City Council. Simply stated, the hydrology for this floodplain is based on a fully developed, unrestrained flow. The 100-year flood shown on the Flood Insurance Rate Maps (FIRM's) is the national minimum standard to which communities regulate their floodplains through the National Flood Insurance Program. While there are exceptions, for the most part, the hydrology for the FIRM floodplain is based on existing developed conditions at the time the Flood Insurance Study (FIS) was prepared. Since the potential for flooding can change and increase as a result of land use changes and changes to land surface that change the floodplain, the City regulates to the FHAD floodplain to prevent development in areas where the floodplain will eventually be once full development is achieved. A change in environment can create localized flooding problems in and out of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

Sources of Potential Flooding Events:

Westminster has several primary creeks, tributaries, and associated watersheds. Major Waterways include:

- Big Dry Creek
- Little Dry Creek

Regulatory Flooding:

Of all the major drainage ways, 100-year floodplain boundaries cover more than 13 percent of the lands inside the City limits. Taken from the officially adopted flood studies for the City, this illustrates the City's FHAD floodplains. (See maps on pgs 75-77).

Stormwater Drainage Flooding:

The City's stormwater collection system consists of a variety of storm sewers and open drainage ditches that collect water and divert it to major drainage ways. Irrigation ditches collect stormwater in many places in the City. Depending on the amount of rainfall, stormwater flows may exceed ditch capacity and spill out in an uncontrolled manner. The City's Drainage Study provides detailed information for all of the major drainage basins in the City of Westminster.

Past Front Range Occurrences*:*

• **July 31, 1976**—The Big Thompson Flood claimed over 400 houses and 144 lives when 12- 14 inches of rain fell in the canyon along Highway 34.

• **July 28, 1997**—The Fort Collins flood caused $200 million in damage and claimed five lives. The flood was caused by a storm that dumped 14.5 inches of rain.

• There have been no major flooding events in Westminster due to careful floodplain management and regulated development policies. The City has three repetitive loss properties due to stormwater drainage off of impermeable ground. (See Section 4.21 D for further repetitive loss properties).

Likelihood of Future Occurrences:
Large scale riverine flooding is **unlikely** due to improvements at Stanley Reservoir and the City's geographic location and terrain. More localized flooding would be **highly likely** in situations where a substantial amount of rain falls in a short period of time. This would over-tax the stormwater drainage system and cause run-off from impermeable ground, potentially causing property damage.

4.8 Human Health Hazards: Pandemic Flu

A pandemic is a global disease outbreak. A pandemic flu is a virulent human flu that causes a global outbreak, or pandemic, of serious illness. A flu pandemic occurs when a new influenza virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in very short time. The U.S. Prevention has been working closely with other countries and the World Health Organization to strengthen systems to detect outbreaks of influenza that might cause a pandemic and to assist with pandemic planning and preparation. Most recently, health professionals have been concerned by the possibility of an avian (or bird) flu pandemic associated with a highly pathogenic avian H5N1 virus. Since 2003, avian influenza has been spreading through Asia. A growing number of human H5N1 cases contracted directly from handling infected poultry have been reported in Asia, Europe, and Africa, and more than half the infected people have died. There has been no sustained human-to-human transmission of the disease, but the concern is that H5N1 will evolve into a virus capable of human-to-human transmission. There are also recent concerns with the potential for a widespread outbreak of H1N1 (Swine Flu). Researchers are in the process of developing a distributable vaccine for the strand

An especially severe influenza pandemic could lead to high levels of illness, death, social disruption, and economic loss. Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines.

Past Occurrences

There have been three acknowledged pandemics in the twentieth century:

• **1918-19 Spanish flu (H1N1)**—This flu is estimated to have sickened 20-40 percent of the world's population. Over 20 million people lost their lives. Between September 1918 and April 1919, 500,000 Americans died. The flu spread rapidly; many died within a few days of infection, others from secondary complications. The attack rate and mortality was highest among adults 20-50 years old; the reasons for this are uncertain.

There has been a more recent outbreak of the H1N1 virus which is affecting many people. A vaccine is now available in limited supply.

• **1957-58 Asian flu (H2N2)**—This virus was quickly identified due to advances in technology, and a vaccine was produced. Infection rates were highest among school children, young adults, and pregnant women. The elderly had the highest rates of death. A second wave developed in 1958. In total, there were about 70,000 deaths in the United States. Worldwide deaths were estimated between 1 and 2 million.

• **1968-69 Hong Kong flu (H3N2)**This strain caused approximately 34,000 deaths in the United States and more than 700,000 deaths worldwide. It was first detected in Hong Kong in early 1968 and spread to the United States later that year. Those over age 65 were most likely to die. This virus returned in 1970 and 1972 and still circulates today.

More Recently:

• 2009-2010 Swine flu (H1N1) This is a new influenza virus causing illness in people. This new virus was first detected in people in the United States in April 2009. This virus is spreading from person-to-person worldwide, probably in much the same way that regular seasonal influenza

viruses spread. CDC laboratory studies have shown that no children and very few adults younger than 60 years old have existing antibody to 2009 H1N1 flu virus; however, about one-third of adults older than 60 may have antibodies against this virus. It is unknown how much, if any, protection may be afforded against 2009 H1N1 flu by any existing antibody. (*www.cdc.gov)*

Likelihood of Future Occurrences:

Likely According to historical data, three influenza pandemics have occurred since 1918. This is an average of a pandemic every 29.66 years or a 3.37 percent chance of pandemic in any given year. Although scientists cannot predict when the next influenza pandemic will occur or how severe it will be, wherever and whenever it starts, everyone around the world will be at risk. If an influenza pandemic does occur, it is likely that many age groups would be seriously affected. The greatest risks of hospitalization and death—as seen during the last two pandemics in 1957 and 1968 as well as during annual outbreaks of influenza—will be to infants, the elderly, and those with underlying health conditions. However, in the 1918 pandemic, most deaths occurred in young adults. Few people, if any, would have immunity to the virus.

Source: (www.cdc.gov)

4. 9 Human Health Hazards: West Nile Virus

The impact to human health that wildlife, and more notably, insects, can have on an area can be substantial. Mosquitoes transmit the potentially deadly West Nile virus to alike. West Nile virus first struck the western hemisphere in Queens, New York, in 1999 and killed four people. Since then, the disease has spread across the United States. In 2003, West Nile virus activity occurred in 46 states and caused illness in over 9,800 people.

Most humans infected by the virus have no symptoms. A small portion develops mild symptoms that include fever, headache, body aches, skin rash, and swollen lymph glands. Less than one percent of those infected develop more severe illness such as meningitis or encephalitis, symptoms of which include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. Of the few people who develop encephalitis, fewer than 1 out of 1,000 infections die as a result.

There is no specific treatment for the infection or a vaccine to prevent it. Treatment of severe illness includes hospitalization, use of intravenous fluids and nutrition, respiratory support, prevention of secondary infections, and good nursing care. Medical care should be sought as soon as possible for persons who have symptoms suggesting severe illness. People over 50 years of age appear to be at high risk for the severe aspects of the disease.

West Nile virus is a fairly recent natural hazard to affect Colorado. The City of Westminster recognizes the potential for West Nile virus to occur within the area. A public outreach campaign is sponsored by both Tri-County Health and Jefferson County Health Departments to educate the public, and efforts have been made to reduce the mosquito population.

Human West Nile Virus Infections: Colorado, 2009

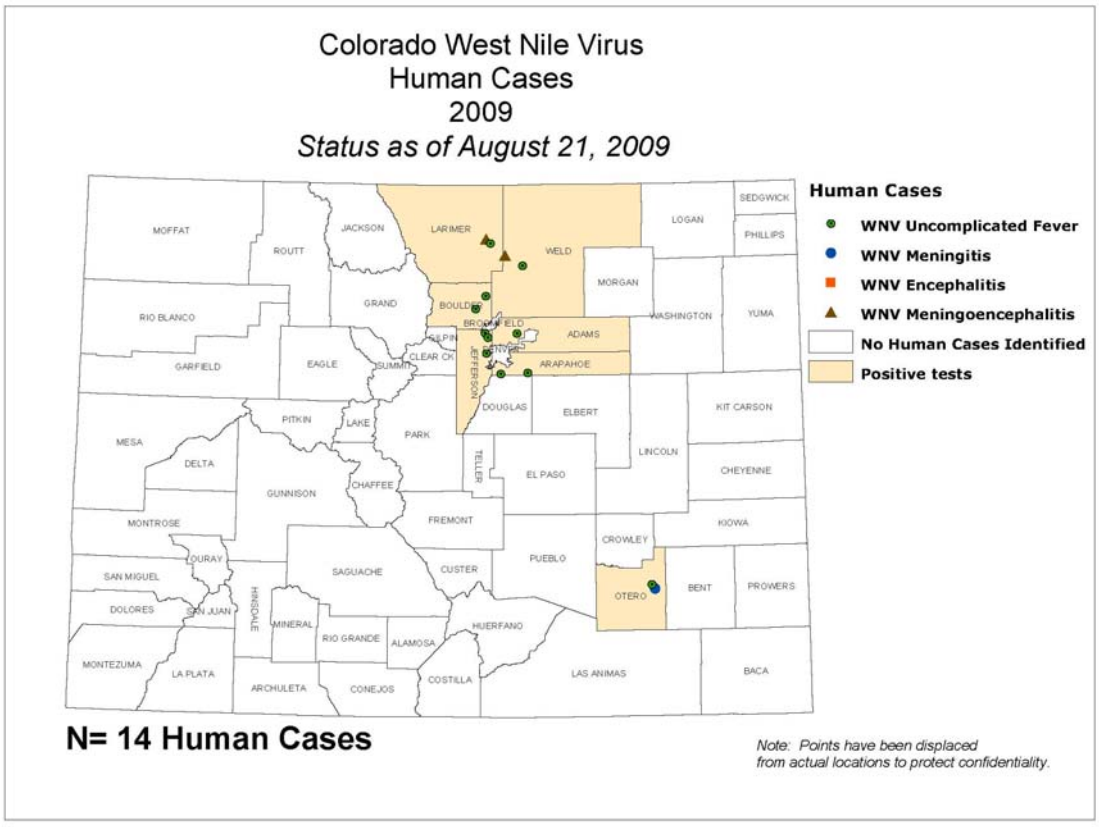
Updated August 21, 2009

	New cases	Clinical diagnosis		Total cases	Total deaths
		Fever	Meningitis	Encephalitis		
County of Residence	1	1	.	.	1	.
Adams						
Arapahoe	.	2	.	.	2	.
Boulder	1	2	.	.	2	.
Jefferson	1	3	.	.	3	.
Larimer	2	1	.	1	2	.
Otero	.	1	1	.	2	.
Weld	.	1	.	1	2	.
COLORADO	5	11	1	2	14	.

*Counties not listed have no verified human cases
Source: www.cdphe.com

The map below shows the distribution of human cases of West Nile Virus in Colorado in 2009. This map is from the Colorado Department of Public Health and Environment and provides detailed information about specific cases. Colorado had 9 cases of Human West Nile Virus in 2009. Arapahoe, Weld, Otero and Jefferson Counties each have had two cases and Boulder County has had one.

(Image7)



Source: www.cdphe.state.co/us

Although 43 different species of mosquitoes can carry the West Nile virus, Culex species are the primary carriers of the virus in Colorado. Because of this, Westminster Public Health focuses on these species for surveillance, control, and identification of relative risk for contracting West Nile virus within Westminster.

Likelihood of Future Occurrences:
Because the disease is carried and spread by mosquitoes, it is **likely** that future cases of West Nile will occur. However, the City actively monitors high-risk areas and works to minimize breeding grounds for the bugs. Public education is one way the City actively addresses the issue. The City of Westminster has a formal West Nile Prevention Program which outlines mitigation efforts and risks in detail.

4.10 Severe Weather: General

Severe weather conditions occur each year in the City of Westminster. A database maintained by the National Oceanic and Atmospheric Administration National Climatic Data Center (NCDC) identified 374 severe weather events in Westminster between January 1, 1985, and August 31, 2009. Because the City of Westminster is located in both Adams and Jefferson Counties, this number is the average between Adams County occurrences and Jefferson County occurrences. The events listed below are only events that are known to occur specifically in the City of Westminster.

Source: National Climatic Data Center (NCDC) Storm Events database, www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Note: Not all types of weather event are tracked back to 1950. The NCDC database includes: All weather events from 1993-present as entered into Storm Data plus additional data from the Storm Prediction Center, including tornadoes.

4.11 Severe Weather: Hailstorms

Hail is formed when water droplets freeze and thaw as they are thrown high into the upper atmosphere by the violent internal forces of thunderstorms. Hail is usually associated with severe summer storms, which occur throughout the spring, summer, and fall in the City of Westminster. Hailstorms generally occur more frequently during the late spring and early summer. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 mph. The NWS considers hailstones in excess of ¾ inch in diameter as one criteria of a severe thunderstorm. Severe hailstorms can be quite destructive, causing damage to roofs, buildings, automobiles, and vegetation. While minor injuries can also result during severe hailstorms, rarely do hailstorms result in loss of life. However, in 1979 a child was killed in Fort Collins when struck in the head by a hailstone reported to be the size of a grapefruit. Livestock injuries and fatalities from hail can also occur. Hail is a major cause of property damage in the plains just east of the Rockies. The past 30 years have brought one catastrophic hailstorm after another to the Front Range. One of these large storms occurred on July 11, 1990, when Denver took a direct hit by hail during a severe thunderstorm. $600 million in Damage totals were reported. The property losses from this hailstorm are the largest ever reported from one storm. Another hailstorm in July, 2009 caused approximately $350 million dollars in preliminary estimated damages. These two events are some of the most costly storms in the history of Colorado.

Past Occurrences

A study conducted in 1994 by the State of Colorado climatologist looked at recorded hail statistics from 1973 to 1985 and from 1986 to 1993. The data used for this study is limited as systematic observations of hail are taken only at a small number of weather stations. Therefore, this study relied on point weather station data from a small number of sites in and near Colorado along with statewide data on severe hailstorms obtained from the national publication, *Storm Data*. Further, since hail occurs only briefly and tends to be very localized, many storms go undetected by the official weather stations. Regardless, by analyzing the existing data, this study uncovered the following statistics regarding hailstorms in Colorado:

• The hail season in Colorado begins in March and ends in October.
• There has been an average of more than 130 reported severe hailstorms each year since 1986.
• Overall, June has the highest frequency of days with hail with slightly more than 10 on average.

• Hail in Colorado is primarily an afternoon or evening phenomenon; 90 percent of all severe hailstorms reported between 1986 and1993 occurred between 1:00 and 9:00 p.m.
• Hail usually only falls for a few minutes. Hail that continues for more than 15 minutes is unusual.
• A study of 60 Fort Collins hail events showed the median duration to be six minutes.
• The vast majority of hailstones that fall in Colorado are ½ inch in diameter or smaller.
• The most common size range for damaging hail in Colorado is 1 to 1.5 inches in diameter and accounts for more than 13 of the severe hailstorm reports in this study.
• Six percent of the reported severe hailstorms had maximum hailstone diameters of 2.5 inches or greater.
• The maximum hailstone size reported in this study was 4.5 inches.
• Hail frequency can be very variable. For example, there were only 25 severe hail days in 1988 compared with 51 in 1993.
• Severe hail is not a statewide problem. It is limited to eastern Colorado beginning in the eastern foothills and extending across the eastern plains. Costly hailstorms in the Denver Front Range area identified by the Colorado Division of Emergency Management include those listed in Table 6. The extent of damage specifically in the Westminster area from these storms could not be determined from available data.
* *Hail statistics and information taken from Boulder's Multi-Hazard Mitigation Plan developed by AMEC Earth and Environmental*

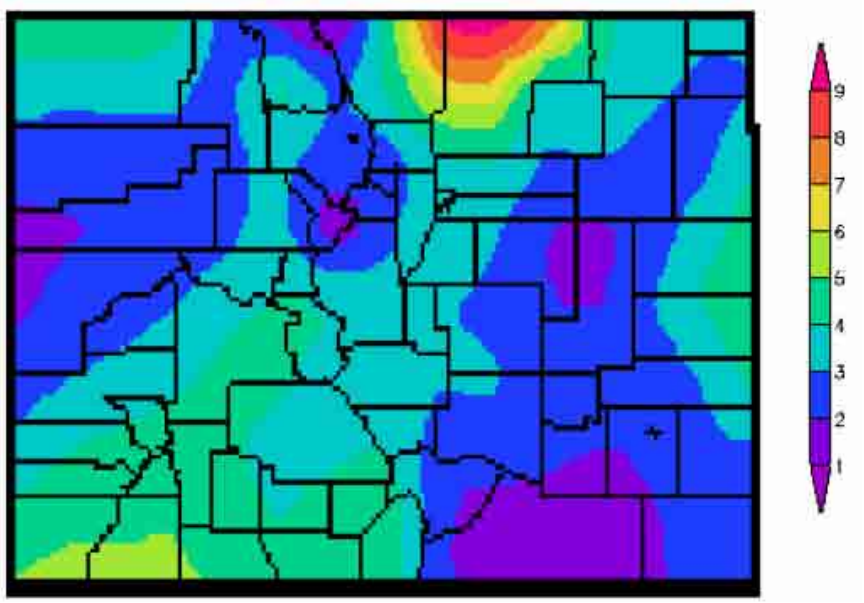
(Table 6) Costly Hailstorms in the Denver Front Range

Date	Location	Cost of Damage
June 8-9, 2004	Golden/SW Denver/Lakewood	$146.5 million
October 15, 1998	Denver area	$87.8 million
August 11, 1997	Denver area	$128 million
June 21-22, 1996	Denver/Larimer	$100 million
May 22, 1996	Denver	$122 million
October 1, 1994	Denver	$225 million
July 11, 1990	Denver/Front Range	$626 million
August 2, 1986	Denver/Fort Collins/Longmont	$145 million
June 13-14, 1984	Denver/Arvada	$276.7 million

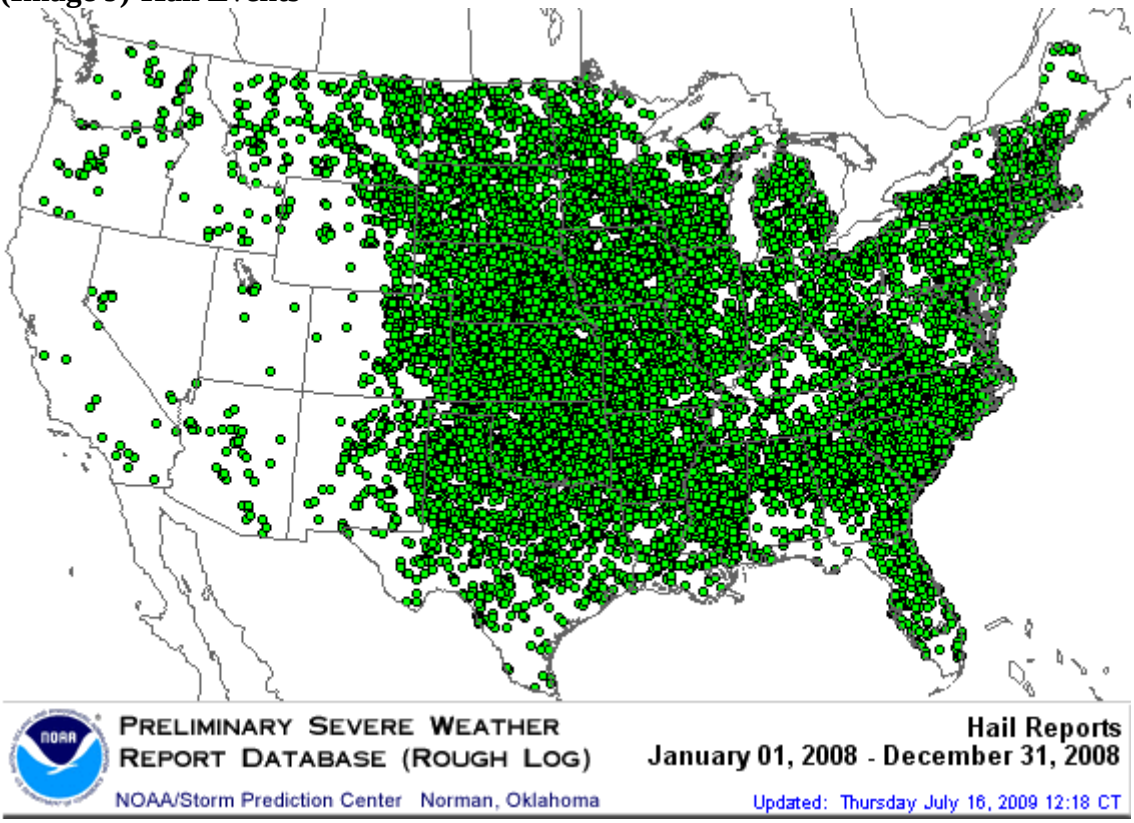
Source: Colorado Division of Emergency Management, www.dola.colorado.gov/dem/publicinformation/hail.htm

Data obtained from the National Climatic Data Center identified 158 hail events in Adams and Jefferson Counties since 1985. Please note that because Westminster is located in both Adams and Jefferson counties, the data is only regionally specific.

(Image 8) -Colorado's Average Number of Days with Hail



(Image 9)-Hail Events



Likelihood of Future Occurrences:

Because of the City's geographic location and proximity to the Front Range, it is **highly likely** that the City of Westminster will experience hailstorms. It is extremely difficult to mitigate against these occurrences because of the sporadic and widespread nature of the storms. Hailstorms continue to be one of the most costly natural hazards to the City.

4.12-Severe Weather: Heavy Rains/Storms

Thunderstorms are quite prevalent in the eastern plains and along the eastern slopes of the mountains during the spring and summer. Thunderstorms develop when cold upper air sinks and warm moist air rises. As the warm air rises, storm clouds (thunderheads) develop, creating the thunderstorms. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. They most often occur during the afternoon and evening hours. Severe storms/thunderstorms generally include heavy rains
often accompanied by strong winds, lightning, and hail. Thunderstorms can produce a strong rush of wind known as a downburst and straight-line winds, which may exceed 120 miles per hour. Tornadoes can also occur during these big storms. Severe storms can overturn mobile homes, tear roofs off of houses, and topple trees. Thunderstorms also cause secondary hazards, such as landslides, soil erosion, and flooding.

Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail, three-quarters inch or greater; winds gusting in excess of 57.5 mph (50 knots); or a tornado.

Past Occurrences

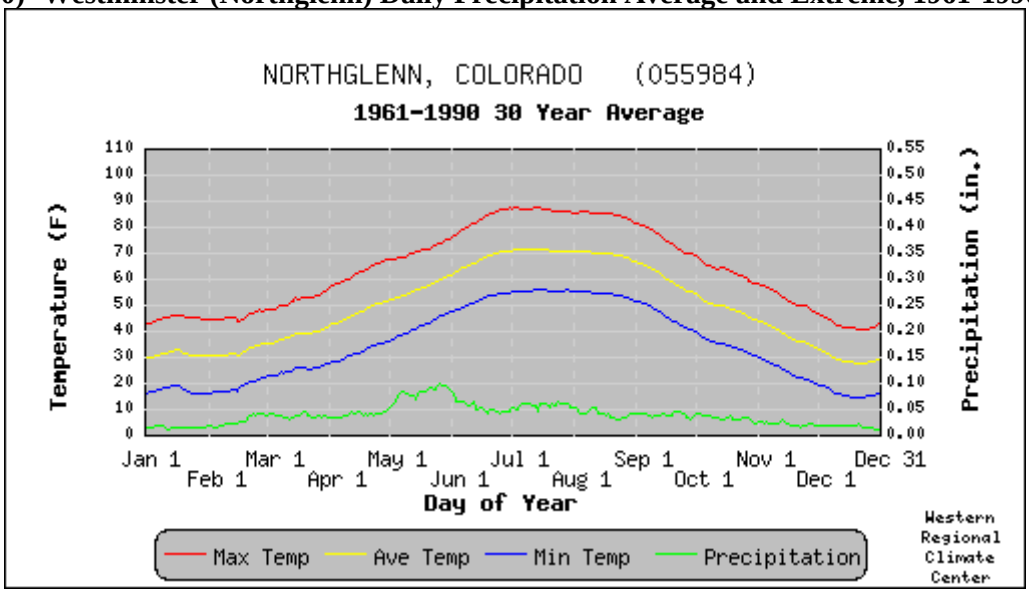
The table below illustrates the average total monthly precipitation for the City of Westminster:

(Table 7)-Westminster Monthly Average Total Precipitation, 9/ 1/1984 to 12/31/2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Precipitation (in.)	0.40	0.38	1.13	1.85	2.12	1.53	1.76	1.60	1.09	0.99	0.72	0.54	**14.10**

Source: High Plains Regional Climatic Center

(Image 10)- Westminster (Northglenn) Daily Precipitation Average and Extreme, 1961-1990

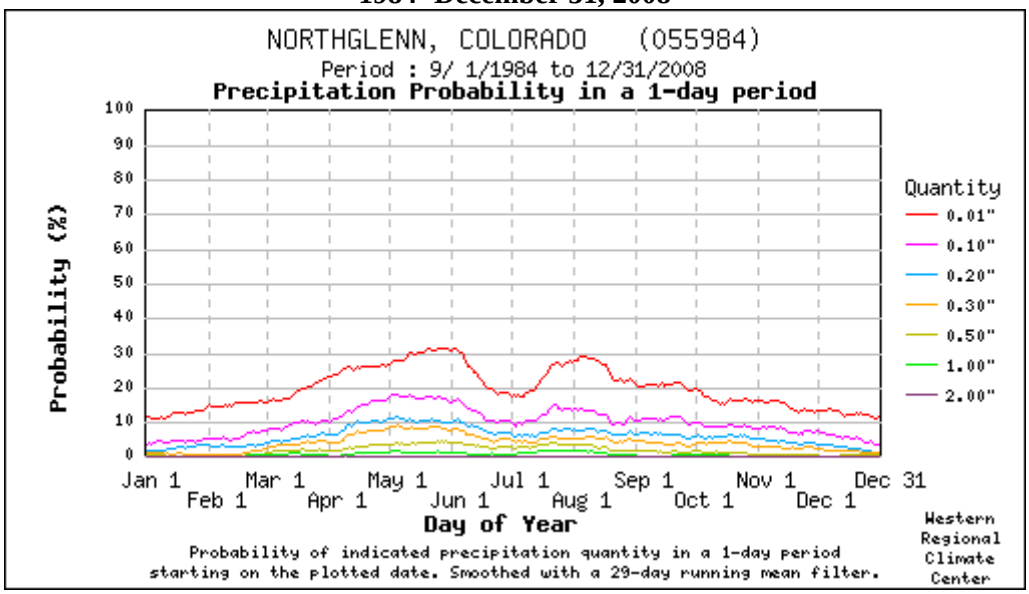


Data is smoothed using a 29 day running average.

- Max. Temp. is the average of all daily maximum temperatures recorded for the day of the year between the years 1961 and 1990.
- Ave. Temp. is the average of all daily average temperatures recorded for the day of the year between the years 1961 and 1990.
- Min. Temp. is the average of all daily minimum temperatures recorded for the day of the year between the years 1961 and 1990.
- Precipitation is the average of all daily total precipitation recorded for the day of the year between the years 1961 and 1990.

Source: Western Regional Climate Center, www.wrcc.dri.edu/

(Image 11)- Precipitation Probability in a One-Day Period based on the Time Period August 1, 1984- December 31, 2008



Source: Western Regional Climate Center, www.wrcc.dri.edu/

Likeliness of Future Occurrence:

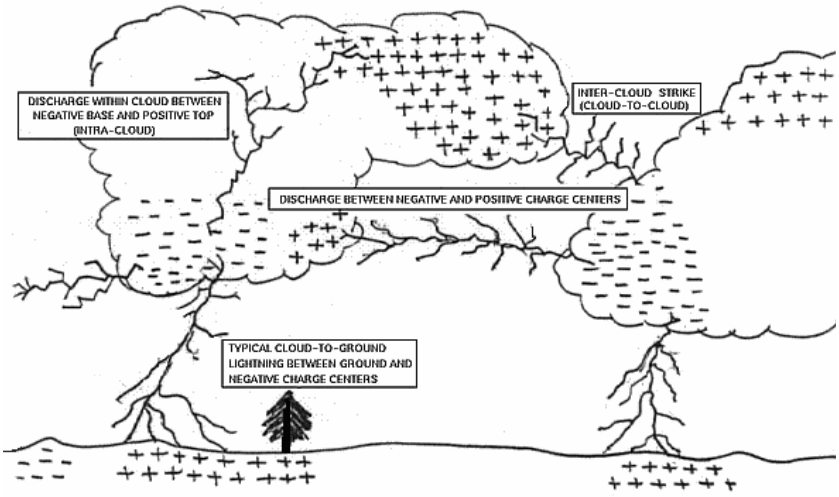
It is **highly likely** that the City of Westminster will experience severe rainstorms in the future. Severe storms such as these often occur in the spring and summer months, and are often accompanied by thunderstorms and can potentially result in tornadoes.

4.13-Severe Weather: Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes with an average of about four. The length and duration of each lightning stroke vary, but typically average about 30 microseconds. Lightning is one of the more dangerous weather hazards in the United States and in Colorado. Each year, lightning is responsible for deaths, injuries, and millions of dollars in property damage, including damage to buildings, communications systems, power lines, and electrical systems. Lightning also causes forest and brush fires and deaths and injuries to livestock and other animals. According to the National Lightning Safety Institute, lightning causes more than 26,000 fires in the United States each year. The institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be in excess of $6 billion per year. Impacts can be direct or indirect. People or objects can be directly struck, or damage can occur indirectly when the current passes through or near it. Intra-cloud lightning is the most common type of discharge. This occurs between oppositely charged centers within the same cloud. Usually it takes place inside the cloud and looks from the outside of the cloud like a diffuse brightening that flickers. However, the flash may exit the boundary of the cloud, and a bright channel, similar to a cloud-to-ground flash *(see next)*, can be visible for many miles. Although not as common, cloud-to-ground lightning is the most damaging and dangerous form of lightning. Most flashes originate near the lower-negative charge center and deliver negative

charge to earth. However, a large minority of flashes carry positive charge to earth. These positive flashes often occur during the dissipating stage of a thunderstorm's life. Positive flashes are also more common as a percentage of total ground strikes during the winter months. This type of lightning is particularly dangerous for several reasons. It frequently strikes away from the rain core, either ahead or behind the thunderstorm. It can strike as far as 5 or 10 miles from the storm in areas that most people do not consider to be a threat. Positive lightning also has a longer duration, so fires are more easily ignited. And, when positive lightning strikes, it usually carries a high peak electrical current, potentially resulting in greater damage. The ratio of cloud-to-ground and intra-cloud lightning can vary significantly from storm to storm. Depending upon cloud height above ground and changes in electric field strength between cloud and earth, the discharge stays within the cloud or makes direct contact with the earth. If
the field strength is highest in the lower regions of the cloud, a downward flash may occur from cloud to earth. Using a network of lightning detection systems, the United States monitors an average of 25 million strokes of lightning from the cloud-to-ground every year. The lightning discharge process is illustrated in the figure below.

(Image 12)-Lightning Discharge Process:

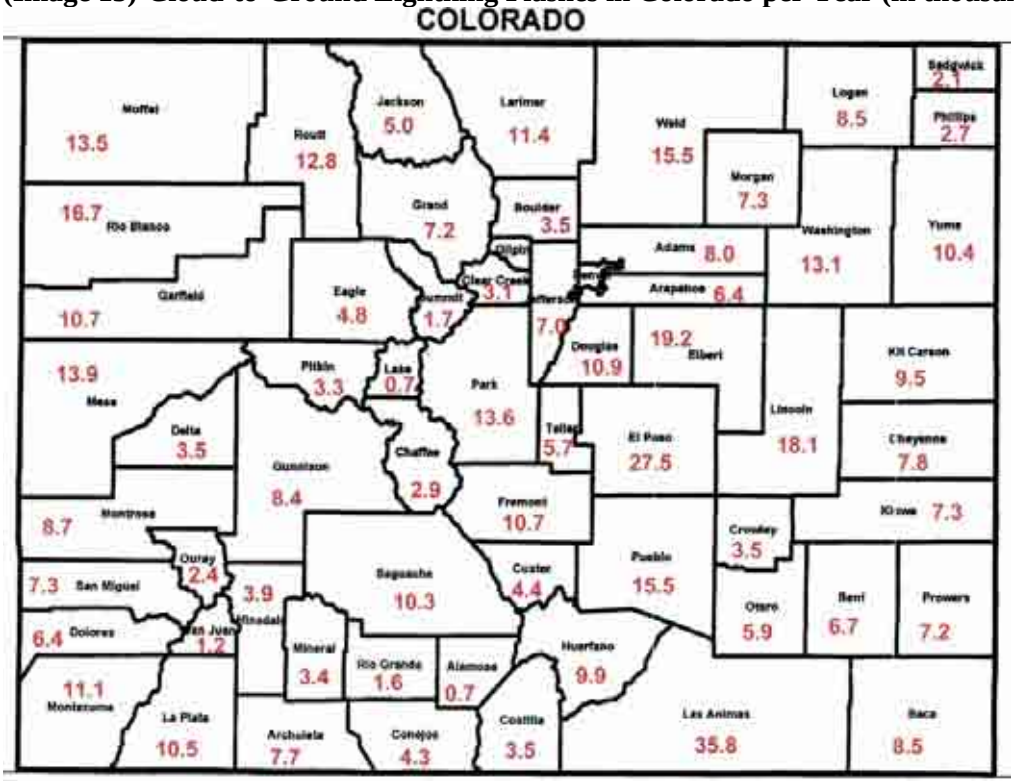


Source: http://thunder.msfc.nasa.gov/primer/primer3.html
The lower part of a thundercloud is usually negatively charged. The upward area is usually positively charged. Lightning from the negatively charged area of the cloud generally carries a negative charge to earth and is called a negative flash. A discharge from a positively charged area to earth produces a positive flash.

Past Occurrences

Data from the National Lightning Detection Network ranks Colorado 31st in the nation (excluding Alaska and Hawaii) with respect to the number of cloud-to-ground lightning flashes with an average number of 517,217 flashes per year (based on data collected between 1996 and 2005). The figure below shows the estimated number of cloud-to-ground lightning flashes (in thousands) in Colorado per year. Westminster has an average of 7,500 flashes per year.

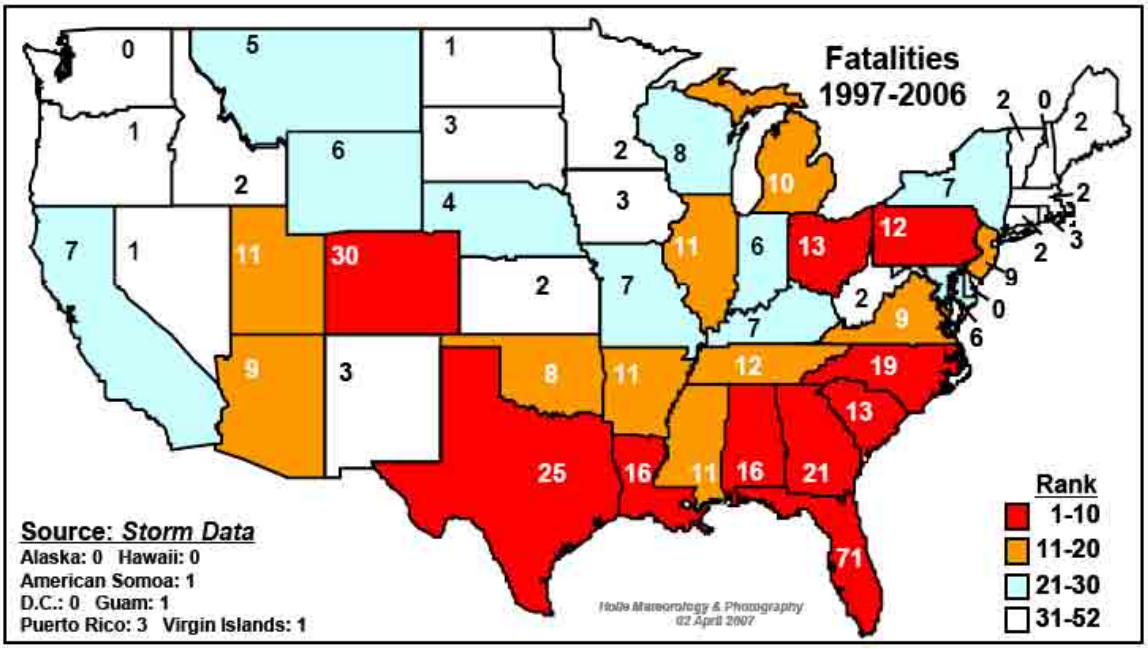
(Image 13)-Cloud-to-Ground Lightning Flashes in Colorado per Year (in thousands), 1996-2004



Source: National Weather Service, www.crh.noaa.gov/pub/?n=/ltg/cg_county_co.php

According to the National Weather Service, an average of 62 people are killed each year by lightning in the United States. In 2006, there were 47 confirmed deaths and 246 confirmed injuries. The true injury number is likely higher than this, because many people do not seek help, and not all lightning-related injuries are reported as such by doctors. U.S. lightning statistics compiled by the National Oceanic and Atmospheric Administration between 1959 and 1994 indicate that most lightning incidents occur during the summer months of June, July, and August and during the afternoon hours from between 2 and 6 p.m. The figure below shows state-by-state lightning deaths between 1997 and 2006. Colorado ranks second for the number of deaths at 30. Only Florida, with 71 deaths, had more. Texas followed Colorado with 25 deaths. In 2006, there were 5 lightning deaths and 15 reported lightning injuries in Colorado.

(Image 14)-Lightning Fatalities in the United States, 1997-2006



Source: National Weather Service, http://www.lightningsafety.noaa.gov/

According to the State of Colorado Natural Hazard Mitigation Plan, a study determined that 1 out of 52 lightning flashes results in an insurance claim. Data from the National Climatic Data Center identified 27 lightning events in Westminster between January 1, 1985, and May 31, 2009. Again, this number is the average between occurrences in Adams County (17) and Jefferson County (37).

Likelihood of Future Occurrences:

Highly Likely: Given the history of lightning occurrences in Colorado and the Westminster area, lightning is an annual occurrence and will continue to be considered a hazard to the City.

4.14-Tornadoes

Tornadoes may effect The City of Westminster. Tornadoes form when cool, dry air sits on top of warm, moist air. In the plains areas of Colorado, this most often happens in the spring and early summer (i.e., May, June, and July) when cool, dry mountain air rolls east over the warm, moist air of the plains. Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes are the most powerful storms that exist. They can have the same pressure differential that fuels 300-mile-wide hurricanes across a path only 300-yards wide or less.

(Image 15)

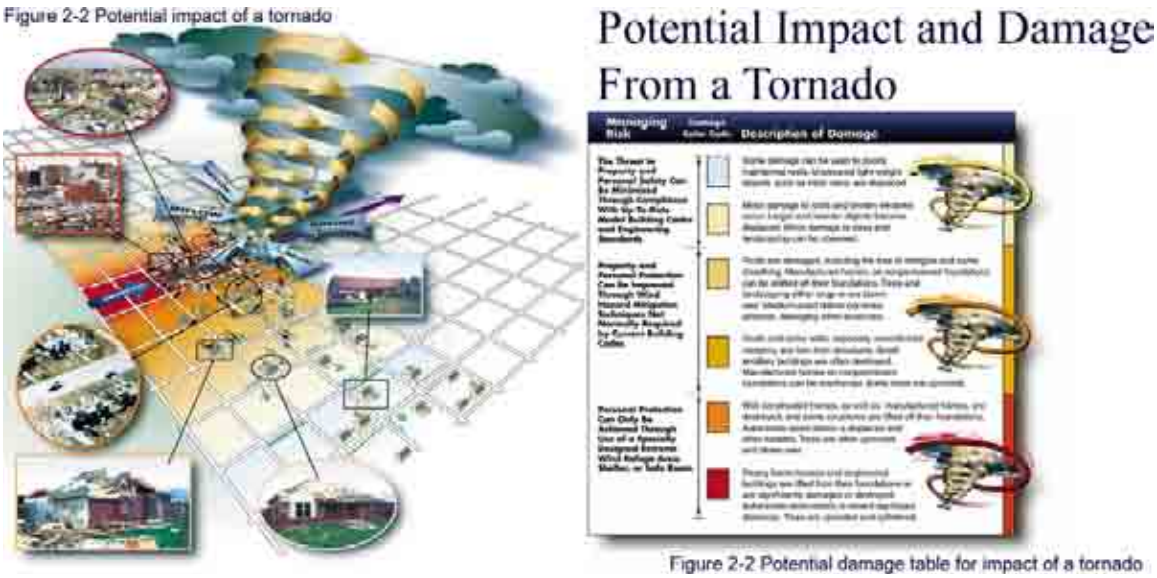


Figure 2-2 Potential damage table for impact of a tornado

Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis, better correlation between damage and wind speed. It is also more precise because it takes into account the materials affected and the construction of structures damaged by a tornado. Table 7 shows the wind speeds associated with the original Fujita scale ratings and the damage that could result at different levels of intensity. Table 8 shows the wind speeds associated with the Enhanced Fujita Scale ratings. The Enhanced Fujita Scale's damage indicators and degrees of damage can be found online at *www.spc.noaa.gov/efscale/ef-scale.html.*

Fujita (F) Scale Fujita Scale Wind Estimate (mph) Typical Damage F0 < 73 Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged. F1 73-112 Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads. F2 113-157 Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground. F3 158-206 Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown. F4 207-260 Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated. F5 261-318 Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.
Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/f-scale.html

(Table 8)-Enhanced Fujita Scale

Enhanced Fujita (EF) Scale	Enhanced Fujita Scale Wind Estimate (mph)
EF0	65-85
EF1	86-110
EF2	111-135
EF3	136-165
EF4	166-200
EF5	Over 200

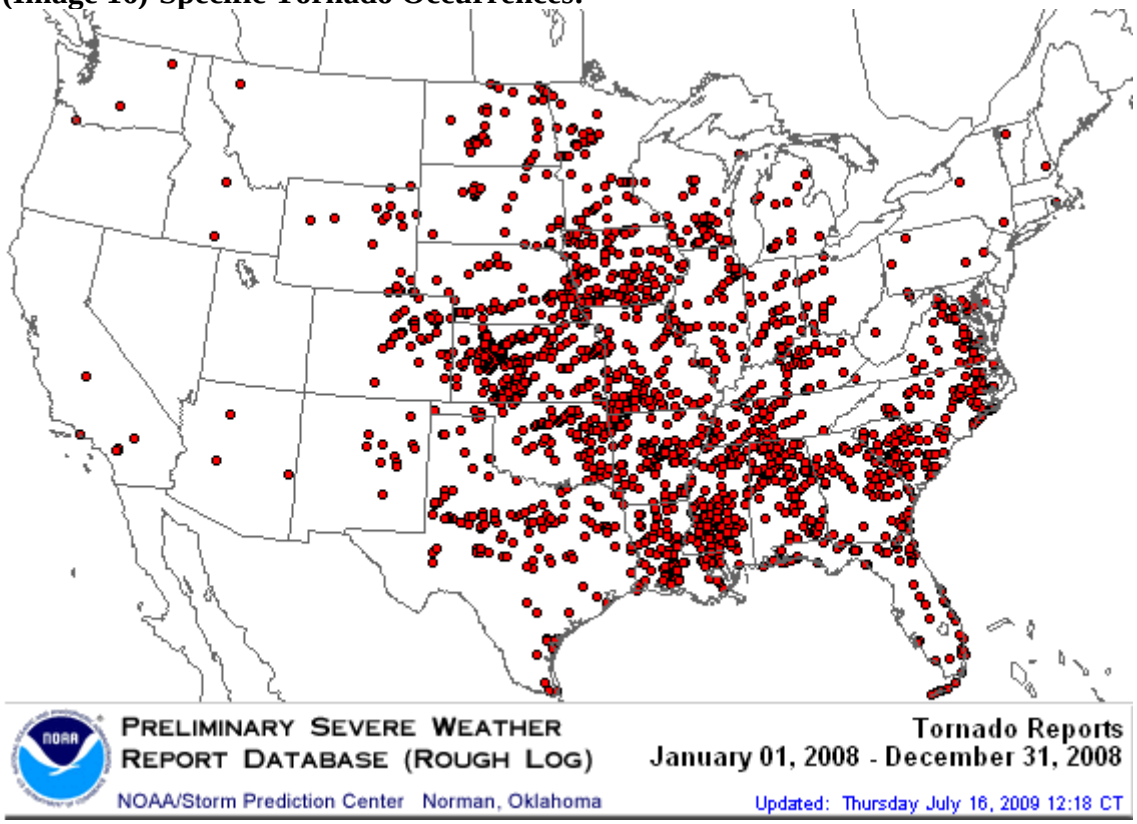
Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/ef-scale.html

Tornadoes can cause damage to property and loss of life. While most tornado damage is caused by violent winds, most injuries and deaths result from flying debris. Property damage can include damage to buildings, fallen trees and power lines, broken gas lines, broken sewer and water mains, and the outbreak of fires. Agricultural crops and industries may also be damaged or destroyed. Access roads and streets may be blocked by debris, delaying necessary emergency response. According to the Denver Museum of Nature and Science, Colorado's tornado activity rivals that of Tornado Alley. Nevertheless, Colorado tornadoes tend to be small, short-lived, and relatively
weak as compared with tornadoes in the plains states. Statistics indicate that Colorado tornadoes last only a few minutes, are generally only about 100 yards in diameter at the surface, and have an average path length of 1½ miles. Wind speeds appear to average 100 mph or less. Table 9 shows tornado activity in Colorado between 1975 and 2000 as reported by the National Oceanic and Atmospheric Administration (NOAA) Storm Prediction Center:

(Table 9)-Colorado Tornado Activity, 1975-2000:

Category	Occurrence (%)	Mean Path Length (Miles)
F0	25.5	1.2
F1	37.3	2.6
F2	2.6	5.4
F3	9.3	10.0
F4	2.0	27.2
F5	0.3	35.5

(Image 16)-Specific Tornado Occurrences:



Likelihood of Future Occurrences:
Because the City of Westminster has not had any tornadoes that have caused damages, the likelihood of a tornado occurring within the City is **unlikely**. However, Westminster is far enough east of the Front Range that the possibility for tornado activity can not be ruled out. Surrounding communities have had tornadic activity in the past, setting Westminster up for a possible occurrence.

4.15 Windstorms:

High winds are a frequent occurrence throughout the City of Westminster. High winds can result in property damage and injury. Strong gusts can rip roofs from buildings, snap power lines, shatter windows, down trees, and sandblast paint from cars. Other associated hazards include utility outages, arcing power lines, debris blocking streets, dust storms, and occasional structure fires. The peak of the wind season is December and January, but downslope windstorms have been recorded in every month except July. The table below
provides a scale which describes the damaging affects of wind speed.

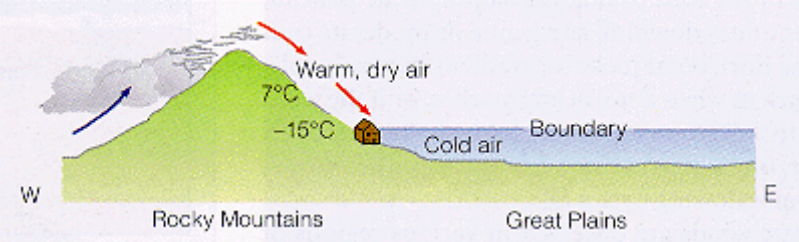
(Table 10)

Wind Speed (mph)	Description—Visible Condition
0	Calm; smoke rises vertically
1-4	Light air; direction of wind shown by smoke but not by wind vanes
4-7	Light breeze; wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle breeze; leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate breeze; raises dust and loose paper; small branches are moved
19-24	Fresh breeze; small trees in leaf begin to sway; crested wavelets form on inland water
25-31	Strong breeze; large branches in motion;with difficulty telephone wires whistle; umbrellas used
32-38	Moderate gale whole trees in motion; inconvenience in walking against wind
39-46	Fresh gale breaks twigs off trees; generally impedes progress
47-54	Strong gale slight structural damage occurs; chimney pots and slates removed
55-63	Whole gale trees uprooted; considerable structural damage occurs
64-72	Storm very rarely experienced; accompanied by widespread damage
73+	Hurricane devastation occurs

Chinook Winds

Because of Westminster's geographic location, it sometimes experiences the effects of the violent, down slope winds that rush down the mountains and effecting the Denver Foothill area, potentially gusting to the east. These winds are referred to as Chinook winds. These down slope winds, typically warm and dry, occur in areas where mountains stand in the path of strong air currents. These warm, down slope winds occur when the winds blow across the Continental Divide from the west and descend the foothills and blow out to Westminster (*see image 17*). This is because it is the pressure difference across Colorado that moves the air, with the wind blowing from high to low pressure, and with the speed depending on the magnitude of the force that drives the wind. During these Chinooks, wind speeds can reach extreme values and have potentially damaging effects.

(Image 17)



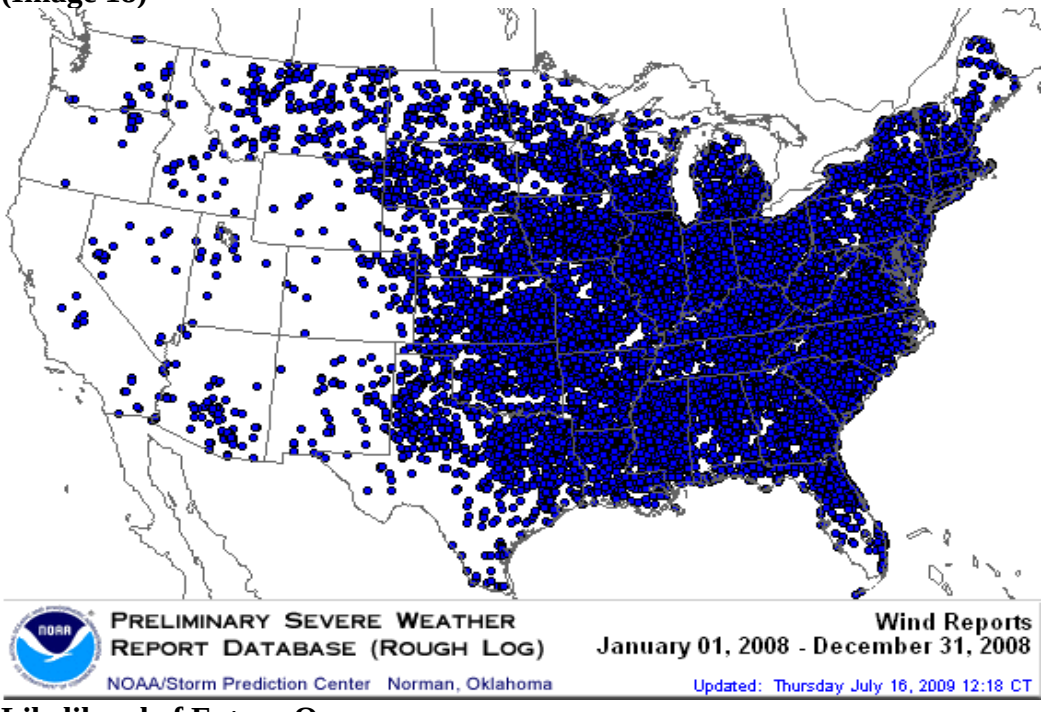
Bora Winds

Bora winds, down slope winds that replace relatively warm light wind conditions with cold temperatures and strong wing gusts may also be observed in Westminster. Bora winds that strike Westminster blow from the west, are relatively dry, but are also cold. The arrival of a Bora in Westminster can be similar to the onset of a Chinook, with strong westerly, but colder and drier air, whereas a Chinook brings warmer and drier air. Generally, Bora winds are less extreme than winds generated during Chinook events.

Past Occurrences:

According to the National Climatic Data Center, Adams and Jefferson Counties experienced 24 storms that had wind speeds of over 50 knots since 1985. However, the NCDC groups thunderstorms and high wind storms together in one category. Therefore, the 24 recorded storms are only representative of storms that had recorded wind speeds. Also, because Westminster is located in both Adams and Jefferson Counties, the number is an average from both sets of data.

(Image 18)



Likelihood of Future Occurrences:

It is **highly likely** that the City of Westminster will experience sever windstorms given the historical information for previous occurrences.

4.16- Severe Weather: Winter Storms

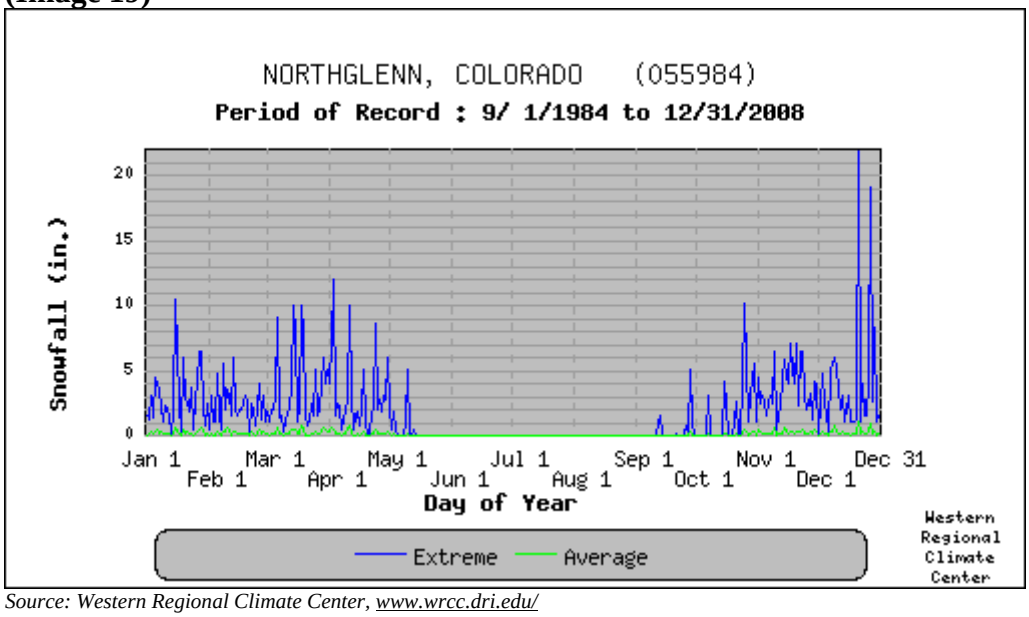
Winter storms can include heavy snow, ice, and blizzard conditions. Heavy snow can immobilize a region, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. Accumulations of snow can collapse roofs and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, damage repair, and business losses can have a tremendous impact on cities and towns.

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days until damage can be repaired. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians. Some winter storms are accompanied by strong winds, creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chills. Strong winds with these intense storms and cold fronts can knock down trees, utility poles, and power lines. Blowing snow can reduce visibilities to only a few feet in areas where there are no trees or buildings. Serious vehicle accidents can result with injuries and deaths. Winter storms in Westminster, including strong winds and blizzard conditions can result in localized power and phone outages and closures of streets, highways, schools, businesses, and nonessential government operations. People can also become isolated from essential services in their homes and vehicles. A winter storm can escalate, creating life threatening situations when emergency response is limited by severe winter conditions. Other issues associated with severe winter weather include the threat of physical overexertion that may lead to heart attacks or strokes. Snow removal costs can also impact budgets significantly. Heavy snowfall during winter can also lead to flooding or landslides during the spring if the area snowpack melts too quickly.

Past Occurrences

Westminster receives snowfall on a regular seasonal basis, predominantly from October through April. The following summarizes the effects of snow in the City of Westminster based on data from the Western Regional Climate Center. According to the Western Regional Climate Center, for the period of record of August 1st- April 30th, 2007, the average annual total snowfall for the Westminster area was 41.6 inches. The two snowiest months were November and December with 7.24 and 7.37 average inches of snow, respectively. January was the next snowiest month with an average snowfall of 6.55 inches; other snowy months included March with 6.94 inches and April with 5.94 inches, on average. The highest recorded monthly snowfall for the period of record was 32.1 inches for the month of December. The highest annual snowfall for the area was 77 inches in 2006-2007.

(Image 19)



Source: Western Regional Climate Center, www.wrcc.dri.edu/

(Table 10)
Westminster Daily Snowfall Average and Extreme, August 1, 1984-April 30, 2007 -*wrcc.dri.edu.*

YEAR(S)	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN
1983-84	0.00 z	0.00 z	0.00 Z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00
1984-85	0.00 z	0.00 z	1.00	6.40	0.00	3.00	6.00	6.00	5.50	2.00	0.00	0.00	29.90
1985-86	0.00	0.00	6.00	0.00	15.50	13.50	1.00	6.80	1.00	13.00	0.00	0.00	56.80
1986-87	0.00	0.00	0.00	0.00 z	11.50	2.50	14.50	12.90	6.80	3.00	0.00	0.00	51.20
1987-88	0.00	0.00	0.00	0.00	7.00	30.50	0.00 z	0.00 z	8.00	1.50	0.00	0.00	47.00
1988-89	0.00	0.00	0.00	0.00	1.00	6.00 b	14.70	0.00 z	0.00 z	0.00 z	0.00	0.00	21.70
1989-90	0.00	0.00	1.00	2.00 b	1.50	8.80	7.00	9.00 a	15.90	4.00	0.00	0.00	49.20
1990-91	0.00	0.00	0.00	4.00	10.50	4.00	5.30	0.00	1.70	10.00	0.00	0.00	35.50
1991-92	0.00	0.00	0.00	9.00	27.80	1.00	6.00	0.00	1.70 c	0.00	0.00	0.00	45.50
1992-93	0.00	0.00	0.00	0.00	18.30	7.70	3.50	8.30	1.50	0.80 a	0.00	0.00	40.10
1993-94	0.00	0.00	1.50	4.00	14.20	4.00	6.50	8.80 a	5.80	9.80	0.00	0.00	54.60
1994-95	0.00	0.00	0.10	0.00	15.80	2.40	2.80	7.30	3.80	7.30	0.00	0.00	39.50
1995-96	0.00	0.00	0.00	0.00	5.30 b	0.10	10.40	2.60	6.70	2.00 a	0.00	0.00	27.10
1996-97	0.00	0.00	0.90	1.50	0.80 c	3.00	9.30 b	10.50	1.40	12.70	0.00	0.00	40.10
1997-98	0.00	0.00	0.00	14.20 a	8.90	9.10	2.80 j	2.10	15.20 j	12.50 b	0.00 t	0.00 u	46.80
1998-99	0.00	0.00	0.00	0.00	5.10 e	8.10	3.80 e	1.20 a	4.00 f	10.10 a	0.00	0.00 a	28.30
1999-00	0.00	0.00 f	2.00 C	0.00 e	7.00 g	6.80 f	2.10	2.00	11.50	3.80	0.00	0.00	21.40
2000-01	0.00	0.00	0.00	0.00	3.20	6.00	10.30	8.90 a	11.10	14.60	2.80 b	0.00	56.90
2001-02	0.00	0.00	0.00	0.10	2.20	2.00 b	6.00	5.90	12.10	0.00	0.00	0.00	28.30
2002-03	0.00	0.00	0.00	6.90	4.00 b	0.10	0.00	6.60 b	20.30	2.30	6.00	0.00	46.20
2003-04	0.00	0.00	0.00	0.00	1.20	2.50	9.30	4.00	3.00 c	5.00	2.50	0.00	27.50
2004-05	0.00	0.00	0.00	0.00	12.00 a	2.50	6.00	0.00 a	5.10	9.40	0.00	0.00	35.00
2005-06	0.00	0.00	0.00	0.00	0.00	0.90	3.10 a	3.60 a	2.50 c	0.00	0.00	0.00	10.10
2006-07	0.00 a	0.00	0.00	9.20 a	3.30	32.10	16.40	3.40	11.90	1.00	0.00	0.00	77.30
2007-08	0.00	0.00	0.00	0.00	2.60	20.20	2.50	6.50	8.80	5.10	0.00	0.00	45.70
2008-09	0.00	0.00	0.00	0.00	2.00	6.80	4.10	1.40	6.50	12.60	0.00	0.00	33.40
Period of Record Statistics													
MEAN	0.00	0.00	0.50	2.39	7.24	7.37	6.55	5.12	6.94	5.94	0.47	0.00	**41.60**
S.D.	0.00	0.00	1.27	3.94	7.13	8.68	4.43	3.66	5.14	4.93	1.40	0.00	**14.86**
SKEW	0.00	0.00	3.49	1.61	1.17	1.88	0.74	0.23	0.91	0.35	3.07	0.00	**0.27**
MAX	0.00	0.00	6.00	14.20	27.80	32.10	16.40	12.90	20.30	14.60	6.00	0.00	**77.30**
MIN	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	1.00	0.00	0.00	0.00	**10.10**

Likelihood of Future Occurrences
Highly Likely: Based on historical data, winter storms are an annual occurrence in the Westminster area. The potential exists for a severe winter storm to occur during any year in the City of Westminster due to its geographic location.

4.17-Wildfire/Grassland Fire

Generally, the fire season extends from spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in air and fuel. These conditions, especially when combined with high winds and years of drought, increase the potential for wildfire to occur. The wildfire risk is predominantly associated with open space and grasslands within the City. A fire along this wildland-urban interface (such as Rocky Flats Open Space area) can result in major losses of property and structures. Significant wildfires can also occur in heavily populated areas. Generally, there are three major factors that sustain wildfires and predict a given area's potential to burn. These factors are fuel, topography, and weather.

- **Fuel**—Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and in Westminster may include everything from dead tree needles and leaves, twigs, and branches, to brush, and cured grasses. Also to be considered as a fuel source are manmade structures, such as homes and associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Light fuels such as grasses burn quickly and serve as a catalyst for fire spread. The volume of available fuel is described in terms of fuel loading. Certain areas in Westminster may be vulnerable to fires as a result of dry dense vegetation. Fuel is the only factor that is under human control.
- **Topography**—An area's terrain and land slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- **Weather**—Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out the fuels that feed the wildfire creating a situation where fuel will more readily ignite and burn more intensely. Wind is the most treacherous weather factor. The greater the wind, the faster a fire will spread, and the more intense it will be. Winds can be significant at times in Westminster. In addition to wind speed, wind shifts can occur suddenly due to temperature changes. Lightning also ignites wildfires. Drought conditions contribute to concerns about wildfire vulnerability. During periods of drought, the threat of wildfire increases. Potential losses from wildfire include human life; structures and other improvements; natural and cultural resources; quality and quantity of the water supply; recreational opportunities; and economic losses. Smoke and air pollution from wildfires can be a severe health hazard.

Past Occurrences
In 2006, a grassland fire came off of the Rocky Flats Conservation Area. Because of this, endangered neighborhoods were fully evacuated. Grassland Fires are often ignited by passing trains, but most of these events are handled without injury, property loss or the need to evacuate.
Likelihood of Future Occurrences:

The City of Westminster is **unlikely** to experience significant grassland fires. There are areas adjacent to the City that have a higher risk of grassland fires posing the threat that a fire could move from adjacent interface areas into the City. Because the City has small but frequent sections of open space, a large grassland fire would be less likely to occur. The City also has minimal Wildland Urban Interface zones which protect it from significant fire events.

4.18-Assessing Vulnerability

Requirement §201.6(c)(2)(ii):
*[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*
[The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.
Requirement §201.6(c)(2)(ii)(A):
The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.
Requirement §201.6(c)(2)(ii)(B):
[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.
Requirement §201.6(c)(2)(ii)(C):
[The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

With the City of Westminster's hazards identified and profiled, the HMPC conducted a vulnerability assessment to describe the impact that each hazard would have on the City of Westminster. The vulnerability assessment quantifies, to the extent feasible, assets at risk to natural hazards and estimates potential losses. This vulnerability assessment followed the methodology described in the FEMA publication *Understanding Your Risks—Identifying Hazards and Estimating Losses*. The vulnerability assessment first describes the total vulnerability and values at risk and then discusses vulnerability by hazard.

4.19-Total Vulnerability and Values at Risk

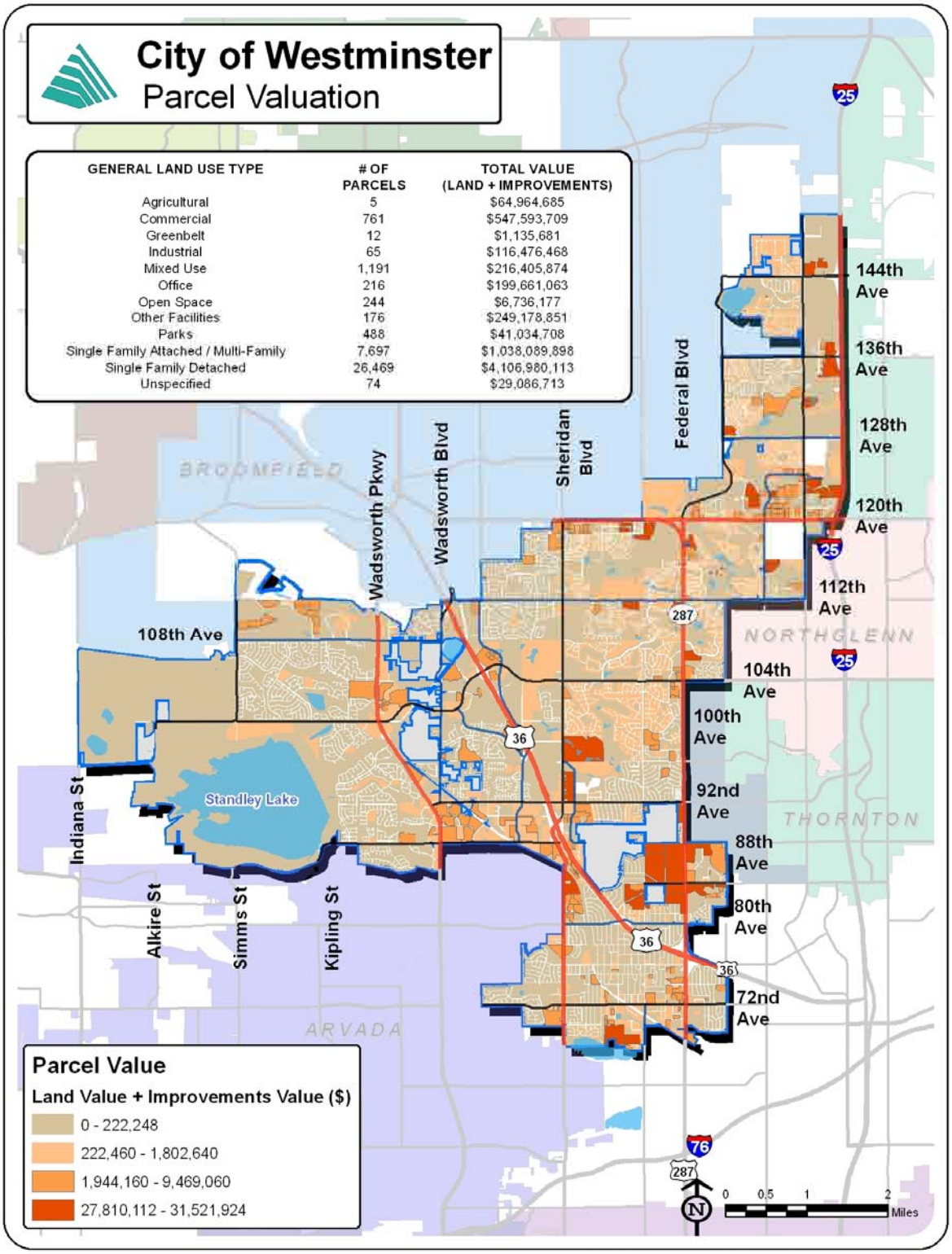
As a starting point for analyzing the City of Westminster's vulnerability to identified hazards, the HMPC used a variety of data to define a baseline against which all disaster impacts could be compared. If a catastrophic disaster were to occur in the City, the following information describes significant assets at risk. Data used in this baseline assessment included:

- Total values and assets at risk,
- Critical facility inventory,
- Development trends.

Total Values and Assets at Risk

The Adams and Jefferson County Assessor's Offices in correlation with the City of Westminster's Community Development Department provided data to support an analysis of total values and assets at risk in the City of Westminster. It is important to keep in mind in the

event of a disaster; it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss. The following map shows The City of Westminster Parcel Valuation by land use code.


City of Westminster
Parcel Valuation
GENERAL LAND USE TYPE | # OF PARCELS | TOTAL VALUE (LAND + IMPROVEMENTS)
Agricultural | 5 | $64,964,685
Commercial | 761 | $547,593,709
Greenbelt | 12 | $1,135,681
Industrial | 65 | $116,476,468
Mixed Use | 1,191 | $216,405,874
Office | 216 | $199,661,063
Open Space | 244 | $6,736,177
Other Facilities | 176 | $249,178,851
Parks | 488 | $41,034,708
Single Family Attached / Multi-Family | 7,697 | $1,038,089,898
Single Family Detached | 26,469 | $4,106,980,113
Unspecified | 74 | $29,086,713
BROOMFIELD
Wadsworth Pkwy
Wadsworth Blvd
Sheridan Blvd
Federal Blvd
144th Ave
136th Ave
128th Ave
120th Ave
112th Ave
NORTHGLENN
104th Ave
100th Ave
92nd Ave
THORNTON
88th Ave
80th Ave
72nd Ave
108th Ave
Standley Lake
Indiana St
Alkire St
Simms St
Kipling St
ARVADA
25
287
36
76
Parcel Value
Land Value + Improvements Value ($)
0 - 222,248
222,460 - 1,802,640
1,944,160 - 9,469,060
27,810,112 - 31,521,924
N
0 0.5 1 2
Miles

July 2010

Critical Facilities at Risk

As described earlier, critical facilities are located throughout the City of Westminster. The City does not have a current mapped inventory of these facilities. However, the City has a building footprint GIS layer that includes a basic descriptive field of building types. From this field, the following building types could be extracted:

- Public Safety Center (Police and Fire Departments including)
- Westminster Fire Department Stations 1-6
- Hospital
- Schools
- Municipal government
- Chemical manufacturing
- Industrial
- Water treatment
- Wastewater treatment plant
- Government buildings

Using these buildings that fit the critical facility definitions previously described, a GIS overlay analysis identified that there are no critical facilities with in the mapped 100-year floodplain.

National Flood Insurance Program Model Flood Damage Prevention Ordinance Critical Facility Definition:

Language from the National Flood Insurance Program Model Flood Damage Prevention Ordinance defines a critical facility as "a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools; nursing homes; hospitals; police, fire, and emergency response installations; and installations that produce, use or store hazardous materials or hazardous waste."

City of Westminster's Natural Hazard Mitigation Plan Critical Facilities Definition

For purposes of this plan, the HMPC agreed to the following critical facility definition for the protection of critical facilities vulnerable to the affects of natural hazards: "Critical facility" means any property that, if flooded, would result in severe consequences to public health and safety or a facility which, if unusable or unreachable because of flooding, would seriously and adversely affect the health, safety, and welfare of the public. Critical facilities include, but are not limited to (1) structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic, and/or water-reactive materials; (2) hospitals, nursing homes and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood; (3) police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during, and after a flood; and (4) public and private utility facilities that are vital to maintaining or restoring normal services to flooded areas before, during, and after a flood. This definition will be used to inventory and map critical facilities for future plan updates.

Of significant concern with respect to any disaster event is the location of critical facilities in the City of Westminster. For this plan, various definitions and approaches to defining critical facilities were evaluated. These included the following:

- City of Westminster Critical Facilities List
- FEMA critical facilities definition

• National Flood Insurance Program Model Flood Damage Prevention Ordinance critical facility definition

The City Emergency Management Coordinator provided the following list of critical facilities in the City of Westminster. The list below covers many of the facility types defined by FEMA.

4.20-City of Westminster Critical Facilities

Government Office Buildings:
City Hall
Public Safety Center

Utilities
Semper Water Treatment Facility
North West Water Treatment Facility
Big Dry Creek Waste Water Facility
Big Dry Creek Reclaim Water Treatment Facility
Tri-State Power Distribution Center

Media
City of Westminster Channel 8
City Edition Newspaper

Emergency Services
Fire stations 1-6
Westminster Public Safety Center (Fire and Police Departments)

Institutions
Front Range Community College
DeVry University
University of Phoenix extension

Recreation
City Park Recreation Center
City Park Fitness Center
Swim and Fitness Center
Country Side Pool
West View Recreation Center
Mature Adult Center (MAC)

Transportation
U.S. 36
Westminster Center Park and Ride (RTD)
I-25

Health
St. Anthony's North
Kaiser Permanente

Water:
Standley Lake
Ketner Reservoir

Commercial/Industrial
Ball Corporation
LaFarge North America
Melco Industries
Tri-State Generation
Avaya
Atrato

FEMA Critical Facilities Definition

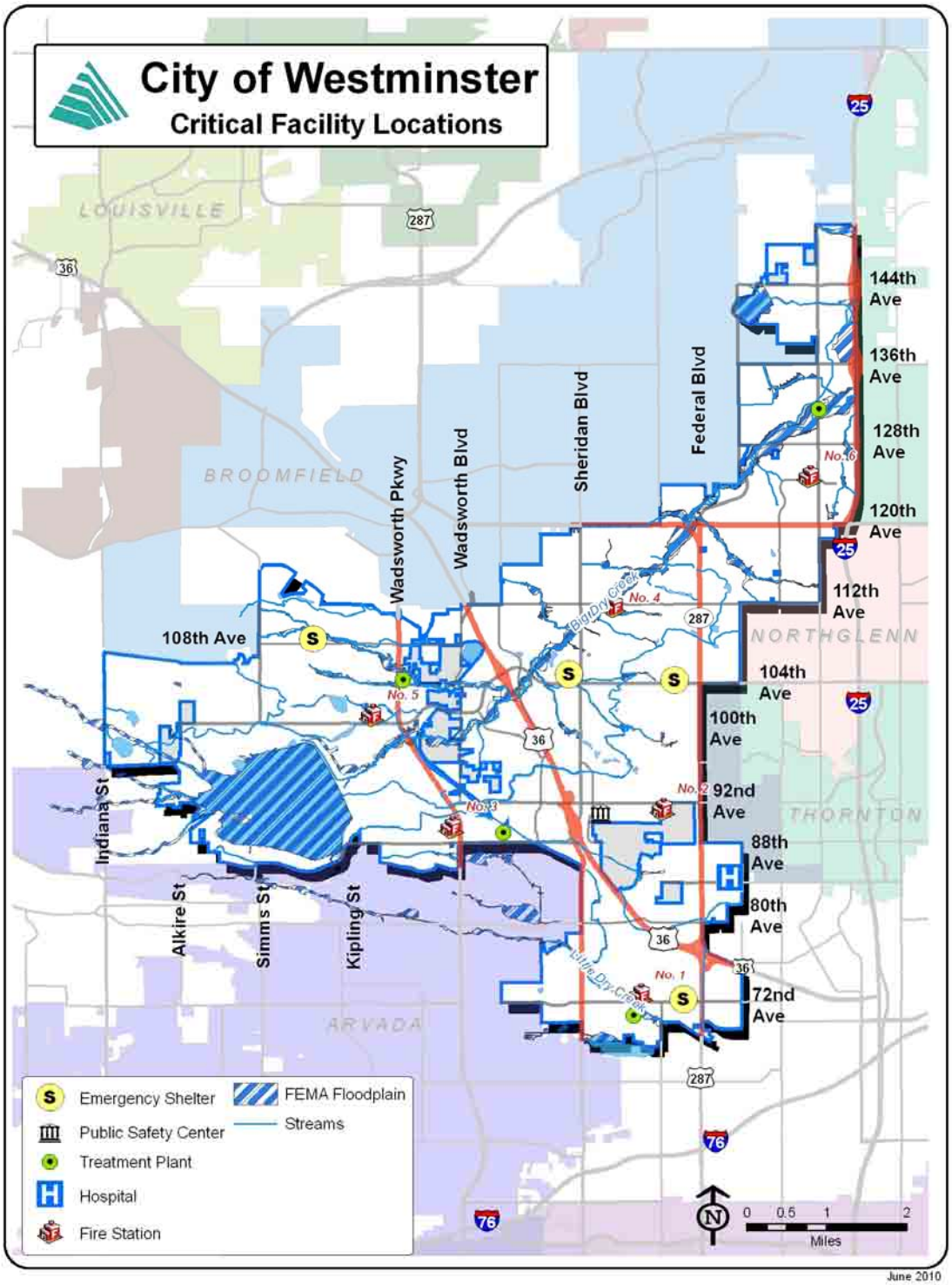
FEMA defines four kinds of critical facilities:

• Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic, and/or water-reactive materials

• Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a hazard event

• Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during, and after a hazard event

• Public and private utility facilities are vital to maintaining or restoring normal services to flooded areas before, during, and after a hazard event


City of Westminster
Critical Facility Locations
LOUISVILLE
BROOMFIELD
ARVADA
NORTHGLENN
THORNTON
287
36
25
76
144th Ave
136th Ave
128th Ave
120th Ave
112th Ave
104th Ave
100th Ave
92nd Ave
88th Ave
80th Ave
72nd Ave
108th Ave
Wadsworth Pkwy
Wadsworth Blvd
Sheridan Blvd
Federal Blvd
Indiana St
Alkire St
Simms St
Kipling St
Big Dry Creek
Little Dry Creek
No. 1
No. 2
No. 3
No. 4
No. 5
No. 6
Emergency Shelter
Public Safety Center
Treatment Plant
Hospital
Fire Station
FEMA Floodplain
Streams
N
0 0.5 1 2
Miles
June 2010

Cultural and Natural Resources at Risk
Cultural and natural resources are located throughout the City. Using the City's GIS layers for historic landmarks, it was determined that there are no historic landmarks located within the 100-year floodplain.

Development Trends:
Managing growth in the City of Westminster has long been a priority to retain the City's character and natural setting. In the 1950s, Westminster's population grew from 1,678 and during the 1960s, it reached 19,512. The U.S. Census Bureau estimated that by July 1, 2006, 104,889 people resided in the City. The estimated 2010 population increases the City's population very minimally. The 2010 population estimate is 109,838. In response to such rapid growth, the City of Westminster enacted a growth management program to slow down growth and the demand on water and sewer services. The City has also enacted special taxes to finance acquisition of 2,850 acres of open space around the City based on established community goals and policies as set forth in the *City of Westminster Comprehensive Land Use Plan.*
More recently, growth in Westminster has significantly slowed compared to recent years in large part due to City build-out. The City's current trend is moving toward property infill rather than annexation. The resulting development pressures are typically focused on existing areas within the City limits, often in the form of redevelopment. City zoning does not allow such infill development on high hazard areas of the City, including flood zones.

4.21 Vulnerability of the City to Specific Hazards

The population of Westminster has increased very minimally since the DRCOG plan. Further, the City is no longer annexing surrounding properties and is no longer expanding its boundaries or borders. Therefore, the risk of vulnerability from natural hazards is less of a concern as compared to when the City was in its growth cycle. The systems, procedures and regulations that the City had developed during its growth period, will continue to be used as the City moves towards infill development and re-development.

The Disaster Mitigation Act regulations require that the HMPC evaluate the risks associated with each of the hazards identified in the planning process. This section summarizes the possible impacts and outlines the vulnerability of the City to each of the hazards.

The hazards that the City considers are the following:

- **4.21 (A) Dam Failure**
- **4.21 (B) Drought**
- **4.21 (C) Earthquakes**
- **4.21 (D) Floods**
- **4.21 (E) Human Health Hazards**
  - **(E1)−** Pandemic Flu
  - **(E2)−** West Nile Virus
- **4.21 (F) Severe Weather**
  - **(F1)−** Hailstorms
  - **(F2)−** Heavy Rains/Storms
  - **(F3)−** Lightning
  - **(F4)−** Tornadoes
  - **(F5)−** Windstorms
  - **(F6)−** Winter Storms
- **4.21 (G) Wildland/Grassland Fires**

In section **4.3**, the City outlines each hazard's frequency of occurrence, likelihood of future occurrence and impact potential. To further understand each hazard, an estimate of the vulnerability of the City to each identified hazard follows. The City's vulnerability to each hazard can only be estimated when historical frequency, likelihood of future occurrence and impact is evaluated with the potential for life loss, special extent and or property damage or loss.

* Events that have a low historical frequency may also have a huge impact if they occur. For example, the City of Westminster has not had a significant tornado event, but if there was an occurrence, it would most likely have a significant impact to the City in terms of special extent of property loss, damage and life loss.

The section below seeks to portray the vulnerability of the City to each hazard while utilizing other important information such as:

- General hazard-related impacts, including impacts to life, safety, and health
- Insurance coverage, claims paid, and repetitive losses
- Values at risk (i.e., types, numbers, and value of land and improvements)

• Identification of critical facilities at risk
• Identification of cultural and natural resources at risk
• Overall community impact
• Development trends within the identified hazard area

Vulnerability and potential impacts from hazards that do not have specific mapped areas, such as drought and severe weather, are discussed in more general terms based on past events. The sections that follow present the estimated vulnerability analysis for the City of Westminster.

(A) Vulnerability to Dam Failures

Likelihood of Future Occurrence: Unlikely
Impact: High

Even though the City classifies the likelihood of future occurrence as unlikely because of past mitigation actions, and the fact that there have been no historical dam breaks within the City of Westminster, the impact if a dam were to break would be severe.

Dam failure flooding can occur as the result of partial or complete collapse of an impoundment. Dam failures often result from prolonged rainfall and flooding. The primary danger associated with dam failure is the high velocity flooding of those properties downstream of the dam. Standley Reservoir was built in 1909 and completed in 1919. The dam was enlarged in 1963, and was recently renovated to enhance dam stability and ensure safety while meeting future water demands. Ketner Reservoir, Woman Creek Reservoir, McKay Lake and Tepper Reservoir are other dams that serve the City of Westminster as well.

The Division of Water Resources runs the Dam Safety Program in Colorado. According to the State of Colorado Natural Hazards Mitigation Plan, Colorado has emergency action plans for 95 percent of the state-regulated high- and significant-hazard dams. Inundation maps for some dams have also been developed. High hazard dams are not listed due to the sensitive nature of this information.

(B) Vulnerability to Drought

Likelihood of Future Occurrence: Likely
Impact: Depends on length and severity of drought period

Because of the City's effort to plan for drought events, the vulnerability to the City from Drought is moderate. Restrictions and storage capacity help to lessen the vulnerability that a drought event would have on the City but the effects of a long-term severe drought could have significant economic impacts.

Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. A drought's effects impact various sectors in different ways and with varying intensities. Adequate water is the most critical issue. As an area's population continues to grow so will the demand for water. Based on historical information, the occurrence of drought in Westminster is cyclical, driven by weather patterns. Drought has occurred in the past and will continue to occur in the future. The periods of actual drought with adverse impacts can vary from short to long term; often the period between droughts is extended. Although an area may be under an extended dry period, defining when a drought occurs is a function of drought impacts to individual water users. Since 1893, Colorado has experienced roughly six multi-year droughts throughout the state. For Westminster, drought status can be determined by looking at several factors, including mountain snowpack, stream flows, water rights yields, soil moisture, spring

and summer and the influence of the weather on water demands within the municipal water system. During a drought year, the total volume of water flowing in streams from one spring snowmelt to the next spring snowmelt will be much lower than the volume of stream flow over the course of an average year. Agreements for Standley Reservoir serve to mitigate against the effects of a drought. Like most Colorado communities, Westminster depends on stored water most of the year. According to the City of Westminster Drought specialists, The City currently delivers about 22,500 acre feet of water (including reclaimed water) to customers in an average year. It is projected that the City will deliver about 33,500 acre feet of water in the future.

Water provided by the City serves purposes ranging from critical uses that require an assured supply, such as water for drinking or firefighting, to those uses which can tolerate occasional restrictions, such as outdoor irrigation or car washing. The City of Westminster obtains water from Clear Creek and Coal Creek drainage. Water flows into these water sources from Loveland Pass and is directed through a series of canals to Standley Reservoir. The City has 22,310 acre feet of raw water storage that feeds the city's demand. The vulnerability to the City of Westminster from drought is City wide. When necessary, water restrictions may be implemented which can help to mitigate the reductions in water supply. However, during drought periods and water restriction times, an increase in dry fuels and the potential for wildland/ grassland fires do exist. In evaluating the reliability of the City's water supply in times of drought, the 2003 drought plan established standards for the City that assures a reliable water supply to the community.

• As droughts increase in severity, the amount of restrictions may also increase to the point that outdoor water use is totally eliminated. According to the drought plan, the 2002-.2003 drought was considered to be a 1-in-300-year drought within the Loveland Pass and Colorado River basins and drainages. During the 2002 drought, the City implemented water use restrictions beginning in July. These restrictions provided for an every third day watering schedule, with maximum run times based on the type of sprinkler head. New landscape installations were restricted not allowed for that water year. A warning/violation system was implemented with a tiered fine system. Beginning October 1, 2002 no watering was allowed. In May of 2003 all restriction were lifted and only voluntary water restrictions remained in place. In 2004 the voluntary restrictions became guidelines.

Westminster is located in a semiarid climate, and drought is and will continue to be an expected part of the natural hydrologic cycle in the region. Because of this expectation, Westminster has developed tiered system for potential water restrictions given another severe drought period:

Four levels of drought are defined and specific recommendations for outdoor water savings are highlighted.

Level 1 is in response to a **mild** drought and would emphasize voluntary water conservation. Anticipated savings would be generally less than 10% over pre-declaration levels. Efforts would include:

- Customer education and marketing, focused on wise water use.
- A suggested two-day per week watering schedule.
- Voluntary maximum times per turf zone type, designed for plant health.
- Planting of new lawns would be discouraged.

Level 2 is for a **moderate** drought. At this level mandatory water restrictions designed to save 25% of total water use would be implemented. Suggested restrictions include:

- A mandatory two-day per week watering schedule.
- Mandatory time per zone type lawn watering maximums.
- Planting of new lawns would be prohibited, especially mid June through mid September.
- Large shooting fountains would be prohibited. All other ponds and water features are allowed.
- Car washing is allowed on the watering day using a hose with shutoff nozzle for the rinse, and a bucket for the wash. Commercial car washes would implement procedures to save 25% of the industry average water use by wash type.
- Watering trees and shrubs would be allowed as needed.

Level 3 is considered a **severe** drought. Suggested restrictions would be increased with a target savings of 40% of total water use and would include:

- Lowering the time allowed per zone type for lawn watering to survival levels.
- Planting of new lawns would be prohibited at any time.
- All water features would be prohibited except for ponds containing fish.
- Home car washing would not be allowed. Commercial car washes would implement procedures to save 40% of the industry average water use by wash type.
- Watering trees and shrubs would be allowed as needed.

Level 4 would be implemented in the event of an **extreme** drought. In an extreme drought the savings goal would be over 50% and all non-essential water use would be prohibited.

- No lawn watering.
- No water features.
- No residential or commercial car washing.
- Limited tree and shrub watering would be allowed.
- Indoor water use may be restricted.

Westminster plans its water supply based on stream-flow conditions as low as they were in 1954, the City's worst drought year on record. Summer 2002 stream flows were running more than 20 percent lower than stream flows in 1954.

(C) Vulnerability to Earthquakes

Likelihood of Occurrence: Unlikely

Impact: low/medium, dependent upon location of the epicenter.

The City of Westminster classifies it's self as having low vulnerability to earthquakes because of the type of built environment that is present in the City, it's geographic location in terms of far proximity to major earthquake faults and the City's adherence to building codes which make the

built environment less susceptible to damage. These factors, and the absence of historical events in the City allow for such a low vulnerability classification.

Earthquake vulnerability is primarily based upon population and the built environment. Urban areas in high hazard zones are the most vulnerable, while uninhabited areas are less vulnerable. The ability to accurately estimate the timing, location, and severity of future earthquake activity in Colorado is limited due to the lack of good historical data and the relative infrequent occurrence of earthquakes in Colorado. Ground shaking, the principal cause of damage, is the major earthquake hazard. Many factors affect the potential damageability of structures and systems from earthquake-caused ground motions. Some of these factors include proximity to the fault, direction of rupture, epicenter location and depth, magnitude, local geologic and soils conditions, types and quality of construction, building configurations and heights, and comparable factors that relate to utility, transportation, and other network systems. Ground motions become structurally damaging when average peak accelerations reach 10 to 15 percent of gravity, average peak velocities reach 8 to12 centimeters per second, and when the Modified Mercalli Intensity Scale is about VII (18-34 percent peak ground acceleration), which is considered to be very strong (general alarm; walls crack; plaster falls).

The U.S. Geological Survey's (USGS) Probabilistic Seismic Hazard Map of Colorado depicts a 2 percent probability over 50 years of shaking intensity. The City of Westminster lies in the range of 8-10 percent acceleration. Shaking is measured in a variety of ways, including peak ground acceleration, peak ground velocity, and spectral acceleration. This map is spectral acceleration at one second frequency. The reason for looking at different frequencies is due to building response. In general, taller buildings may experience more damage by energy released in longer waveforms due to the harmonics of building sway and ground shaking. Natural or artificially filled areas tend to experience amplified motions, liquefaction, and associated ground failures that can cause extensive damage. Subsurface soils in the City of Westminster vary and are site-specific. Fault rupture itself contributes very little to damage unless the structure or system element crosses the active fault. There are no known potentially active faults in the planning area. In general, newer construction is more earthquake resistant than older construction because of improved building codes and their enforcement. Manufactured housing is very susceptible to damage because rarely are their foundation systems braced for earthquake motions. Locally generated earthquake motions, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of un-reinforced masonry. Common impacts from earthquakes include damage to infrastructure and buildings (e.g., crumbling of un-reinforced masonry [brick], failure of architectural facades, rupturing of underground utilities, gas-fed fires, landslides and rock falls, and road closures). Earthquakes also frequently trigger secondary effects, such as dam failures, explosions, and fires that become disasters themselves.

If in the future earthquakes are deemed to be a significant risk to the City of Westminster, steps may be taken to obtain funds to complete a HAZUS report for the City. The State of Colorado's Natural Hazards Mitigation Plan includes a HAZUS report for the eastern Plains of Colorado. The report identified El Paso, Jefferson, Denver, Summit and Chaffee counties as having the greatest risk for losses (monetary and casualties). Although Westminster is partially in Jefferson County, the City is located on the eastern edge, away from the mountainous areas of Jefferson County, which are where the earthquake faults are located.

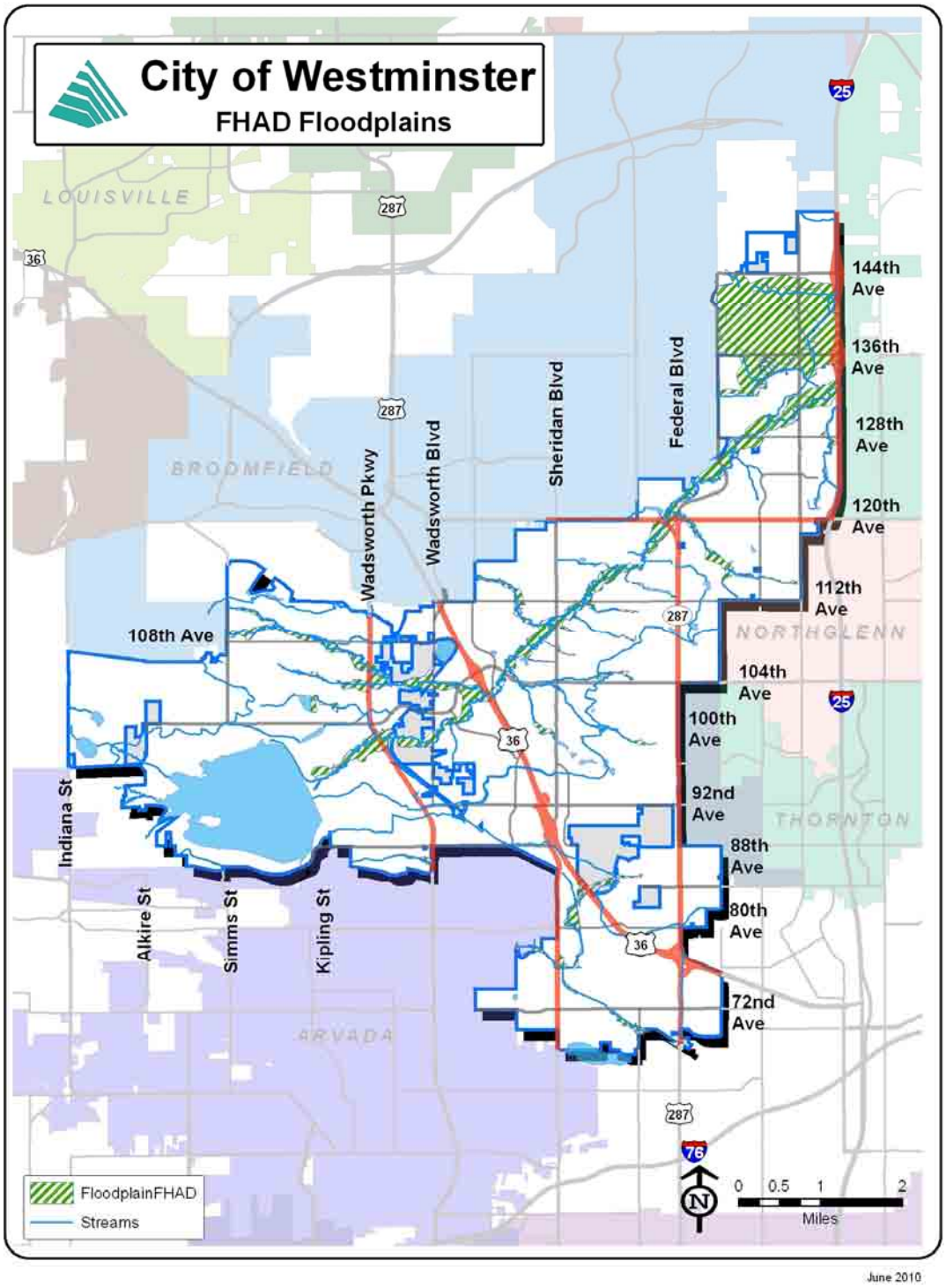
Development Trends
As Westminster is largely built out, exposure will remain relatively constant, except where redevelopment and infill development occurs. Any new construction is built to code in Westminster and should generally be able to withstand small earthquake events. This of course is dependent on the location of the epicenter relative to the City and the magnitude of the event.

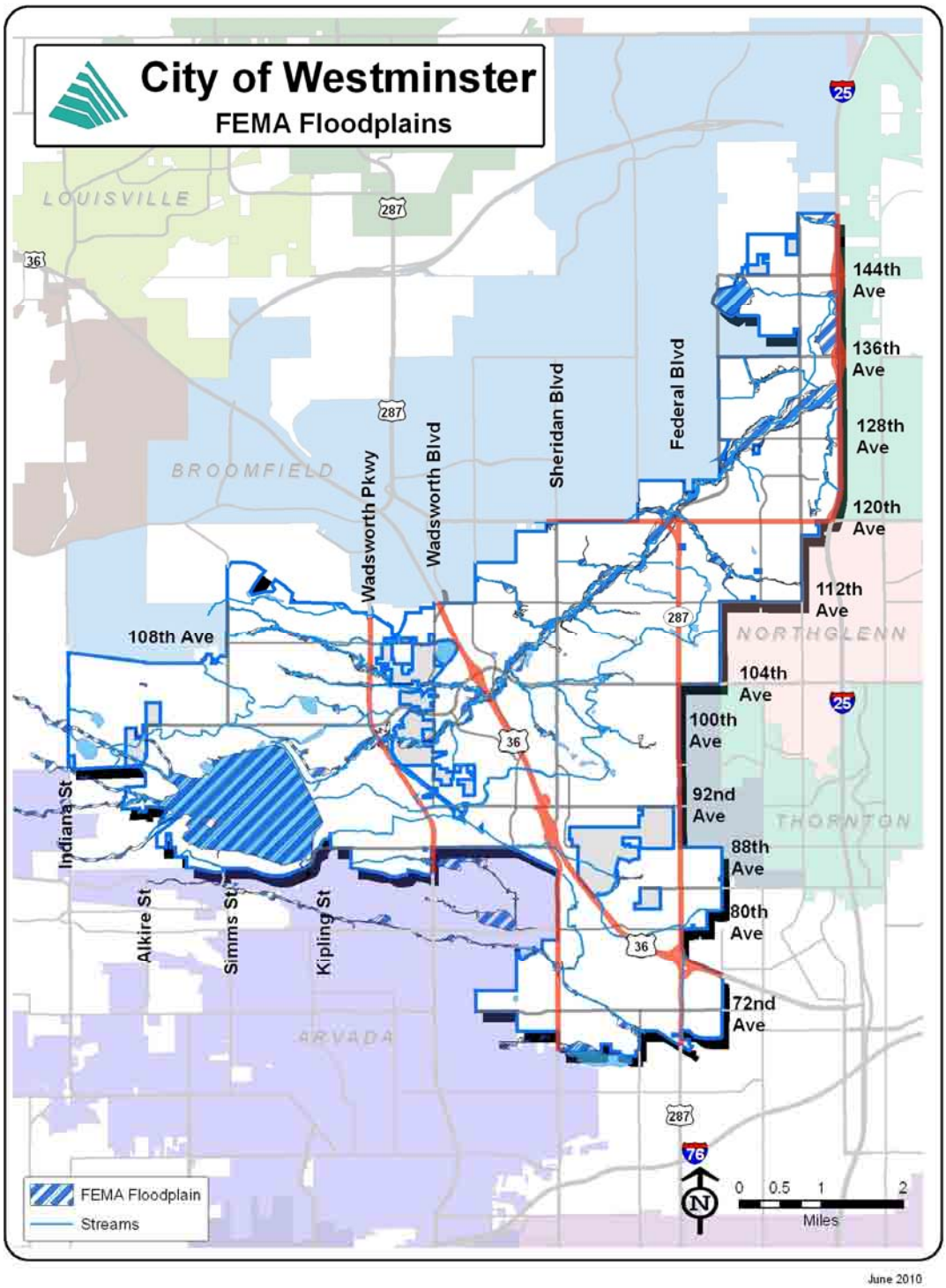
(D) Vulnerability to Floods
Likelihood: unlikely for riverine flooding, highly likely for street flooding events.
Impact: low for riverine, medium for street flooding
The City of Westminster considers the vulnerability it faces for a riverine flooding event to be low. This is because of the geographic landscape that the City resides upon. It is unlikely that the City will experience such a flooding event, therefore classifying the vulnerability of the City as low.
The City of Westminster considers the vulnerability if faces for a street flooding event to be moderate. In the event of an extremely large downpour of water over a short period of time, the City's drainage systems may become overwhelmed, causing street flooding. The City's Public Works and Engineering Department along with the City's GIS department has identified a mitigation action that would allow for mapping of impermeable vs. permeable grounds within the City to further address this perceived vulnerability.

Flooding Impacts
Floods and their impacts will vary by location and severity of any given flood event and will likely only affect certain areas during specific times. Impacts that are not quantified, but can be anticipated in future events, include:
• Possible injury and loss of life;
• Commercial and residential structural damage;
• Disruption of and damage to public infrastructure;
• Health hazards associated with mold and mildew;
• Damage to roads/bridges resulting in loss of mobility;
• Economic impact (jobs, sales, tax revenue) upon the community;
• Negative impact on commercial and residential property values; and
• Disruption to students and teachers as temporary facilities and relocations would likely be needed.

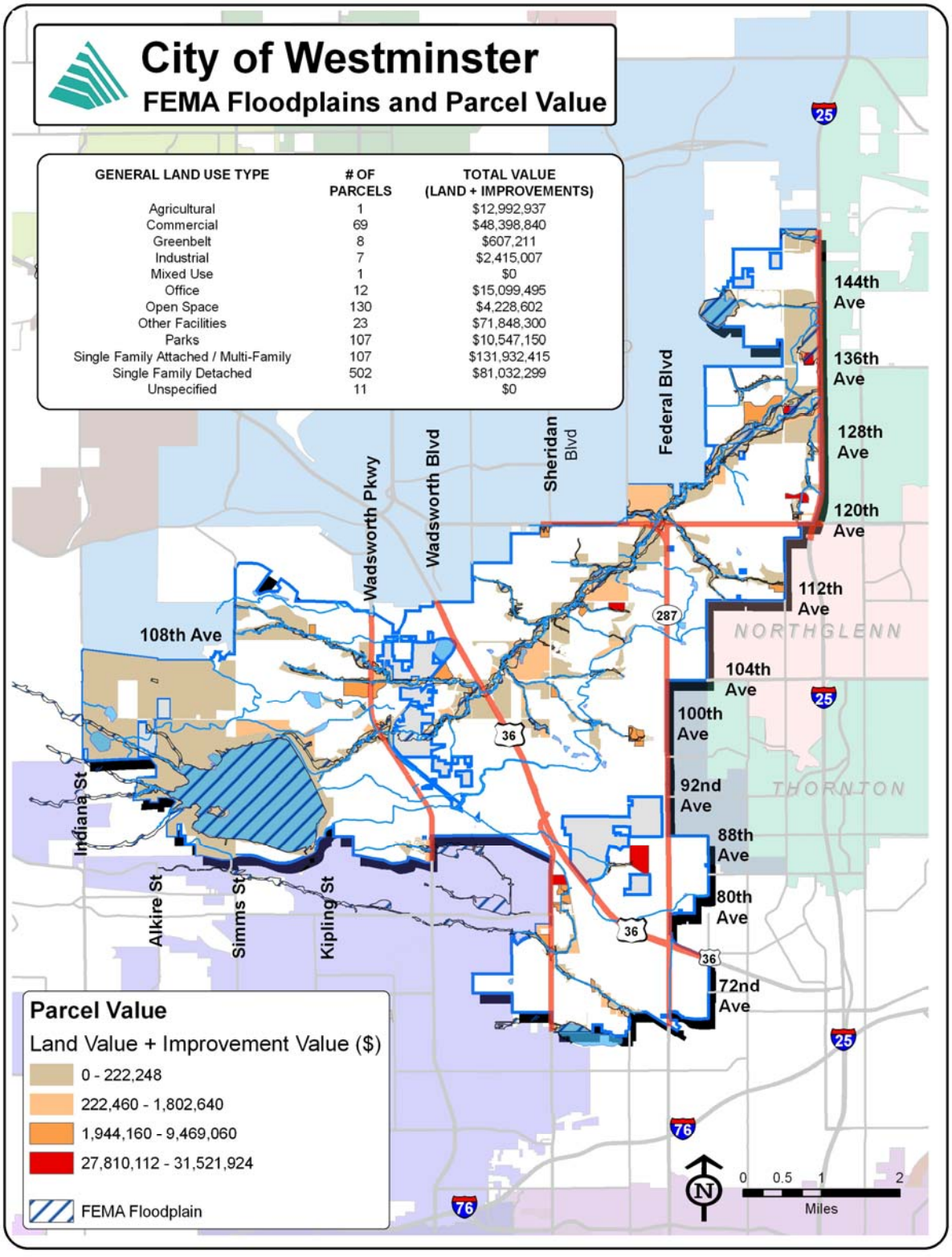
The risk potential or likelihood of a flood event in the City increases with the annual onset of heavy rains in the summer months. The City of Westminster has participated in **the regular phase of the National Flood Insurance Program (NFIP) since 1988 by administering floodplain management regulations that meet the minimum requirements of the NFIP.**
The Community Rating System (CRS) was created in 1990 to recognize floodplain management activities that go above and beyond the NFIP's minimum requirements. Under the CRS, if a community implements certain program activities, such as public information, mapping, regulatory, loss reduction, and/or flood preparedness activities, then its residents can qualify for a flood insurance premium rate reduction.
In November 1986 the City adopted the Flood Hazard Boundary Maps as the City's official regulatory floodplain maps. The City of Westminster was in the emergency phase of the NFIP program from August 1973, when Flood Hazard Boundary Maps (FHBM's) were adopted, until

September 1988. In 1988, the City adopted the Flood Insurance Rate Maps and Flood Insurance Study and entered the regular phase of the NFIP. In August of 1990 the City began participation in the Community Rating System program, at that time, the City had a Class 8 CRS rating, which allows for a 10 percent discount on flood insurance premiums. Since then, the City has improved its rating and is now a class 6 community. This rating allows 20 percent reductions in flood insurance premiums. Several flood insurance rate maps (FIRMs) exist for the City.


City of Westminster
FHAD Floodplains
LOUISVILLE
BROOMFIELD
ARVADA
NORTHGLENN
THORNTON
144th Ave
136th Ave
128th Ave
120th Ave
112th Ave
108th Ave
104th Ave
100th Ave
92nd Ave
88th Ave
80th Ave
72nd Ave
Wadsworth Pkwy
Wadsworth Blvd
Sheridan Blvd
Federal Blvd
Indiana St
Alkire St
Simms St
Kipling St
287
36
25
76
FloodplainFHAD
Streams
0 0.5 1 2
Miles
June 2010

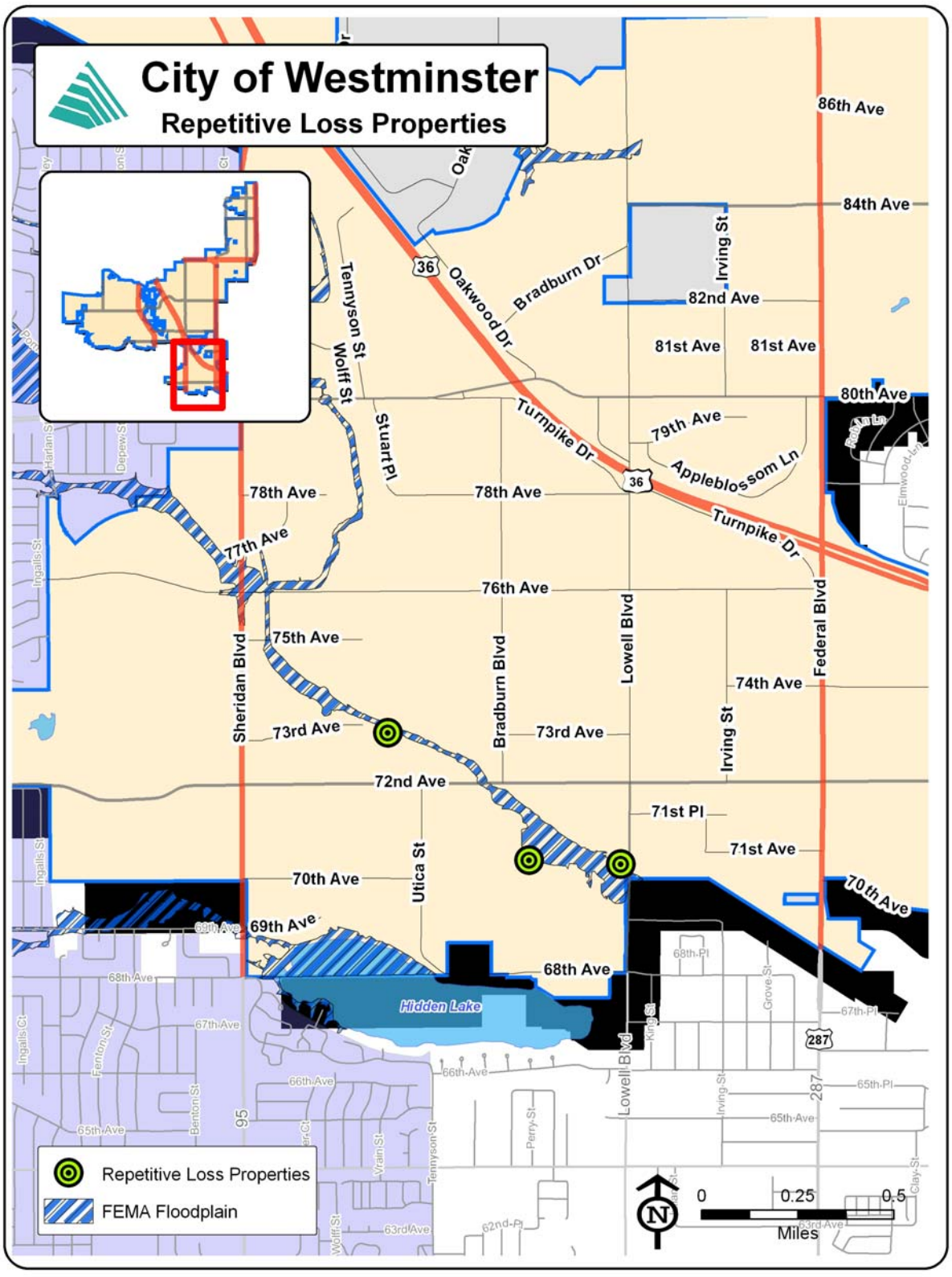


The City of Westminster's GIS Department mapped City parcels that were within the FEMA floodplain and came up with property value totals broken down by land use code. This allows the City to see overall properties that may be at risk in a flooding event. (Map Below)


City of Westminster
FEMA Floodplains and Parcel Value
GENERAL LAND USE TYPE | # OF PARCELS | TOTAL VALUE (LAND + IMPROVEMENTS)
Agricultural | 1 | $12,992,937
Commercial | 69 | $48,398,840
Greenbelt | 8 | $607,211
Industrial | 7 | $2,415,007
Mixed Use | 1 | $0
Office | 12 | $15,099,495
Open Space | 130 | $4,228,602
Other Facilities | 23 | $71,848,300
Parks | 107 | $10,547,150
Single Family Attached / Multi-Family | 107 | $131,932,415
Single Family Detached | 502 | $81,032,299
Unspecified | 11 | $0
144th Ave
136th Ave
128th Ave
120th Ave
112th Ave
108th Ave
104th Ave
100th Ave
92nd Ave
88th Ave
80th Ave
72nd Ave
Federal Blvd
Sheridan Blvd
Wadsworth Blvd
Wadsworth Pkwy
Indiana St
Alkire St
Simms St
Kipling St
NORTHGLENN
THORNTON
25
287
36
76
Parcel Value
Land Value + Improvement Value ($)
0 - 222,248
222,460 - 1,802,640
1,944,160 - 9,469,060
27,810,112 - 31,521,924
FEMA Floodplain
N
0 0.5 1 2
Miles
July 2010

Insurance Coverage, Claims Paid, and Repetitive Losses

According to NFIP data, published on May 28th 2009, there are 95 flood insurance policies in the City of Westminster. There is $24,470, 600.00 of insurance in force. Historically, there have been 21 flood insurance claims. The total losses paid are $253,792.64. There are three repetitive loss properties in the City of Westminster, two of which have been mitigated against. Two of the three repetitive loss properties are non-residential and one is a single family property. The locations of these properties are not included in this plan due to the sensitive nature of this information.


City of Westminster
Repetitive Loss Properties
86th Ave
84th Ave
82nd Ave
81st Ave
81st Ave
80th Ave
79th Ave
78th Ave
78th Ave
77th Ave
76th Ave
75th Ave
74th Ave
73rd Ave
73rd Ave
72nd Ave
71st Pl
71st Ave
70th Ave
70th Ave
69th Ave
68th Ave
68th Ave
67th Ave
66th Ave
65th Ave
Oakwood Dr
Bradburn Dr
Tennyson St
Wolff St
Stuart Pl
Turnpike Dr
Turnpike Dr
Appleblossom Ln
Irving St
Sheridan Blvd
Bradburn Blvd
Lowell Blvd
Irving St
Federal Blvd
Utica St
Hidden Lake
Repetitive Loss Properties
FEMA Floodplain
0
0.25
0.5
Miles
July 2010

(E) Vulnerability to Human Health Hazards: (E1) Pandemic Flu

Likelihood of Occurrence: Likely

Impact: Medium

Based on historical occurrences, the risk of a Pandemic Flu to the City of Westminster is likely, but the vulnerability for the City is medium. The City and other jurisdictions and counties alike have taken measures for preparedness to respond to such an outbreak. Reliance on medical technology and The Center for Disease Control and their affiliates also effect the City's vulnerability to such an outbreak.

Many scientists believe it is a matter of time until the next influenza pandemic occurs. Influenza pandemics occurred three times in the twentieth century—1918-19, 1957-58, and 1968-69—which suggests a 3 percent chance of a global pandemic in any given year (City of Boulder Plan). Nevertheless, the timing and severity of the next pandemic cannot be predicted. According to the Centers for Disease Control and Prevention, the risk from avian influenza is generally low to most people, because the viruses do not usually affect humans. However, H5N1 is one of the few avian influenza viruses to have crossed the species barrier to infect humans, and it is the most deadly of those that have crossed the barrier. Most cases of H5N1 influenza infection in humans have resulted from contact with infected poultry. So far, the spread of H5N1 from person to person has been limited and has not continued beyond one person. Nonetheless, because all influenza viruses have the ability to change, scientists are concerned that H5N1 virus could one day be able to infect humans and spread easily from one person to another. Because these avian flues do not commonly infect humans, there is little or no immune protection against them in the human population. If H5N1 virus were to gain the capacity to spread easily from person to person, a pandemic could begin, and everyone would be at risk. According to the World Health Organization, the world is presently in Phase 3 of the Pandemic Alert. This means that there is a new influenza virus subtype causing disease in humans. The recent outbreak of the H1N1 (Swine Flu) is also another potential risk. Like the Avian Flu, there is little or no immune protection against the strains that are mutating rapidly.

(E)Vulnerability to Human Health Hazards: (E2)West Nile Virus

Likelihood of Occurrence: Likely

Impact: Low

Both the risk and vulnerability of the City of Westminster planning area to West Nile Virus is considered low, based on the percentage of total population that actually comes down with the disease; less than 1 percent of those infected actually develop severe illness. The City has also taken the steps to mitigate against mosquito breeding grounds and educate the public on the disease and how to be self preventative.

In Colorado, the worst year on record was in 2003, where 2,947 cases of human West Nile Virus were confirmed. There were 389 confirmed cases in Adams and Jefferson Counties combined. In 2004, Colorado had 291 cases, 23 of which were in Adams and Jefferson Counties. There were no human deaths in 2004. In 2005, animal, mosquito, and human populations were less affected by West Nile Virus than in previous years with 106 human cases, 10 of which were in both counties. There were no deaths and only one case of meningitis. In 2006, reports of West Nile Virus in humans surpassed those of 2004. There were 345 cases and 7 deaths in Colorado; 19 of

the cases were located in Adams and Jefferson Counties. Although the potential for exposure does exist in the City, the risk should be considered in terms of adverse effects due to exposure. The City has an active surveillance and control program in place for mosquitoes and is referenced in the City's West Nile Prevention Program. Because protective measures to prevent exposure are relatively simple and cost effective, the likelihood and vulnerability can be greatly reduced. Given the nature of protective measures, such as wearing long-sleeved clothing and using bug spray, the responsibility for protection can and should be an individual responsibility. Educational resources about protecting ones self from contracting the disease is available through City resources. The virus will be present in Colorado into the future, but the severity changes from year to year, depending on variables such as weather patterns, the mosquito population, bird population, and immunity in humans.

(F)Vulnerability to Severe Weather: General

Looking at historical hazard data for the City of Westminster, severe weather is an annual occurrence; damage and disaster declarations related to severe weather events have occurred in the past and will continue to occur in the future. The severe weather evaluated as part of this risk assessment included: hailstorms, heavy rains/storms, lightning, tornadoes, windstorms, and winter storms. Severe winter storms have had the greatest impact on the City out of the severe weather category. Winter storms have great impacts on transportation. Because Westminster has US Hwy 36 and several other main transportation routes, planning and preparedness for such events is crucial.

(F1)Hailstorms

Likelihood of Occurrence: Highly Likely

Impact: medium

Westminster has low vulnerability for damages caused by hailstorms. Property damage is the factor that drives the vulnerability classification. Hailstorms are difficult to mitigate against, but can cause significant property damage and therefore economic loss.

According to the National Data Climatic Center, Jefferson County has experienced 155 hail events since 1993 and Adams County has experienced 144 events. The HMPC did not specifically identify any historical insurance claims for hail within the City of Westminster. However, given the magnitude of historical hailstorms and associated losses in Westminster and the Denver Front Range, the entire City of Westminster remains at risk and is vulnerable to future hailstorms.

(F2)Heavy Rains/Storms

Likelihood of Occurrence: Highly Likely

Impact: low

The City of Westminster has a medium vulnerability to heavy rain storms based on the potential for street flooding events see flooding section D above).

The City of Westminster experiences heavy rains and severe thunderstorms during the spring, summer, and early fall on an annual basis. Both global and regional climate patterns determine the potential severity of these storms from year to year. The entire planning area is equally at risk. Based on historical information, the primary affect of these storms has not resulted in significant injury or damage to people or property. The greatest threat posed by these severe storms is the over-taxation of the stormwater drainage system. Because of the City's built environment, there is a significant portion of impermeable ground. If rain was heavy enough, runoff from impermeable surfaces could potentially flood areas.

(F3) Lightning
Likelihood of Occurrence—Highly Likely
Impact: low
Although cloud to ground lightning strikes are common in Colorado, the City's vulnerability to damages, loss of life or property caused by lightning is low. Public education and the relative nature of damages caused by lightning strikes allow the City to classify itself as having low vulnerability to this hazard.
Based on National Weather Service data between 1997 and 2006, Colorado ranks second for the number of deaths at 30. Only Florida had more at 71 deaths. There were 2 lightning fatalities in Westminster between 1993 and 2000. Cloud-to-ground lightning is the most dangerous form of lightning. Westminster averages 7.5 thousand cloud-to-ground flashes per year.

(Table 11)

Location	Date	Time	Hazard	Mag	Dth	Inj	PrD	CrD
Westminster	08/10/1994	8:30 PM	Lightning	N/A	0	0	50	0
Westminster	05/02/1995	6:20 PM	Lightning	N/A	0	0	200	0
Westminster	05/18/2001	09:00 PM	Lightning	N/A	1	0	0	0
Westminster	05/30/2005	03:00 PM	Lightning	N/A	0	0	0	0
Westminster	06/21/2006	04:15 PM	Lightning	N/A	1	0	0	0

Source: http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

Additional statistics for Colorado estimate that one out of 52 lightning flashes results in an insurance claim. The City of Westminster has historically incurred damage associated with lightning events. It is difficult to quantify where specific losses will occur due to the random nature of this hazard. Given the lightning statistics for Colorado and Westminster, the City of Westminster planning area remains at risk and is vulnerable to the effects of lightning.

(F4) Tornadoes
Likelihood of Occurrence: Unlikely
Impact: High
Even though the City classifies the likelihood of future occurrence as unlikely, and the fact that there have been no historical tornadic events within the City of Westminster, the vulnerability to a tornado in the City is high. The vulnerability is high because of the massive amounts of damage and potential for life loss that would occur if a tornado were to ever touch down or travel through the City.
The National Climatic Data Center's 2005 Annual Summaries indicates that based on state-level tornado data from 1953 to 2005, Colorado ranks 8th for frequency and 35th for number of deaths (*City of Boulder Multi-Hazard Mitigation Plan*). When the tornado frequency per 10,000 square miles is compared with other states, Colorado ranks 35th for frequency and ties for 35th with 16 other states that average 0 deaths per 10,000 square miles. During a 57-year period (1950-2006), 2 tornadoes occurred in Westminster, which equates to one tornado every 28.5 years, on average. Further, tornadoes in Colorado tend to be small, short-lived, and relatively weak as compared with tornadoes that occur in the plains. Given the low frequency and nature of tornadoes near the

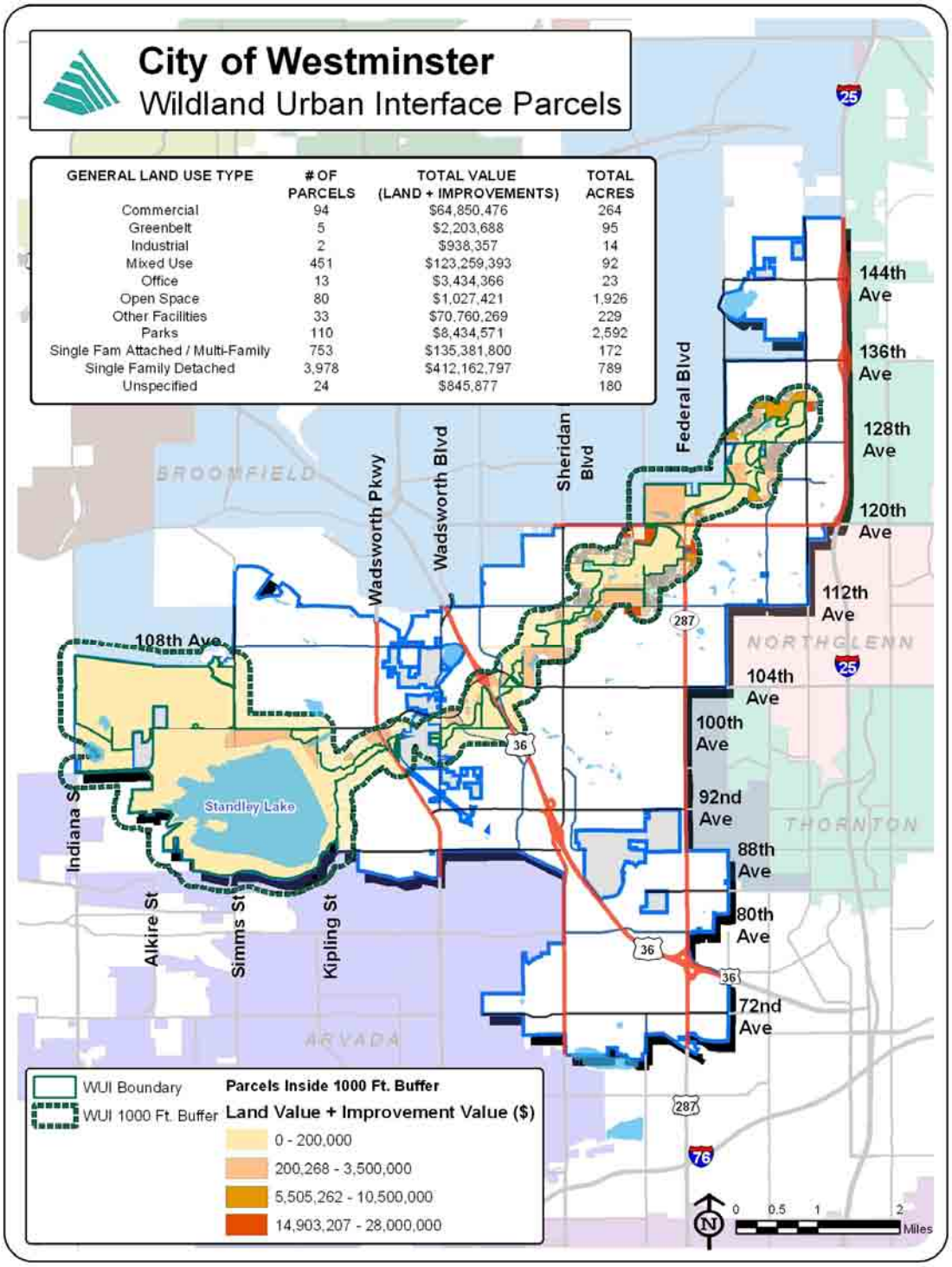
foothill areas of Colorado, tornadoes are a low frequency but a high risk to the City of Westminster.

(F5) Windstorms
Likelihood of Occurrence: Highly Likely
Impact: Low
Given historical data, topography of the area, and weather patterns, the entire City of Westminster is vulnerable to high wind events, but because of its geographic locations, it is less vulnerable then some surrounding areas like Boulder which experiences strong Chinook and down slope winds.

(F6) Winter Storms
Likelihood of Occurrence: Highly Likely
Impact: Medium
The City of Westminster is moderately vulnerable to the effects of a severe winter storm. Winter storms can sometimes paralyze day to day operations, businesses, transportation and services. The City of Westminster recognizes that heavy snow storms are a frequent event in this area and has prepared through planning and resource obtainment for future events.
Impacts to the City of Westminster as a result of winter snowstorms include damage to infrastructure, frozen pipes, utility outages, road closures, traffic accidents, and interruption in business and community activities. Delays in emergency response services can also be of significant concern. Further, there are economic impacts associated with areas prone to heavy snow. Depending on the nature of a given storm, the entire City of Westminster is at risk to major winter storms.

(G) Vulnerability to Grassland/ Wildland Fires.
Likelihood of Occurrence: Unlikely
Impact: low
Westminster faces low vulnerability to grassland/wildland fires. This is because the City has a relatively large amount of smaller sized open space parcels, instead of larger parcels. Also, the City isn't surrounded by large amounts of forest. If a grassland fire were to ignite, it should be relatively easy to contain based on fuel type.
In the Westminster area, the potential for both natural and human-caused fires that could result in loss of life and property exist. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic high wind conditions, can increase frequency of fires. The City of Westminster is not immune to wildfire because of large areas of dry vegetation and the potential for human-caused ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. Westminster's most substantial risks are the areas adjacent to Rocky Flats and designated small open space areas with in the City.
The map below outlines the Wildland Urban Interface parcels within a 1000ft buffer, in the City of Westminster, and details the land use for the Urban Interface with the area totals.

Wildland-Urban Interface Structure Counts with 1000 ft buffer



Estimating Potential Losses

Wildland-urban interface fires can cause physical damage to buildings, contents, and infrastructure and may result in casualties. Although the physical damage and casualties arising from wildland urban interface fires may be severe, it is very important to recognize that wildland-urban interface fires may also cause significant economic impacts on communities when damage results in loss of function of buildings and infrastructure. Once again, Rocky Flats and designated open space areas are Westminster's areas that are most susceptible for wildland/grassland fires. High winds could blow flames into mostly residential and office complexes if a fire were to start out at Rocky Flats. Westminster's risk is relatively low due to smaller but numerous areas of open space, thus minimizing a fire's capability to become severe. The economic impact of such loss of function may be comparable to the economic impact of physical damage. In some cases it may be even greater. Examples of economic impacts arising from wildland-urban interface fires damage include displacement costs, loss of public services, business and rental income losses, and loss of transportation and utility services. Displacement costs are the cost of temporary quarters when occupants of damaged residential, commercial, or public buildings are displaced during repairs. Displacement costs include rent; other monthly costs of displacement, such as furniture rentals; and one-time costs, such as those associated with moving and utility hookup.

Overall Community Impact

Potential impacts to the community from a severe grassland fire include:

• Possible injury and loss of life;
• Commercial and residential structural damage;
• Decreased water quality in area watersheds;
• Damage to natural resource habitats and other resources;
• Loss of water, power, roads, phones, and transportation, which could impact, strand, and/or impair mobility for emergency responders and/or area residents;
• Economic losses (jobs, sales, tax revenue) associated with loss of commercial structures;
• Negative impact on commercial and residential property values;
• Impacts to the social fabric of the community;
• impacts the school system and disrupt families and teachers, as temporary facilities and relocations would likely be needed; and
• Impact on the overall mental health of the community.

4.22-Assessing Capabilities

Thus far, the planning process has identified the natural hazards posing a threat to the City of Westminster and described, in general, the vulnerability of the City to these risks. The next step is to identify what loss prevention mechanisms are already in place. Doing so provides an assessment of Westminster's "net vulnerability" to natural disasters and more accurately focuses the goals, objectives, and proposed actions of this plan. This part of the planning process is referred to as the mitigation capability assessment.

The HMPC gathered information on common mitigation activities that already take place with in the City. The purpose of this effort was to identify activities and actions that were already in place, and then assess those efforts that needed improvement and could be undertaken, if deemed appropriate. The HMPC also reviewed an inventory of existing policies, regulations, and plans. These documents were collected and reviewed to determine if they contributed to reducing hazard-related losses. This section describes the City's mitigation capabilities.

Existing Mitigation Capabilities

Similar to the HMPC's effort to describe hazards, risks, and vulnerability of the City of Westminster planning area, this mitigation capability assessment describes the City's existing mitigation policies, procedures, and plans. Table 16 summarizes the results of the mitigation capability assessment.

(Table 12)-Mitigation Capabilities Matrix
***table template developed by AMEC Earth and Environmental*

Capability	Y/N Other	Comments
Comprehensive Plan	Y	Westminster Comprehensive Land Use Plan
Special Plans	Y	Northeast Comprehensive Development Plan, Urban Renewal Plan, North I-25 Corridor Plan, Westminster Comprehensive Land Use Plan
Subdivision Ordinance	Y	Title XI of the Westminster Municipal Code
Zoning Ordinance	Y	Title XI, Chapter 4, of the Westminster Municipal Code
NFIP/Floodplain Management Ordinance	Y	WMC 11-8
Stormwater Program	Y	2007 Storm Drainage Study WMC 8-13
Erosion or Sediment Controls	Y	XI-7-7
Building Code Version	Y	2003 International Building Code
Full-Time Building Official	Y	
- Conduct “as-built” Inspections	Y	
BCEGS Rating	4.4	
Local Emergency Plan	Y	Westminster Emergency Plan and Management System
Fire Department ISO Rating	Y	
Fire Safe Programs	Y	
Warning Systems in Place	Y	Public education, Reverse 911, text alerts
- Weather Radio Coverage	Y	Reliable Coverage
- Outdoor Warning Sirens	N	
- Emergency Notification (R-911)	Y	
- Other	Y	Water contamination / Flood Warning Detection System, Cable Television Interrupt, NOAA Weather Radio All Hazards, Metropolitan Emergency Telephone System, National Warning System.
GIS System	Y	
- Hazard Data	Y	Flood
- Building Footprints	Y	
- Tied to Assessor Data	Y	
- Land Use Designations	Y	
Cultural Resources Inventory	Y	
Public Information Program/Outlet	Y	
Environmental Education Program	Y	

Hazard-Related Programs, Policies, Documents, and Preventative Activities

The City of Westminster has adopted a set of guiding principles that establish the basis of all City programs, policies and documents:
Source: City of Westminster Emergency Plan and Management System

SAFE AND SECURE COMMUNITY
- Citizens are safe anywhere in the city
- Public Safety Departments: well equipped and fully staffed with quality personnel
- Timely response to emergency calls
- Citizens taking responsibility for their own and community safety and well-being
- **Manage disaster mitigation, preparedness, response and recovery**

FINANCIALLY SUSTAINABLE CITY GOVERNMENT PROVIDING EXCEPTIONAL SERVICES
- Revenues to support defined city services and service levels as a mature city
- Well-maintained city infrastructure and facilities
- Effective cost containment/control measures for living within revenues and budget
- Maintain sufficient reserves: general fund and utilities funds
- Balance between core services and quality of life services
- Provide efficient, cost-effective internal and external services
- Secure and develop long-term water supply

VIBRANT NEIGHBORHOODS AND COMMERCIAL AREAS
- Develop TOD around commuter rail stations
- Maintain and improve neighborhood infrastructure and housing
- Preserve and restore historic assets
- Revitalize Westminster Mall and area
- Rehabilitate deteriorating commercial areas
- Develop Westminster as a cultural art community

STRONG, BALANCED LOCAL ECONOMY
- Healthy retail base, increasing sales tax receipts
- Attract new targeted businesses, focusing on primary employers and higher paying jobs
- Business-oriented mixed use development along I-25 corridor and US 36 corridor
- Retain and expand current businesses
- Multi-modal transportation system provides access to City amenities centers
- Be a great place for small and/or local businesses

BEAUTIFUL AND ENVIRONMENTALLY SENSITIVE CITY
- Increase green space (parks, open space, etc.)
- Well-designed and maintained private developments and buildings
- Develop and maintain attractive streetscapes and landscaped medians
- Have energy efficient, environmentally sensitive city operations
- Increase public and cultural arts

The City of Westminster has several documents and activities that address the City's guiding principles related to hazard mitigation. A list of these programs, documents and activities follow, along with a brief summarization of the program status and document contents.

Westminster Comprehensive Plan Policies (updated in 2005)

The general policies and principles that relate to mitigating the impacts of natural hazards are detailed below. These policies provide overarching direction for planning, development, and programs in Westminster.

Westminster Comprehensive Plan:
The Natural Hazards Mitigation Plan recognizes that many plans, policies, and programs are already in place in the City that directly implements Westminster's Comprehensive Plan. Taken largely from the Comprehensive Plan and the Emergency Plan and Management System document, this section summarizes existing programs and identifies existing implementation tools as well as identified actions for future implementation.

Fire/Emergency Medical Service Program:
An update to the Fire and Emergency Medical Service Master Plan was completed in 2008. The City of Westminster Fire Department (WFD) is responsible for the protection of life and property through fire prevention, education, fire suppression, and emergency medical and rescue services and emergency management. The Fire Department has six fire stations strategically located around the City:
Each station operates 24 hours per day, seven days per week and is equipped to respond to fire, medical, and other emergencies. Medical calls accounted for 79.3 percent of the 8,058 calls for service in 2008.
The master plan service standards are as follows:
• Respond with basic life support within six minutes 80 percent of the time.
• WFD strives to maintain a five-minute average response time to all emergency calls, and responding to 80% of all calls within six minutes.
The following seven philosophies provide general direction when establishing goals and objectives for fire protection in the City of Westminster:
• Shared Responsibility for Fire Protection—The City emphasizes private sector self protection through code regulations and design incentives. Installation of automatic fire sprinkler systems is now required by ordinance for many uses.
• Balance between Built-In Fire Protection and Public Fire Protection Service—
Municipal fire protection requires a balance between services provided by the City through fire stations, apparatus, and personnel and that provided by built-in automatic fire systems. Automatic systems offer a high degree of protection from fire originating in those protected properties. City-provided protection supplements the built-in systems and is designed to handle fires in non-protected buildings, outside fires, medical emergencies, and non-fire emergencies and events.
• Generalist Theory of Operation—The Fire–Rescue Department believes that each fire apparatus should have diverse equipment and that the firefighters should be generalists rather than specialists. Every front-line fire truck has firefighting and rescue equipment along with emergency medical supplies. Each firefighter must pass a comprehensive training program that supports that generalist approach. State of Colorado emergency medical technician certification is required, and every firefighter's training includes firefighting, hazardous materials response, and training for rescues involving vehicle accidents, fires, water, and ice incidents.
• Basic Level of Emergency Medical Service— Westminster Fire Department provides basic and advanced life support services. The EMS delivery system is a two-tiered system. All medical and trauma related alarms require an ambulance and engine response. EMT's and paramedics

respond on fire apparatus along with a WFD ALS ambulance which is often staffed with two paramedics.

• Specialist Capabilities—In addition to the traditional general fire and emergency medical capabilities, the Fire–Rescue Department provides services that are more specialized:

− The Water Rescue Team provides swift water rescue and water rescue/recovery services for accidents in lakes and ponds.

− The Hazardous Materials Team operating through a regional team provides assistance to reduce the threat or release hazardous substances.

− The Wildland Fire Team provides response capability to wildland fires that occur within the City of Westminster, to other Colorado jurisdictions through a State-wide mutual aid agreement, and to other States as designated through Federal wildland management plans.

• Training—The Fire–Rescue Department offers a wide variety of services to the citizens of Westminster. To maintain an adequate level of proficiency in many areas of emergency service, the department conducts extensive training in all service areas including firefighting, fire prevention, emergency medical care, hazardous materials, rescue, and public education. Joint training exercises are conducted with other agencies. • Impact of Infill—City fire stations are strategically located to meet the emergency response service standards.

Anticipated infill projects typically utilize the urbanized mixed-use concept where many different uses, i.e. business, commercial, and residential are intertwined within the project design concept. Mixed-use developments represent a unique challenge from both a fire protection and EMS services perspective. Proposed population densities potentially add to a fire protection and EMS delivery system that is not designed for this potential impact. Limited access points, reduced street widths, lack of emergency apparatus/vehicle staging and deployment opportunities, and traffic control features present challenges to responding emergency units. Changes in building sizes and configurations, internally and externally, present unique challenges unique to each infill project. A close working relationship with Community Development has and will continue to serve the community well in coordinating the Fire Department's response to challenges presented by future infill projects.

Accessible Private Drives:

City of Westminster addresses all access drives, public and private, through the requirements of the International Fire Code.

Open Burning and Recreational Fires

No person shall kindle or maintain outside of a habitable building any bonfire or burn or permit to be burned any trash, paper, rubbish, wastepaper, wood, weeds, brush, plants, or other combustible or flammable material anywhere within the City limits or anywhere on City property outside of the City limits, except when:

• The burning is in the course of an agricultural operation in the growing of crops as a gainful occupation and presents no fire hazard to other property in the vicinity;

• The burning is solely for cooking food for human beings, and said cooking is done in a manner consistent with safe practice;

• The burning is a smokeless flare or a safety flare used to indicate some danger to the public;

• The burning is a training fire conducted by the fire department or is a training fire conducted by another fire department or privately for industrial or commercial fire training purposes and approved in writing by the fire chief; or

• The burning is solely for the purpose of fuels mitigation to alleviate wildland fire potential or weed abatement to assist restoration of native plants and is approved in writing by the fire chief.
WFD does not have a specific vision statement. We operate under the City of Westminster mission (vision) statement: "Our job is to deliver exceptional value and quality of life through SPIRIT." The WFD delivers services through the application of PRIDE:

- Professional in our approach
- Ready to respond
- Innovative and adaptive
- Dedicated to the community
- Empowered to make a difference

Police Service Program

The job of the city and its employees is to deliver exceptional value and quality of life through Service, Pride, Integrity, Responsibility, Innovation and Teamwork (S.P.I.R.I.T). This mission and value statement describe the pillars upon which the Department and the City rests, and which enable both to carry out the primary organizational goals and objectives in an highly efficient and effective way. It is through these that the department serves the people of Westminster by performing the law enforcement function in a professional manner.

The department's strategic plan is continuous in nature, and an annual review is necessary to maintain its relevance in a progressive law enforcement agency. Each year the department's strategic plan will be critically reviewed for current application and accomplishment. From this review, objectives and key action items may be modified, eliminated, or added to meet changing needs of the community, city priorities, departmental capabilities, and the city's strategic plan.

The department's main goal is to ensure a Safe and Secure Community by executing the following objectives:

1. Citizens are safe anywhere in the city
2. Public Safety Departments: Well equipped and fully staffed with quality personnel
3. Timely response to emergency calls
4. Citizens taking responsibility for their own safety and well-being
5. Manage disaster mitigation, preparedness, response and recover

The department would ultimately like to see a society free from crime and disorder; however, this is considered a highly unachievable ideal but it is still consistent with the values of a free society and the department's role is to enforce the law in a fair and impartial manner, recognizing both the statutory and judicial limitations of police authority and the constitutional rights of all persons. Additional goals for the department are prevention and deterrence of crime, apprehension of offenders, recovery and return of property, effective movement of traffic, public service and assistance, recruitment, selection and training, and effective utilization of resources.

The department identifies the desirable number of sworn police personnel via a combination of sworn police officers per capita, calls for service, Part 1 Property and Violent Crime reported and overall response time to Top Priority 1 Calls. Currently, the department's ratio is 1.66 sworn police officer per 1,000 inhabitants, which is a 2.5% increase compared to 2008. In 2008, Part 1 Violent Crime increased by 28.5% and Part 1 Property Crime increased by 1.72% compared to 2007.

Unfortunately, due to the current economic and fiscal crisis experienced locally, nationwide and internationally, the department has had to implement budget cuts and adhere to a strategic hiring freeze. The department is currently down 9.0 FTE sworn police officers. Once the current economic condition improves, the department would like to return to fully authorized sworn police staffing levels to ensure a Safe and Secure Community.

West Nile Virus Mosquito Management Plan

The City of Westminster has had a comprehensive mosquito management plan since 1986. With the onset of West Nile Virus this plan was adapted to confront this serious disease. West Nile virus is a disease that can be transmitted to humans by mosquitoes. It has been common in Africa, west Asia and the Middle East for decades. It first appeared in the US in 1999 in New York. It has since traveled westward across the country and now is in Colorado. Mosquito season in Colorado starts in the spring and ends in mid-September. The West Nile virus is carried long distances by infected birds and then spread locally by mosquitoes that bite these birds. Infected mosquitoes can then bite and pass the virus to humans and animals, primarily birds and horses. There is a vaccine for horses, but none for humans. House pets do not spread the illness. Health departments across the state are closely monitoring human and horse illnesses and tracking the virus by testing dead birds and trapping mosquitoes. Westminster uses the services of Colorado Mosquito Control, Inc. to provide an integrated pest management (IPM) program that effectively controls all aspects of the mosquito lifecycle. All areas of the City, both public and private, are managed through this program.

4.23-Emergency Management Capabilities

Emergency preparedness is part of the City's strategy to protect life and property from floods and other disasters. The following discusses the City's emergency management program and activities.

City of Westminster Emergency Management Program

The Emergency Management Program (EMP) coordinates the activities of volunteer, public, and private agencies in emergency planning, mobilizing, and direction of emergency preparedness personnel in response to and recovery from disasters or emergencies. The EMP develops plans, programs, and training exercises for response to large scale emergencies in the City of Westminster. The EMP obtains assistance and resources from federal, state, local, public, and private sources. The EMP is funded and staffed by the City of Westminster with additional support from FEMA through the Colorado Division of Emergency Management.

Emergency Plan and Management Systems

The purpose of the EMPS is to delineate task assignments and responsibilities for the operational actions that will be taken prior to, during, and following an emergency or disaster affecting local government to alleviate suffering, save lives, and protect property. As described in the plan, the City operates and maintains compliance with the National Incident Management System (NIMS).

Incident Command System

The Incident Command System (ICS) is a standard management system for controlling incidents. The ICS consists of operations, planning, logistics, and finance and administration, all operating within a common organizational structure to gain control and resolve any type of incident.

Multiple Agency Coordinating System

The Multiple Agency Coordinating System (MACS) is an information and resource service intended to facilitate the effective use of limited resources between jurisdictions. MACS will be activated for any emergency or disaster that requires the use of resources beyond those available to the affected jurisdiction. The MACS concept operates separately from ICS and is not involved in the control of an incident.

Emergency Warning and Evacuation System

The existing 911 database of telephone numbers and addressees is used in combination with detailed maps to help determine the geographic boundaries of an impacted area. The system is capable of making up to 1,200 calls per minute. It is designed to deliver recorded information to endangered people in advance of a disaster. Messages can be delivered in various languages. They can also be sent to pagers and the Emergency Alert System.

Reverse 911:

Cell Phone users and VoIP customers can register their phone numbers to receive emergency notifications from Westminster police and fire. The system works in a similar manner to what is commonly referred to as "Reverse 911". When a need exists to notify citizens in a certain area of the city, you can receive the notification on your cell phone or VoIP phone.

The service, which is managed by the Jefferson County E911 Authority, is available to all City residents, whether they live in Adams or Jefferson County. f you are served by the Westminster Police and Fire departments, you can register your cell-phone or internet phone number.

Cable Television Interrupt

Programming on all television channels can be immediately interrupted for any emergency that has a significant effect on public safety or for any unusual situation that requires evacuation. The screen can be blanked out and the emergency message transmitted.

Emergency Alert System

NOAA Weather Radio All Hazards

NOAA Weather Radio All Hazards is a service of the National Oceanic and Atmospheric Administration (NOAA). It provides continuous broadcasts of the weather information directly from National Weather Service offices. Weather messages are repeated every four to six minutes and are routinely revised every two to three hours, or more frequently if needed. The broadcasts are tailored to weather information needs of people within the receiving area. During severe weather, National Weather Service forecasters can interrupt the routine weather broadcasts and substitute special warning messages. Special weather radio receivers are available for purchase at local electronics stores. Although NOAA classifies coverage in Westminster as reliable, the sign and cannot be received in the canyon areas.

Metropolitan Emergency Telephone System

The Metropolitan Emergency Telephone System (METS) is a specially designed telephone system for alerting law enforcement, other response agencies, and Denver media of emergency situations. The particular value of METS to the Westminster Regional Communications Center is the ability to instantly notify all Denver media of any life-threatening situations in Westminster that can be immediately broadcast on all Denver radio and television stations. Since many Westminster residents watch Denver television and listen to Denver radio stations, this is a very valuable warning system for Westminster.

Preparedness Checklists

The City of Westminster website provides information for the public on planning and preparing for unexpected disasters and emergencies along with helpful checklists.

City of Westminster Codes and Regulations:

The City is a municipal corporation duly organized and existing under the laws of the State of Colorado. Westminster is a home rule City and adopted a charter pursuant to Article XX of the Constitution of the State of Colorado on October 30, 1917.

4.24-Other State and Local Agencies Related to Hazards Management

Colorado Water Conservation Board

The Colorado Water Conservation Board (CWCB) is an agency of the State of Colorado. The CWCB Flood Protection Program is directed to review and approve statewide floodplain studies and designations prior to adoption by local governments. The CWCB is also responsible for the coordination of the National Flood Insurance Program (NFIP)

in Colorado and for providing assistance to local communities in meeting NFIP requirements. This includes CWCB prepared or partnered local floodplain studies.

Urban Drainage and Flood Control District

The Urban Drainage and Flood Control District (UDFCD) was established by the Colorado legislature in 1969 to help local governments in the Denver metropolitan area with multijurisdictional drainage and flood control problems. The UDFCD covers 1,608 square miles and includes Denver, parts of the seven surrounding counties, and all or parts of 33 incorporated cities and towns, including the City of Westminster. There are about 1,600 miles of "major drainageways" that are defined as draining at least 1,000 acres. The population of the district is approximately 2.3 million. The UDFCD operates six programs: Master Planning, Design and Construction, Maintenance, Floodplain Management, Information Services and Flood Warning, and South Platte River. The UDFCD is responsible for maintaining and preserving floodways and floodplains in areas eligible for UDFCD maintenance. UDFCD maintenance is limited to facilities that are publicly owned or are in a public drainageway easement and are categorized into routine, restoration, and rehabilitation projects. Routine maintenance consists of scheduled mowing and trash and debris pickup on major drainageways during the growing season. It may also include small re-vegetation efforts and limited weed control. Restoration projects address local erosion problems, existing structure repair, detention pond restoration, tree thinning, removal of sediment deposits from flood control facilities, and re-vegetation work. Rehabilitation projects are major reconstruction efforts that would be included as capital improvement program projects in the City of Westminster.

Colorado Division of Emergency Management

The Colorado Division of Emergency Management (CDEM) is responsible for the state's comprehensive emergency management program, which supports local and state agencies. Activities and services cover all aspects of emergency management. Assistance to local governments includes financial and technical assistance as well as training and exercise support. Services are made available through local emergency managers supported by CDEM staff assigned to specific areas of the state.

5 MITIGATION STRATEGY

This section describes the mitigation strategy process and mitigation action plan for the City of Westminster's Multi-Hazard Mitigation Plan. This section describes how the city accomplished Phase 3 of FEMA's 4-phase guidance—develop the Mitigation Plan—and includes the following from the 10-step planning process: *developed by AMEC Earth and Environmental:*

- Planning Step 6: Set Goals
- Planning Step 7: Review Possible Activities
- Planning Step 8: Draft an Action Plan

5.1-Goals and Objectives

Requirement §201.6(c)(3)(i):
[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Up to this point in the planning process, the HMPC has organized resources, assessed natural hazards and their corresponding risks, and documented mitigation capabilities. A profile of the City of Westminster's vulnerability to natural hazards resulted from this effort, which is documented in the preceding chapter. The resulting goals, objectives, and mitigation actions were developed based on this profile. The Project Management Intern facilitated this aspect of the plan with a series of meetings designed to achieve a collaborative mitigation planning effort made up of various City departments. The Emergency Management Coordinator and the Management Intern researched other City's and Counties goals. They researched the City of Boulder's Multi-Hazard Mitigation Plan's described goals because of Boulder's neighboring proximity and similar Emergency Management program objectives and strategies. The City's Emergency Management Coordinator and the Management Intern then brought their goals and prioritization process to a series of HMPC meetings for review. During the initial goal-setting meeting, the HMPC reviewed the results of Boulder's hazard identification, vulnerability assessment, and capability assessment and then compared them with Westminster. This analysis helped to identified areas where improvements could be made in the City of Westminster. This provided the framework for the HMPC to formulate planning goals and objectives and the ultimate mitigation strategy for the City of Westminster. AMEC *Earth and Environmental* developed the definitions and goals stated below:

Goals were defined for the purpose of this mitigation plan as broad-based public policy statements that:

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- Are time-independent, in that they are not scheduled events.

Goals are stated without regard for implementation, that is, implementation cost, schedule, and means are not considered. Goals are defined before considering how to accomplish them so that the goals are not dependent on the means of achievement. Goal statements form the basis for objectives and actions that will be used as means to achieve the goals. Objectives define strategies to attain the goals and are more specific and measurable.

As part of the prioritization process described later in this section, prioritized Mitigation goals were reviewed against current and future projects that the City of Westminster has prioritized. Based upon the risk assessment review and goal setting process, the HMPC decided that the following goals and objectives (*developed by Boulder with assistance from AMEC Earth and Environmental)* were pertinent for the City of Westminster and associated mitigation measures. These goals and objectives also provide the direction for reducing future hazard-related losses within the City of Westminster.

Goal 1: Increase Community Awareness of Westminster's Vulnerability to Natural Hazards Objective 1.1: Inform and educate the community about the types of hazards the City of Westminster is exposed to, where they occur, and recommended responses

• Create an outreach program:
− Provide self-help resources and training
− Describe mitigation alternatives
− Identify funding sources

Goal 2: Reduce Vulnerability of People, Property, and the Environment to Natural Hazards

Objective: Provide mechanisms to enhance life safety

Objective Reduce impacts to critical facilities and services

• Identify and protect the most "critical" facilities
• Protect hazardous materials locations

Objective: Reduce impacts to existing buildings to the extent possible

Objective: Reduce impacts to future development to the extent possible

Objective: Reduce impacts to the City's natural resources

Objective: Reduce impacts to public health (natural health hazards, not biochemical terrorism)

Goal 3: Increase Interagency Capabilities and Coordination to Reduce the Impacts of Natural Hazards

Objective: Improve planning coordination

Objective: Improve funding coordination

Objective: Improve response coordination

5.2-Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii):
[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.
[The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

The City of Westminster previously participated in the Denver Regional Council of Governments Hazard Mitigation Plan. The following table is from the DRCOG plan and shows the City of Westminster's existing and planned mitigation measures/ action strategies. The HMPC reviewed the list to determine whether the actions/ strategies have been completed, deleted, deferred or are ongoing. The HMPC also identified how mitigation actions that were listed in the previous DRCOG plan have influenced or been incorporated into City planning efforts or projects.

Table 13

Project Title	Completed	Deleted	Deferred	Ongoing	Updated Formal City Documents
Adopt or Revise Building Code				X	2006 IBC adoption, 2009 codes in process of adoption
Planning and Zoning: Land Development Regulations				X	
Open Space Preservation				X	
Floodplain Development Regulations				X	
Storm Water Management				X	2007 Storm Drainage Study
Develop Inventories of at-risk structures to prioritize mitigation projects	X				2007 Storm Drainage Study
Wildland Fuel Management				X	
Building Inspection and Modification				X	2006 ICC code adoption, 2009 codes in process of adoption
Relocation				X	
Acquisition				X	Open space floodplain acquisition (on file)
Building Elevation				X	
Flood Proofing				X	
Sewer Backup Protection				X	
Insurance				X	Annual update to CRS and ISO rating systems
Wetlands Protection				X	GIS wetland permit mapping layers and mitigation reports for each

					permit
Erosion and Sedimentation Control				X	2007 Water Quality Ordinance Title 8 Ch. 11 of Westminster City Charter
Best Management Practices				X	
Flood Warning Systems			X		Text message alerts
Flood Response				X	
Critical Facilities Protection				X	
Protection of infrastructure needed for emergency response capability (EOC)	X				Standard Operating Procedures in progress, Facility back up by generator
Health and Safety Maintenance				X	
Reservoirs	X				
Levees/Firewalls	X				
Diversions	X				
Channel Modifications				X	City Park Channel, Weld Creek, Cozy Corner Tributary number 5, Airport Creek, Middle Branch Highland Creek, Big Dry Creek (various locations)
Structural design standards	X				
Storm sewers				X	
Shelter areas/ safe rooms	X				New agreement with Red Cross and local church for shelter operations
Map Information	X				
Property Protection				X	Individual lot Grading Review Program
Outreach Projects				X	Business Retention visits, Preparedness Education, seasonal press releases
Real Estate Disclosure				X	
Library Environmental Education				X	Natural Hazards Mitigation Plan available in City Libraries
Technical Assistance				X	Technical upgrades for EOC facilities, EMWIN subscription

In order to identify and select mitigation measures to support the mitigation goals, all natural hazards that have the potential to affect the City were evaluated. Only those hazards that both pose a significant threat to the community and have the potential for mitigation actions or respective projects/ planning initiatives were considered further in the development of hazard specific mitigation measures.

These hazards are:

- **Drought**
- **Floods**

The HMPC also developed hazard mitigation actions which address all hazards that could potentially affect the City of Westminster. These mitigation actions were developed for providing comprehensive information on the hazards identified below:

- Drought
- Dam Failure
- Earthquakes
- Floods
- Human Health Hazards
- Severe Weather
    - Extreme Temperatures
    - Hailstorms
    - Heavy Rains/Storms
    - Lightning
    - Windstorms
    - Winter Storms
- Wildland Fire
- Tornadoes

It is important to note, however, that all above identified hazards are also included in the hazard analysis section of the City's Emergency Plan and Management System. Once it was determined which hazards warranted the development of specific mitigation measures, the HMPC analyzed a set of viable mitigation ideas that would also support the identified goals and objectives. Each HMPC member was provided with the following list of categories of mitigation measures, which originate from the Community Rating System:

- *Prevention*
    - **Property acquisition**
- *Property Protection*
    - **FasTracks Drainage Project**
    - **GIS impervious mapping Project**
- *Infrastructure Projects*
- *Natural Resource Protection*
    - **Drought response program update**
    - **Continued NFIP compliance**
- *Emergency Services*
- *Public Information*
    - **Natural Hazards Information Booth at the Annual City of Westminster Summer Celebration and Annual Business Appreciation Event**
    - **Development of a Natural Hazard Information Pamphlet, to be available to the public**

Prioritization Process

In their meeting held on January 7th 2010, the HMPC discussed the City's existing hazard mitigation projects and established future goals for the City. The process used involved a review of all past mitigation activities. Each City department identified their individual

department actions. From that, a consensus was reached on three major categories and their subsequent actions.
The City of Westminster has few hazards that have not already been addressed. However, the HMPC decided that the seven main mitigation projects for the City should be:

- *Property Protection*
  - Storm water mitigation projects (Fast Tracks drainage improvements & GIS impervious grounds mapping)
- *Natural Resource Protection*
  - Drought Program Update
  -Continued compliance with NFIP and upkeep/potential improvement of CRS rating 6.
- *Prevention*
  -Continued floodplain property acquisition
- *Public Information*
  -Natural Hazards Information Booth at the Annual City of Westminster Summer Celebration and Annual Business Appreciation Event
  -Development of a Natural Hazard Information Pamphlet, to be available to the public

These projects are recognized as the City's top priority for future mitigation actions. The HMPC recognized that if completed, these mitigation actions would serve to help prevent property damage or loss and potential loss of life.
** Each mitigation action description outlines the priority of the specific project for the City of Westminster.*

5.3- The Mitigation Strategy

After the HMPC decided which mitigation projects were the City's top priorities, the Emergency Management Coordinator and the Management Intern developed a project action template. The project action template includes a brief description of each prioritized project and outlines specific mitigation outcomes.
The City of Westminster recognizes the necessity for communication with the public about the planning process used in this plan and also strives to provide resources for public education concerning natural hazard preparedness.
The City of Westminster will implement public and stakeholder recommendations/ comments into the plan where appropriate and will also implement existing City policies, regulations and procedures into the plan.

5.4-Mitigation Action Plan

Requirement §201.6(c)(3)(iii):
[The mitigation strategy shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated losses.

The HMPC decided on the following action plan which outlines future projects that will assist in mitigating against loss due to a natural hazard event. If completed, these projects can help to reduce the vulnerability of property, City infrastructure and people from loss or destruction.
Each project outline identifies the issue causing the need for a mitigation project, who the overseeing department would be, the priority that the City feels each project holds and the assumed benefits that the project completion would have for the City.
The HMPC had a round table discussion to asses the priority for each project. Through collaborative discussion and analysis of the projects, the priority levels for each project were determined. High priority was given to the FasTracks drainage project because of the cost and because of the City's significant commitment to Stormwater projects. Through deliberation, it became evident that the City's stormwater management program provides the highest mitigation value (benefit) for the cost of the projects. In addition, the City's Master planning process requires a cost benefit analysis to accompany each project for approval.
The HMPC and the City of Westminster also realize that if a disaster or large scale event occurs, the priority level of these mitigation projects may change.

City of Westminster Recommended Mitigation Action:

Storm Water Drainage Projects

In 2007, the City of Westminster's Community Development Department hired a consulting engineering firm to develop a prioritization matrix for drainage improvements throughout the City. From this detailed study, 87 projects were identified totaling an estimated $75 Million dollars to complete. Based upon current funding through the City's Stormwater Utility, it will take approximately 40 years to complete all these projects.

It is noteworthy to mention that as part of an update to the Big Dry Creek Outfall Systems Planning (OSP) study developed in cooperation with the Urban Drainage and Flood Control District, Adams County and the City of Thornton, the peak flow rates in Big Dry Creek have been reduced by nearly 30% due to the construction of regional detention facilities as recommended in the original OSP. It is this type of regional and multijurisdictional cooperation that has allowed the City to strategically develop with a holistic approach instead of narrowly focusing on individual site development.

The City of Westminster continues to look for opportunities to better the community and region by implementing regional drainage facilities. One such project is listed below:

1. Little Dry Creek Regional Detention Facility and Greenway Improvements near future Regional Transportation Department (RTD) FasTracks S. Westminster Station.

Issue/background: In anticipation of the future RTD FasTracks project that will bring a commuter rail station to the south side of the City, a planning and engineering design team was hired by the City to master plan the area. Since that time in 2006, the City has partnered with the Urban Drainage and Flood Control District and Adams County to begin final design incorporating a regional detention facility along Little Dry Creek and a regional greenway/park that will be a destination attraction region as well as for the commuters that will use the RTD FasTracks South Westminster Station. The Concessionaire for this station was selected by the RTD board on June 15, 2010 and plans to have this station open by March of 2016.

This project has been identified by the City of Westminster's Community Development Department as being the number two priority out of 87 projects. This project has many vested interests including Adams County, the Urban Drainage and Flood Control Districts and Parks and Recreation/Open Space, adjacent flood prone single family residences.
This project falls under mitigation goal number 2 (*listed above*) for *Reducing Vulnerability of People, Property, and the Environment to Natural Hazard.*

Other Alternatives: Do nothing and leave Little Dry Creek in its current degraded state.
Priority: This project is of **high** priority to the City because there are preliminary plans to have FasTracks operable by 2016 in the City of Westminster.
Cost Estimate: $10 Million with approximately $5 Million dollars already in place.
Benefits (Avoided Losses): Regional detention pond, park, open space preservation, reduction of flood plain, commuter rail, serves lower income areas, etc.
Schedule: 5 years
Potential Funding: City of Westminster, Urban Drainage and Flood Control District, Adams County, City and County Open Space funds, RTD FasTracks.

2. Continued Floodplain Land Acquisition

Issue/Background: In the past, the City of Westminster has made acquiring land that resides within the 100 year floodplain a priority for ensuring safety and reducing the risk for loss of life or property damage. However, there are still properties that have not been obtained that the City of Westminster would like to purchase in the future. This project goes under mitigation goal number 2 (*listed above*) for *Reducing Vulnerability of People, Property, and the Environment to Natural Hazard.*
Because of the sensitive nature of this project and the public availability of this plan, the City of Westminster will not release prospective property locations.
Other Alternatives:
Priority: The City of Westminster has taken measures to help mitigate the effects of a major flooding event. However, it is still important to reduce risks and associated damages by purchasing land that is deemed to be in a hazardous area. Therefore, the priority for this project is **high. The City of Westminster has filed a notice of Intent for this project.**
Cost Estimate: Land will be purchased at fair market value.
Benefits (Avoided Losses): By purchasing land or property that resides in a potentially hazardous area, the City will further decrease the chance of life loss, and costs due to property damage from flooding. Purchased land is turned over to the City's Open Space Department and is monitored/ maintained. More open space with in the City also provides for esthetic benefits as well. Floodplain acquisition also earns points towards improving the City's CRS rating, which is another outlined project in this plan.
Schedule: Continuous
Potential Funding: City of Westminster Community Development,

3. Impervious vs. Pervious Surface Mapping

Issue/Background:
The City of Westminster contains over 28,000 single family residential parcels. These contribute significantly to the storm water run-off of the area. The city uses Geographic Information Systems (GIS) technology to manage a number of critical municipal functions. One layer that is absent from the City's inventory of GIS data is single family residential impervious surface area polygons. These areas would include building footprints, driveways, sidewalks and patios. The impervious areas would be digitized by a contractor making use of the latest aerial imagery and surface elevation data. *This mitigation action falls under both goals 2 and 3 as described above.*

Several public safety benefits would be derived from this impervious surface data, including:

- This GIS dataset could be used to determine the impacts to structures adjacent to floodplains. Currently, there is no easy way to determine if a structure will be affected by a flood event. This product would give us the ability to measure

precisely the distance from floodplain boundaries to the edges of existing structures and potentially to the edges of proposed structures.
- With a complete total of impervious area for the City of Westminster, better estimations of impacts of storm water runoff can be made.
- Additional benefits include the ability to understand the impacts of wild land fire events on residential structures.

Other Alternatives: None
Priority: This project has the potential to help the City of Westminster and it's departments have a clearer picture of residential building footprints in respect to hazardous areas, mainly flood zones. Currently the City has the ability to see parcel location/ relationship to hazardous area but not actual building footprints. This project would assist the Fire Department greatly, as it would improve the CAD system and enhance response efficiency etc. While this project would be extremely beneficial, it is of **low priority** for the City when compared to the other outlined projects in this plan.
Cost Estimate: $100,000
Benefits (Avoided Losses): Provide the resources to make educated decision on the effects that a severe rainstorm would have on the City's stormwater drainage system. Potential for mapping outcomes for different size events. If deemed to be a significant issue, further mitigation projects could ensue and would therefore, mitigate against property damage and loss and potential casualties in the event of a severe rainstorm.
Potential Funding: City of Westminster Public Works & Utilities
Schedule: Unknown

4. Continued compliance with NFIP and potential improved CRS rating
Issue/background: A community's participation and compliance with NFIP ensures that a community manages ordinances to reduce future flood damage. In exchange, the NFIP makes Federally backed flood insurance available to homeowners, renters, and business owners in these communities. The Community Rating System (CRS) is a way to gauge a community's compliance level and makes community with higher (better) CRS ratings eligible for insurance discounts. The City of Westminster currently stands with a CRS rating of 6. It is the goal of the City to continue to comply with NFIP standards and potentially take steps that would further improve the rating from a 6 to a 5.
All three goals listed above could be address with the continued compliance of the CRS rating in Westminster.
Other Alternatives: continued compliance and maintenance of CRS 6 rating
Responsible Office: Community Development
Priority: low-since the City of Westminster has a reputable CRS rating, this project can be considered more of a goal than a priority.
Cost Estimate: unknown
Benefits: If the City were to improve their CRS rating, the potential for further discounts on insurance would exist.
Potential Funding: City of Westminster
Schedule: continuous

5. Drought Response Program Update

Issue/background: Historically, Colorado and the Front Range have experienced drought events throughout history. Droughts will continue to occur and the City of Westminster (City) is committed to recognizing droughts that will affect water supply availability and to respond appropriately to these droughts. In 2002, the City of Westminster developed a drought guidance document that outlines specific options available to the City during a severe drought. This project is intended to update current documents and plans, develop new tools, and research ways the City may further mitigate the effects that a severe drought would have on the City. Some aspects of the drought program update include:

1. GIS overlay of the irrigated areas within the City for watering restrictions.
2. GIS overlay that identifies unrestricted water usage during drought free periods. This would help to determine the potential water reductions available for each account to conserve water for the City during a drought.
3. Drought response strategies, including options for watering restrictions and public education.

This mitigation action would address goals one and two as stated previously.

Other Alternatives:
Responsible Office:
Priority: Since drought regularly affects this region, it is important that the City of Westminster take steps to improve plans and other documents to assist in identifying droughts that may impact the City's water availability and mitigating these drought conditions. This project is considered **medium** priority for the City.
Cost Estimate:
Benefits: This project is intended to further mitigate the affects that a severe drought would have on the City of Westminster by improving the drought guidance document by adding tools for drought response planning. This document and the related resources would improve efficiency in handling drought conditions and would help the City to gain a better assessment of drought conditions and respond suitably to these conditions.
Potential Funding: City of Westminster Community Development, City of Westminster Public Works and Utilities.
Schedule: unknown

6. Natural Hazards Public Information Booths

Issue/Background:
The City of Westminster strives to keep its citizens and employees educated about ways that they can help protect themselves, their families, their homes and their businesses from the potential destruction that can be caused by a natural hazard event. Having information about the potential hazards, available resources and prevention information is essential for helping to mitigate the effects of a potential disaster. Information on the following hazards will be provided:

- Drought
- Dam Failure
- Earthquakes
- Floods
- Human Health Hazards
- Severe Weather
    - Extreme Temperatures
    - Hailstorms
    - Heavy Rains/Storms
    - Lightning
    - Windstorms
    - Winter Storms
- Wildland Fire
- Tornadoes

Each summer, the Westminster Fire Department sets up a display and information booth at the City's Summer Celebration. In the fall, the City hosts a Business Appreciation Event, which attracts businesses from around the City. The HMPC decided that these events would provide the perfect opportunity for displaying information about the natural hazards that have the potential to occur with-in the City. Representatives from the City's Fire Department will be available to answer any questions and the City's adopted Natural Hazards Mitigation Plan would be available for review.

Other Alternatives: n/a

Responsible Office: City of Westminster Fire Department/ Emergency Management Coordinator

Priority: The City of Westminster sees Public Information relating to hazards and prevention as one of its top priorities. Westminster Fire Department has an extensive Public Information program that is already in place. The development of this mitigation action into the program serves to strengthen the program by adding another resource for information obtainment in regards to natural hazards. Therefore, the HMPC sees this mitigation action as being **medium** priority.

Cost Estimate: This mitigation action would come at virtually no cost, except for display construction costs, which are minimal.

Benefits: Further educates the public on the natural hazards that could potentially affect their homes, businesses, families etc. Provides resources for information obtainment and increases awareness for self-preventative measures. Provides the public with an opportunity to review the City of Westminster's Natural Hazards Mitigation Plan and the opportunity to ask questions.

Potential Funding: Westminster Fire Department

Schedule: present information display at this years annual Business Appreciation Event on Oct 10th, 2010 and continue displays from there forward.

7. Natural Hazards Information Pamphlet

Issue/Background:

The City of Westminster strives to keep its citizens and employees educated about ways that they can help protect themselves, their families, their homes and their businesses from the potential destruction that can be caused by a natural hazard event. Having information about the potential hazards, available resources and prevention information is essential for helping to mitigate the effects of a potential disaster. The pamphlets will provide information on the following hazards, which were all identified as potential hazards in this plan:

- Drought
- Dam Failure
- Earthquakes
- Floods
- Human Health Hazards
- Severe Weather
    - Extreme Temperatures
    - Hailstorms
    - Heavy Rains/Storms
    - Lightning
    - Windstorms
    - Winter Storms
- Wildland Fire
- Tornadoes

The City of Westminster currently has various information pamphlets available to the public that provide information about specific hazards. However, the HMPC thinks that developing an All-Hazard Information Pamphlet would be a comprehensive way for providing hazards information to the public. The pamphlet would include information on each hazard that could potentially occur in Westminster, self-preventative measures, information on what to do if a hazard event occurs and resources for further information.

Other Alternatives: n/a

Responsible Office: Westminster Fire Department/ Emergency Management Coordinator

Priority:

The City of Westminster sees Public Information relating to hazards and prevention as one of its top priorities. Westminster Fire Department has an extensive Public Information program that is already in place. The City also will continue to update the website that provides hazard and emergency preparedness information as well. The development of this mitigation action into the program serves to strengthen the program by adding another resource for information obtainment in regards to natural hazards. Information pamphlets will be made to be easily obtained by the public. Therefore, the HMPC sees this mitigation action as being **medium** priority to help mitigate the potential effects of a hazard event.

Cost Estimate: Document creation costs would be the minimal cost associated with implementing this mitigation action.

Benefits: Further educates the public on the natural hazards that could potentially affect their homes, businesses, families etc. Provides resources for information obtainment and

increases awareness for self-preventative measures. Also provides information in an easy to read, concise format that can be saved for later reference.
Potential Funding: Westminster Fire Department
Schedule: Scheduled for completion by Jan 1st 2011

The City of Westminster realizes that priorities of these projects may change and new mitigation projects may arise during this plan's operational period due to a natural hazards event or general policy change.

6 PLAN ADOPTION

Requirement §201.6(c)(5):
[The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, county commissioner, Tribal Council).

The purpose of formally adopting this plan is to secure buy-in from the City of Westminster, raise awareness of the plan, and formalize the plan's implementation. The adoption of this plan completes Planning Step 9 of the 10-step planning process: **Adopt the Plan.** The governing board for the City of Westminster, the City Council, has adopted this multi-hazard mitigation plan by passing a resolution *(to be determined pending FEMA conditional Approval)*. A copy of the resolution and the executed copy are included in the appendices section of this document *(pending)*.

7 PLAN IMPLEMENTATION AND MAINTENANCE

Requirement §201.6(c)(4)(i):
[The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

7.1-Implementation

All future mitigation projects are identified in other City planning documents, including; The 2007 Storm Drainage Study, the Westminster Comprehensive Plan and the Emergency Plan and Management System. The City continues to implement policies and programs to reduce losses to life and property from natural hazards. This plan references related planning efforts and mitigation programs and recommends implementing projects, where possible, through these other program mechanisms. This effort is achieved through the routine actions of monitoring agendas, attending meetings, and promoting a safe, sustainable community.

Additional mitigation strategies could include consistent and ongoing enforcement of existing policies and vigilant review of City programs for coordination and multi-objective opportunities. Simultaneous to these efforts, it is important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the more costly recommended actions. This will include creating and maintaining a bank of ideas on how any required local match or participation requirement can be met. When funding does become available, the City of Westminster will be in a position to capitalize on the opportunity. Funding opportunities to be monitored include special pre- and post-disaster funds, state or federal earmarked funds, and grant programs, including those that can serve or support multi-objective applications.

As the Front Range and the City of Westminster continue to grow and advance, this plan will play a crucial part in identifying potential hazards and risks. For example, when the FasTracks planning and construction comes to Westminster, significant parts of the Natural Hazards Mitigation plan will be considered and implemented into project relative documents. It is evident that the City strives to look into the future concerning natural hazards and mitigation efforts. The FasTracks drainage project that is outlined in this plan is an example of this outlook.

7.2-Maintenance

Plan maintenance implies an effort to monitor and evaluate overall City planning initiatives and identify changing circumstances.

Maintenance Method and Schedule

In order to update the mitigation strategies, the City's Emergency Management Coordinator will revisit this plan annually and after the occurrence of a hazard event. The City of Westminster Emergency Management Coordinator will consult with City

stakeholders. The Emergency Management Coordinator will also assure that a five-year written update to be submitted to the state and FEMA Region VIII, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule. Evaluation of mitigation strategies in this plan recommends using existing plans and/or programs to implement hazard mitigation in the City. The City has and will continue to implement policies and programs to reduce losses to life and property from natural hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing projects, where possible, through the following mechanisms:

- City Code of Regulations
- Stormwater management plans
- Fire plans
- Capital improvement plans and budgets
- Other plans, regulations, and practices with a mitigation focus such as the City's Emergency Plan and Management System.

Continued Public Involvement

The City of Westminster will provide copies of the final plan for Library use and will maintain an internet link for public viewing. The City of Westminster's Emergency Management Coordinator will meet periodically with other City departments to continue mitigation planning and coordination. The City Emergency Management Coordinator will also be available for public inquires concerning the plan.

Appendices

A. References/ sources

1. ***City of Boulder's Multi-Hazard Mitigation Plan in correlation with AMEC Earth and Environmental***
2. ***City of Westminster***- *http:// ci.westminster.co.us/*
3. ***City of Westminster Emergency Plan and Management System***
4. ***Colorado Department of Public Health and Environment*** - *www.cdphe.com*
5. ***Colorado Division of Local Affairs***- *http://doloa.colorado.gov*
6. ***Coloradorealestatehomesource.com***
7. ***DRCOG Natural Hazards Mitigation Plan***- *www.drcog.org*
8. ***Drought and Water Supply Assessment 2004***- *http://cwcb.state.cololorado.us*
9. ***Federal Emergency Management Agency***- *www.fema.gov/*
10. ***High Plains Regional Climatic Center***- *www.hprcc.unl.edu/*
11. ***National Climatic Data Center***- *www.ncdc.noaa.gov/*
12. ***NOAA in correlation with National Weather Service and NOAA Storm Prediction Center***- *www.noaa.gov/*
13. ***Nulceus.org***
14. ***State of Colorado Natural Hazards Mitigation Plan 2004***- *www.dola.state.co.us/dem/mitigation/plan.../2008_plan.htm*
15. ***Thunder***-*http://thunder.msfc.nasa.gov/primer/primer3.html*
16. ***US Census Bureau*** –*www.census.gov/*
17. ***U.S Drought Monitor***- *http://drought.unl.edu/dm*
18. ***USGS***- *www.nationalatlas.gov*
19. ***USGS Earthquake Hazards Program*** – *earthquake.usgs.gov/*
20. ***Western Regional Climate Center***-*www.wrcc.dri.edu/*

B. Meeting Attendees and Agendas

**The list below is not a comprehensive list of all meetings that took place during the planning process. A more detailed list of meeting dates and titles is located in Section 3 Planning Process.*

Formal Meeting Attendee Roster

Hazard Mitigation Kick-Off Meeting- HMPC Participant Identification and Planning Summary
May 28th 2010

Bob Booze- *Distribution and Collections Superintendent*
John Burke- *Senior Engineer*
Rick Clarke- *Utilities Operations Manager*
Lilia Colter-*Management Intern*
Heather Cronenberg- *Open Space Coordinator*
Mac Cummins-*Planning Manager*
Jerri Elliot-*Senior Management Annalist*
Doug Hall- *Deputy Chief/Administration*
Mike Happe- *Utility Planning and Engineering Manager*
Dave Horras- *Chief Building Official*
Bob Krugmire-*Engineer*
Dave Loseman-*Senior Projects Engineer*
Dave Murray- *GIS Coordinator*
Carey Rangel-*Environmental Annalist*
Mike Reddy- *Emergency Management Coordinator*
Dan Strietelmeier-*Senior Engineer*

Formal Meeting Attendee Roster

Kick-Off Meeting with HMPC; Planning Process; Hazard Identification Updates
January 7th 2010

John Burke- *Senior Engineer*
Deanna Butterbaugh- *State Mitigation Specialist*
Lilia Colter-*Management Intern*
Heather Cronenberg- *Open Space Coordinator*
Mac Cummins-*Planning Manager*
Jerri Elliot-*Senior Management Annalist*
Mike Happe- *Utility Planning and Engineering Manager*
Dave Horras- *Chief Building Official*
Bob Krugmire-*Engineer*
Dave Loseman-*Senior Projects Engineer*
Dave Murray- *GIS Coordinator*
Carey Rangel-*Environmental Annalist*
Mike Reddy- *Emergency Management Coordinator*
Dan Strietelmeier-*Senior Engineer*
Kathy Workman- *State Mitigation Specialist*

Meeting Agenda

- **Hazard Mitigation Plan summary and progress update**
- **Mitigation Action's discussion**
- **Mitigation Action prioritization**
- **Departmental information**

Formal Meeting Attendee Roster

Drought Response Program Update Mitigation Action Meeting
June 8th 2010

Lilia Colter- *Management Intern*
Stuart Feinglas- *Engineer*
Bob Krugmeier- *Water Resource Annalist*
Mike Reddy- *Emergency Management Coordinator*

Meeting Agenda

- **Discuss the City's current drought plan and talk about continued drought programs for mitigation purposes**
- **Drought information for the Plan**
- **Drought management plan description**

Formal Meeting Attendee Roster

Stormwater Drainage Mitigation Actions
June 8th 2010

John Burke- *Senior Engineer*
Lilia Colter- *Management Intern*
Dave Downing- *City Engineer*
Mike Reddy- *Emergency Management Coordinator*

Meeting Agenda:

- **Discuss stormwater projects that have to do with mitigation**
- **Discuss City's goals for continued NFIP compliance**
- **Stormwater mitigation project descriptions**
- **Property acquisition projects**

Formal Meeting Attendee Roster

Hazard Mitigation Plan Maps
June 8th 2010

Lilia Colter- *Management Intern*
Sandy Malesky-*GIS Specialist*
Mike Reddy-*Emergency Management Coordinator*

Meeting Agenda:

- **Bring previous maps and discuss re-works of the maps to include more information**

Formal Meeting Attendee Roster

GIS Impervious Mapping Mitigation Action
June 14th 2010

Dave Murray- *GIS Coordinator*
John Burke- *Senior Engineer*
Stuart Feinglas- *Water Resource Annalist*
Carmen Linnebur-*Lead Software Engineer*
Steve Baumann- *Assistant City Engineer*

Meeting Agenda

- **Discuss Impervious mapping project with benefit analysis for the City departments**
- **Project summary**

C. Plan Adoption

Upon FEMA conditional approval, City adoption documents will be included under this heading.

D. City of Westminster Emergency Plan and Management System

WESTMINSTER

Staff Report

Information Only Staff Report
October 18, 2010

SUBJECT: Update on Community Recycling Services Stakeholders' Involvement Process

PREPARED BY: Rachel Harlow-Schalk

Summary Statement:

This report is for City Council information only and requires no action by Council.

Staff would like to make City Council aware of the public engagement process that is proposed to develop recommended revisions to the Solid Waste Collection Code. As Council will recall from a previous staff report and Council study session discussion, the following ideas for expanding the City's recycling will be discussed with various stakeholders:

- Setting a recycling diversion rate goal for all of Westminster
- Requiring all licensed trash collectors to offer recycling to multifamily units and commercial customers and allowing these complexes to place recycling dumpsters in areas that may be unenclosed
- Defining homeowner associations as residential customers for purposes of increasing availability of private recycling services and
- Establishing a pay-as-you-throw trash collection system for all single family residences.

Background Information:

In coordination with the Environmental Advisory Board (EAB), Staff has prepared a robust engagement plan to involve citizens, trash collectors and businesses in the development of proposed revisions to the Solid Waste Collection Code.

Based on feedback from City Council and the EAB, Staff has extended the length of time of the engagement and drafting of Code revisions to between nine and twelve months. The EAB and the City's internal Green Team have prepared an engagement process that will seek out diversity of opinion as well as use a variety of tools to engage the community.

Staff will first meet with licensed trash collectors to ask them to react to the recommended revisions to the Solid Waste Code and ask them what kind of pay-as-you-throw program might work for their operation. The collectors have been engaged in this process from the beginning, including discussions regarding pay-as-you-throw as a possibility, and Staff wants to continue this level of involvement. After individual meetings with Staff, all of the collectors will be asked to attend a larger overview meeting to discuss conclusions reached from meetings on pay-as-you-throw service possibilities.

The next step following the meetings with the haulers will be two "introduction and reaction" meetings held during the second week of November to educate the community on what has been learned from the trash and recycling service research and from meetings with licensed trash collectors. Citizens will also be asked for their feedback on the four Solid Waste Collection revisions being investigated. Staff will be using a variety of media tools to notify the community of this first

"introduction and reaction" meeting and Council is encouraged to utilize their communication networks to notify constituents as well. Meetings will be held Tuesday, November 9 from 7-8 p.m. at the MAC and Wednesday, November 10 from 7-8 p.m. at City Park Recreation Center. Council participation is not necessary at these meetings, but of course, you are welcome to attend.

These first meetings will also give Staff the opportunity to ask attendees to become involved in a Study Subcommittee of the EAB or in focus groups.

The EAB's Subcommittee will be charged with drafting revisions to the Solid Waste Collection Code possibly including a pay-as-you-throw system for the community. The Subcommittee will have diversity of stakeholders involved including:

- A homeowner association management company
- A citizen living in a group trash collection area (could be in single or multi-family dwelling)
- A non-HOA/group trash collection resident
- A resident who is not interested in recycling
- One to three (or all if interested) trash collection companies,
- A representative of a small shopping center
- A general business representative
- The EAB chairperson and additional member
- Skumatz Economic Research Associates representative
- Jane Greenfield, City Attorney's Office
- Katie Harberg, Public Information Officer
- Rachel Harlow-Schalk, Environmental and Administrative Services Officer
- Carey Rangel, Environmental Analyst and Staff Liaison to the Environmental Advisory Board

The recommended Code revisions of the Subcommittee will then be provided to licensed trash collection companies for reaction. Additionally, citizens will be asked to take part in focus groups to react to the proposed Code revisions. The EAB's Subcommittee may need to reconvene to incorporate any revisions from these meetings.

Staff will then coordinate community meetings to inform the community of recommended revision to the Code from the EAB and seek input of the community on recommended revisions before drafting a final recommendation to Council.

As noted earlier, Staff will use a variety of media tools to keep the community informed and seek their involvement. Some of the tools Staff will be using include a hotline for questions, press releases, an email account for questions and answers, and a designated webpage for all information with a questions and answers area.

This outreach project helps achieve City Council's community recycling objective within their Beautiful and Environmentally Sensitive City Strategic Plan Goal.

Respectfully submitted,

J. Brent McFall
City Manager

W E S T M I N S T E R

Staff Report

Information Only Staff Report
October 18, 2010

SUBJECT: Capital Improvement Program (CIP) Project Status Report – 2010 Second Period

PREPARED BY: Aric Otzelberger, Senior Management Analyst

Summary Statement:

This report is for City Council information only and requires no action by City Council.

Attached is the second period status report for 2010 on Capital Improvement Program (CIP) projects. The project name, a brief description and status update is provided for each project. If City Council has questions about any of the projects included in this report, Staff will follow up with additional information.

Background Information:

Staff has compiled the attached status report on Capital Improvement Program (CIP) projects for activities through the first reporting period of 2010, ending August 31.

The "Updated" column on the far left side of the attached report will have a mark (▶) in it denoting that the project information (such as the description, status, budget, projected completion date or percent complete) has been updated, or it will have "NEW" typed in to identify any new projects added to the CIP Status Report since last period, or it will have "TO BE CLOSED" typed in to identify projects that have either been closed in the financial management system or about to be closed. If a project does not have a mark designating that an update has been provided, it does not necessarily mean that no work has been conducted on the project during the most recent period; it simply means that nothing substantial enough to report to City Council has occurred that warrants providing an update.

The definition for each of the columns included in the report is noted on the attached document ("Attachment A: Definitions – Capital Improvement Program (CIP) Project Status Report"). The definitions are utilized internally to ensure that staff is reporting information as consistently as possible.

The project name, a brief description of the project, project status, project budget, project expenditures as of August 31, 2010, the project manager(s), engineering firms/contractors, start date, projected completion date and percent complete is provided for each project on the "Capital Improvement Program – Major Projects" pages (Attachment B), and "Capital Improvement Program – Ongoing Projects" pages (Attachment C).

The projects are sorted based on whether they are ongoing in nature or have a definitive beginning and completion date. Some projects may include funding from both the General and Utility Funds but are listed only once, reflecting the consolidated total in this report. Those projects on the Ongoing Projects pages (Attachment C) do not include a start date, projected completion date or a percent complete due to the nature of these projects (i.e., they are continuing projects from year to year).

Major Projects are expensed each year rather than waiting until each project is substantially complete. As such, for continuity in this report, Staff is reporting the revised budgets for each project, excluding any expensing required by the auditors, so that City Council and the public may see the full cost of the project rather than an annually modified amount that does not accurately reflect the full cost and scope of the project. On the Ongoing Projects pages, the capitalized/expensed amounts will continue to be shown so that City Council and the public may see what funds are actually available for these projects that are continuous in nature.

Staff will continue to provide this report to City Council three times per year on a trimester basis. If City Council has questions about any of the projects included in this report, Staff is available to meet individually with City Council members and provide additional information on the projects included within this document or provide appropriate information as requested.

Respectfully submitted,

J. Brent McFall
City Manager

Attachments

– DEFINITIONS –
Capital Improvement Program (CIP) Project Status Report

Updated – The Updated column is intended to simplify the review of the report by drawing attention to those projects with new updates since the last report. The column will have a ▶ mark in it denoting that the project information has been updated, or will include "NEW" to identify any new projects that may have been added since the last report via supplemental appropriations (such as from carryover, the receipt of a grant or the subdividing of a larger project into smaller components), or will include "TO BE CLOSED" if the project will be closed before the next report. If a project does not have a mark designating that an update has been provided, it does not necessarily mean that no work has been conducted on the project since the previous report; it simply means that nothing substantial enough to report to City Council has occurred that warrants providing an update.

Project Title/Description – The Project Title is common name utilized by Staff in identifying the project. The Project Description is a brief description of the project, specifically focusing on the scope of the project for which funds are budgeted (i.e., are the funds appropriated for the full project, from design to construction, or simply the design/engineering component of the project).

Project Status – A brief update as to the progress made on this project, providing information such as how much work has been completed, if the project is on schedule, ahead or behind, if any challenges have developed as a result of contractors or the weather, etc.

Budget – For Major Projects, this is the total amount City Council has appropriated via the current and/or prior years' budgets. Some projects have funding from multiple sources, i.e., the General and Utility Funds; in these cases, the combined total for the project is shown in this report.

For Ongoing Projects, this is the amount that has been entered into the financial management system that City Council has appropriated via the current or prior years' budgets. This amount may be different from the total amount that has been appropriated over the years, since many projects that are ongoing have received funding for many years, in some cases over ten years. Showing the cumulative budget since project inception is not only difficult to gather given the conversion to a new financial management system, but is not representative of the funds actually available to spend on these ongoing projects. Some projects may include open contracts from which some expenditures have been made but the "Spent" column reflects only those actual expenditures, and therefore the associated encumbrances (i.e., financial obligations) are not necessarily reflected in these figures.

Spent – Actual expenditures made to date, *excluding* encumbrances.

Project Manager(s) – The City staff member(s) overseeing the completion of the project. Regardless of having an external project manager, a City staff member will always oversee City projects.

External Project Manager Utilized - This column identifies if the primary project lead is a City staff member or an outside contractor. On complex construction projects of approximately $3-5 million or more, the City is likely also to hire a professional project manager on a contracted basis (in addition to an independent project construction inspector) to provide overall project management under the direction of City staff. If an external project manager is utilized, the name of the contractor is listed in this column.

Engineering Firms Or Contractors – Lists all outside firms the City has hired to work on this project, excluding the external project manager if applicable.

Start Date – Identifies the month and/or year in which the project was initiated (noted on the Major Projects' pages only).

Projected Completion Date – The projected/targeted date for which the project is anticipated/scheduled to be complete (noted on the Major Projects' pages only).

Percent Complete – Identifies the amount of the overall project, as funded via City Council appropriations and defined in the Project Title/Description that is complete. It is based solely on what has been funded to date and may not include actual completion/construction of the project. There will not necessarily be a one-for-one correlation between the percent complete and the amount expended. (For example, City Council may have funded the design only of a project and based on this funding level, the project may be 75% complete, which would be reflected in the Percent Complete column. However, when looking at the overall project, which might be for the construction of a new bridge, the design component is only 5% of the overall project; however, City Council has not appropriated the construction funds as of yet and therefore this percent complete would remain at 75% until the total project funds are appropriated. Once the entire project budget is appropriated, the percentage complete column would be adjusted to 5%, reflecting the percentage of the total project that the design work represents. Some projects may be 100% complete but may reflect some funds remaining in the project and the project remains on this report due to warranty work that is yet to be completed; once warranties expire, the project will be closed.)

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
	GENERAL CAPITAL IMPROVEMENT FUND									
NEW	**68th Avenue and Utica Street Improvements -** The City's Intergovernmental Agreement (IGA) with School District 50 regarding Westminster High School obligates the City to construct roadway improvements to 68th Avenue and Utica Street abutting the school property. This project will utilize a portion of the $1.2 million in funds from School District 50 in accordance with the terms of the IGA. City street maintenance operating funds will be used to reconstruct 68th Avenue from the school's east boundary to Lowell Boulevard. Any funds remaining in this project will be applied to the Bradburn Boulevard realignment project in accordance with the terms of the IGA.	The project was completed on August 15 in time for the opening of the new Westminster High School. The project included the addition of landscaping along the west side of Utica Street. $225,000 in excess funds from this project have been committed to the Bradburn Boulevard realignment project per the IGA. This project is in a one-year warranty period and can be closed upon completion of that period.	$1,300,000	$558,305	Dave Loseman (CD)	City Employee	Calibre Engineering, Inc.	10/2009	8/2010	100%
▶	**80th Avenue Bridge/U.S. 36 Enhancements -** This project will upgrade the standard plain bridge that the Colorado Department of Transportation (CDOT) typically installs with architectural enhancements similar to those installed on other recent bridges in the City.	Construction began in May 2010. This commencement date was two months later than originally anticipated due to delays by CDOT. In August 2010, CDOT announced that the opening of the new bridge would not occur until spring 2011 due to unanticipated utility conflicts.	$600,000	$119,856	Dave Downing (CD)	CDOT	DTJ Design (design); Structures Inc. (construction)	9/2008	5/2011	100% design; 10% construction
▶	**104th Avenue and Sheridan Boulevard Intersection** - This project will provide double left turns for both north-bound and south-bound Sheridan Boulevard and three through lanes for east-bound 104th Avenue approaching Sheridan Boulevard and through the intersection. The project also includes channel improvements to Hylands Creek immediately south of 104th Avenue. The channel improvements will be partly funded by the Urban Drainage and Flood Control District.	The project is complete. The project account is still active in order to fund future wetland monitoring requirements under the terms of the City's permit with the Corps of Engineers. A wetland monitoring report was submitted in 2009. Wetland monitoring reports will be required each year until 2012.	$3,089,708	$2,983,732	Dave Loseman (CD)	City Employee	Burns & McDonnell (design); Castle Rock (construction)	8/2001	12/2008	100%
▶	**112th, Federal Boulevard to Huron Street** - This project includes the design and construction of roadway improvements to 112th Avenue between Federal Boulevard and Huron Street. The design includes the widening of 112th to minor arterial standards within the limits mentioned to accommodate increased traffic from the City's recently completed 112th and Federal intersection improvements and The City of Northglenn's 112th "flyover" of I-25. This project will also replace the existing 4-foot wide attached sidewalk and will install a new 8-foot wide sidewalk between Navajo Street and Huron Street on the north side of 112th Avenue.	The project was completed in October 2009. The project included an overlay of 112th Avenue between Clay Street and Federal Boulevard. The project is in a 1-year warranty period and can be closed once that period ends in October 2010.	$1,401,050	$1,380,736	Dave Loseman (CD)	City Employee	JR Engineering (design)	7/2004	10/2009	100%
NEW	**120th Avenue/I-25 Bridge Enhancements** - This project was sponsored by the Colorado Department of Transportation (CDOT) and the cities of Westminster and Northglenn participated by funding certain aesthetic enhancements to the bridge structure. Westminster served as the “local agency” responsible to the State for the payment of all aesthetic enhancement costs for the bridge. Northglenn, in turn, was contractually obligated to pay its share of these costs to Westminster. The payment from Northglenn was received in late December 2008 and not separated out of the 2008 carryover. As such, these 2009 carryover funds will be used to make the final payments to CDOT for this project.	The physical construction of this project is complete. Payment of Northglenn's share of the aesthetic bridge enhancements will be made to CDOT in September 2010.	$120,000	$0	Dave Downing (CD)	Colorado Department of Transportation	Frank Miltenberger (design)	6/2003	9/2010	100%
▶	**124th & Huron Street Intersection Improvements -** This project is jointly funded by the City and the Adams 12 Five Star School District to improve roadway turning movements, add lanes and to add the west bound leg to the existing traffic signals. The City and the School District have agreed to share the estimated project cost of $418,000 equally ($209,000 each). The City is responsible for the project management including design, construction management and contracting for the construction.	Construction of the intersection improvements was completed in 4Q 2008. The project account can be closed when cost participation provisions of an Intergovernmental Agreement (IGA) with Adams County School District 12 are carried out during 4Q 2010.	$700,874	$585,144	Steve Baumann (CD)	City Employee	Stolfus & Associates, Inc. (design); Goodland Construction (construction)	11/2007	12/2008	100%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
NEW	**128th Avenue & Huron Street Landscaping -** The City's Intergovernmental Agreement with School District 12 (SD 12) regarding Mountain Range High School obligates the City to build landscaping along 128th Avenue and Huron Street, abutting the high school site. This project will utilize $93,708 in existing SD 12 school land dedication funds to construct the improvements.	In-house design is currently underway on this project and will be completed in 4Q 2010. The project will be bid for construction so landscape improvements can be completed during 2Q 2011.	$93,708	$0	Dave Loseman (CD)	City Employee	City Staff (design)	8/2010	6/2011	10% design
▶	**144th Avenue: Zuni to Huron -** This project will fund design and construction for the widening 144th Avenue between Huron and Zuni Streets. With the opening of The Orchard at Westminster, it is anticipated that a significant increase in traffic will occur along 144th Avenue between Huron Street and the western City limits at Zuni Street. The existing two-lane road will be widened to arterial street standards.	Roadway widening work was substantially completed in October 2009. Due to a favorable bidding climate and astute project management, the City realized $2.7 million of savings with this project, which was utilized to assist with the City's financial strategy for the recession. The annexation of the right-of-way for 144th Avenue between Tejon Street and Zuni Street was completed in 1Q 2010, which was an obligation outlined in the City's IGA for this project with Adams County. This annexation also allowed for the annexation of the City's open space parcel at the southeast corner of 144th Avenue and Zuni Street. This project is currently in a one-year warranty period.	$4,772,645	$4,039,506	Dave Loseman (CD)	City Employee	Felsburg, Holt & Ullevig	1/2007	5/2010	100%
▶	**Armed Forces Tribute Garden** - This park honors the six armed services (Army, Navy, Air Force, Coast Guard, Marine Corps and Merchant Marine) and is located at City Park. The design includes a fountain, brick pavers, seating, shade structures, irrigation and plant material.	Fundraising efforts continue. Phase One of the project is complete. Phase Two, consisting of 6 shade structures (one for each service branch), is anticipated to be completed in 1Q 2011. This phase will be completely funded by donations from the Westminster Legacy Foundation and the Westminster 7:10 Rotary.	$1,490,797	$1,443,525	Bill Walenczak (PR&L)/ Becky Eades (PR&L)	City Employee	Triple M Recreation	11/2010	Phase 2: 3/2011 (shade structures)	Phase 1: 100%; Phase 2: 0%
▶	**Big Dry Creek Trail at Old Wadsworth Boulevard -** This project includes the construction of a bridge on Wadsworth Boulevard over Big Dry Creek for a grade separated pedestrian crossing.	Construction of this project was completed in July 2009. The project will remain active to pay for wetland monitoring requirements until the end of 2012. The City has received its Federal reimbursement of $2,144,800 for this project.	$5,046,725	$4,958,593	Dave Loseman (CD)	City Employee	Muller (design); J.F. Sato (construction)	8/2005	7/2009	100%
NEW	**Bowles House Improvements** - This project will fund rehabilitation of the east porch and repair a significant wall crack of the Edward and Mahalia Bowles home at 3924 West 72nd Avenue. This structure is a significant historical site and is listed on the National Register of Historic Places.	The State Historical Fund awarded the City a $72,000 grant for this project and City Council appropriated $24,000 as the required 25% match. The City will be reimbursed by the State Historical Fund for expenses after they are incurred.	$96,000	$0	Patrick Caldwell (CD)/Laurie Brandt (CD)	City Employee	TBD	3/2011	6/2011	0%
TO BE CLOSED	**Bradburn Boulevard, 73rd Avenue to Turnpike Drive Sidewalk Project -** This project includes the replacement of the existing 4-foot wide sidewalk along the east side of Bradburn Boulevard with an 8-foot wide sidewalk. Additional features include a new pedestrian bridge over the Allen Ditch and curb ramps at all intersection crossings. This project is being funded by the Federal Government under the American Reinvestment and Recovery Act (ARRA) with City participation in the amount of $30,000.	Construction began in June 2009 and the project was completed in September 2009. Federal reimbursement funds ($244,195) have been received by the City. The project can be closed since the one-year warranty period is complete.	$30,000 City; $260,000 Federal	$286,319	Dave Loseman (CD)	City Employee	Felsburg, Holt & Ullevig	3/2009	9/2009	100%
NEW	**Bradburn Boulevard Re-Alignment -** This project will create a four-legged intersection at the currently signalized junction of 72nd Avenue and Raleigh Street, which will facilitate the safe and convenient movement of traffic in this area. The total project is estimated to cost over $4.0 million. A $1.1 million grant from the State's Special Bridge Fund in 2013 will assist in the reconstruction of the Little Dry Creek drainage crossing at this intersection. Approximately $225,000 in excess funds from the 68th Avenue/Utica Street project are also committed to the project. Funding for the initial work is from the City's share of Adams County road tax revenues and 2010 Community Development Block Grant (CDBG) funds, which are also anticipated to be used on this project in 2011 and 2012. This first efforts in 2010 and 2011 will be the preliminary design of the roadway re-alignment and perhaps some of the necessary right-of-way acquisitions.	Preliminary design will commence in August 2010.	$200,000	$0	Steve Baumann (CD)	City Employee	Jacobs Engineering Group (preliminary design)	8/2010	5/2011 (preliminary design)	0%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**CEP Master plan** - Phase II - Funds to be used as match with Adams County School District No. 50 funds to plan for and make physical improvements to the District Career Enrichment Park (CEP).	The draft plan has been prepared and is to be presented to School District 50 for discussion in September 2010. Final revisions to the plan will occur thereafter.	$339,018	$319,041	Tony Chacon/Patty McCartney (CD)	City Employee	Perry-Rose, LLC.	6/2002	12/2010	75%
▶	**City Park Playground and Shelter -** This project consists of adding a play lot and shelter near the fields at City Park. Citizens have been requesting a playground and these funds will allow this playground to become a reality and allow for a small picnic shelter to be constructed. The location of the playground has been shifted to the NE corner of the soccer fields after an extensive site evaluation.	This project is complete. Staff was awarded a $200,000 Jefferson County Open Space Grant for this project and had applied for reimbursement. The project can be closed following completion of a one-year warranty period.	$350,000	$321,873	Kathy Piper (PR&L)	City Employee	Goodland Construction, Inc.	10/2009	8/2010	100%
▶	**City Park Recreation Center Aquatic Enhancement -** Funded in part by the 2007 POST bond issue, this project is for the renovation of the City Park Recreation Center aquatics area and locker rooms, to include additional amenities into the pool area to increase the play-ability of the pool area, including a lazy river feature, a new waterslide and an outdoor splash pad. Locker room renovation will include the addition of family changing rooms.	The grand opening of the facility was held on March 20. Minor warranty work remains on the interior of the project. The outdoor "Splash Garden" and landscaping were completed in May 2010. This project has a 2-year warranty period and can be closed upon the conclusion of this period.	$6,793,881	$6,705,112	Becky Eades (PR&L)	City Employee	Sink Combs Dethliefs (design); Adolphson Peterson (construction)	11/2007	5/2010	100%
	City Park Recreation Center Concrete Replacement - This project will fund the removal and replacement of the deteriorated concrete service drive at City Park Recreation Center.	This project is complete and currently in a one-year warranty period. Once the warranty period is complete, this project can be closed out.	$110,000	$104,061	Becky Eades (PR&L)	City Employee	Adolphson Peterson Construction	1/2010	3/2010	100%
	Community Development Building Division Operating Computer System Software - This project is for the replacement of antiquated software currently being used to manage building permits, inspection information and rental property maintenance records.	Staff is currently testing mobile field units for building inspections. Accela is introducing new mobile building inspections software in the coming months, so Staff is awaiting that release versus purchasing the current software. This will avoid having to transition to the new software shortly thereafter.	$111,381	$0	Dave Horras (CD)	City Employee	Accela, Inc.	1/2007	12/2010	50%
▶	**Energy Efficiency and Conservation Block Grant (EECBG) Projects** - This project is funded by the federal 2009 ARRA stimulus package to improve energy efficiency & conservation efforts at the local level. Projects include an energy performance contract, residential & commercial rebates administered by the Governor's Energy Office (GEO), a bicycle master plan, an update to the City's Energy Code, support of the US 36 Commuter CASH program, the hiring of a new Energy & Facilities Project Coordinator and education outreach efforts in the community. All funds must be expended by 9/29/2012 per Federal requirements.	The City received official notice of award on 9/30/2009. Staff negotiated agreement with US 36 Commuting Solutions and commenced financial support of the US 36 Commuter CASH incentive program in October 2009. A consultant was placed under contract and continues to develop the City's Bicycle Master plan. The City's partnership with the Governor's Energy Office (GEO) for the Residential Energy Rebate Program is underway and some residents have received rebates through this program. Similarly, the City/GEO partnership for the Small Business Efficiency program contract has been approved and is currently underway. Educating staff and the public regarding the 2009 Energy Code adoption by the City is ongoing. Phase II of the City's Energy Performance Contract with Siemens is underway and is approximately 50% complete.	$952,800	$90,893	Barbara Opie (CMO)/ Tom Ochterski (GS)	City Employee	Various	9/2009	9/2012	45%
	FasTracks Local Match - This project is to fund the City's anticipated FasTracks local match associated with RTD's commuter rail line through Westminster. While the total cost to the local jurisdictions remains unknown at this time, it is anticipated that the City of Westminster's share will be significant. The current projections are $706.9 million for the total corridor construction cost. The local match is 2.5%, which will be approximately $17.7 million for the entire U.S. 36 corridor.	This project will hold funds for a future local contribution to the FasTracks project.	$250,000	$0	Matt Lutkus (GS)	N/A	N/A	N/A	TBD	0%
▶	**Fire EMS Field Reporting (Hardware)** - Purchase and install field reporting tablets (laptops) and software, which will be integral components to the Fire Department's records management system. Field tablets will permit fire personnel to complete all required EMS, fire and inspection reports in the field, thereby reducing the need for paper reports and improving the efficiency of operations.	Software: Bid process, vendor selection and is complete. Staff training and roll-out of system is in progress. Hardware: Staff is in the process of assessing field reporting needs and soliciting vendor proposals for the purchase of eight field laptops.	$350,000	$29,595	Doug Hall (FD)/Rich Welz (FD)/ Rick Spahn (FD)	City Employee	Alpine Software	3/2008	12/2010	75%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Firefighting Simulator/Burn Building -** This project is for the design and construction of a firefighting simulator/burn building. Plans for a new simulator include 2 burn rooms, roof chop outs, forcible entry simulator, smoke distribution system and moveable maze partition panels.	Fact finding for this project continues. This project was delayed in 2008 due to flood plain concerns. Site locations are still being considered and assessed, including the England Water Treatment Plant location. Actual construction of the structure will not take place until 2012 when necessary funds are anticipated to be available. Additional funding of $340,000 is recommended in the Proposed 2011-2012 Capital Improvement Program budget.	$352,000	$0	Bill Work (FD)/ Dennis Bishop (FD)	City Employee	TBD	6/2007	12/2012	5%
▶	**Fire Station Alarm Notification -** This project will replace and upgrade the fire station alerting system at all six fire stations. This system "awakens" personnel at night when a call for service is dispatched to a station. The existing system has been in place since 1992 and is utilizing outdated technology that is presenting reliability issues. The new system will utilize the City's computer network for increased reliability and would offer specialized notification features so only those personnel assigned to a particular type of call would be notified.	Staff toured and evaluated South Metro Fire Protection District's notification system during 2Q 2010. Staff anticipates distributing a request for bids in September 2010. Staff would then present a recommendation to City Council in late October and if approved, would proceed with installation in November.	$248,000	$0	Bill Work (FD)/Rich Welz (FD)	City Employee	TBD	6/2010	3/2011	10%
	Golf Course Restrooms - Funded mostly by the 2007 POST bond issue, this project will install four permanent restrooms/comfort stations (replacing portable san-o-lets) out on the two City golf courses (two per golf course).	This project was completed in December 2009. The contractor built the golf course restrooms as well as the Standley Lake restroom. The project is under warranty through December 2010.	$736,550	$726,965	Lance Johnson (PR&L)/ Sarah Washburn (PR&L)/ Ken Watson (PR&L)	City Employee	CG Construction, Inc.	3/2008	12/2009	100%
	Greenlawn Traffic Mitigation - This project was created to address a large number of concerns from residents over traffic issues associated with the development of Cambridge Farm and Asbury Subdivisions in the area bounded by Wadsworth Boulevard, 92nd Avenue, Pierce Street and 96th Avenue. A citizen task force identified the extension of 96th Avenue between Pierce Street and Teller Street as a solution to these concerns.	The construction of the 96th Avenue connection was completed in 2001. Remaining funds in this project will be used to pay for a specified amount of City water through 2011 to replace a small pond that was taken for the roadway construction. The completion date (2011) indicates the last year that the City will be responsible for the payment of water to the owner of one of the parcels of right-of-way taken for this project.	$9,377	$0	Mike Normandin (CD)	City Employee	Nolte (design) Asphalt Specialties (construction)	6/2000	12/2011	95%
▶	**Heritage Golf Course Expansion** - The project is to eventually construct an additional 9 holes to the Heritage Golf Course and involves negotiations with Ball Corp and the Rocky Mountain Metropolitan Airport/County staff. Phase one of the project is for the design of a 9-hole golf course expansion, which includes research and analysis, land survey, environmental assessment, schematic and design development including a grading plan.	This project remains on hold. Staff is shifting its focus on acquiring the airport leased property versus expanding The Heritage Golf Course.	$75,000	$41,897	Bill Walenczak (PR&L)/ Ken Watson (PR&L)	City Employee	Hurdzan Fry GC Design	1/2004	TBD	50%
▶	**Historical Marker Program** - This project is for the design and installation of markers throughout the City to record historical events, people and places from Westminster's history.	All 24 markers have been cast and 16 have been installed. All remaining funds will be used to pay for installation costs. Markers will be placed as street projects are completed in order to avoid the need to remove or cut concrete.	$30,000	$25,581	Vicky Bunsen (CD)	City Employee	Quinby Clune Designs; Arapahoe Sign Arts	11/2000	TBD	85%
▶	**Holly Park -** Funds to clear the existing deteriorating buildings and other costs for redevelopment on the Holly Park site. These funds are in anticipation of such redevelopment.	The site has been stabilized and is being maintained until the real estate market improves. The only remaining expenditures include maintenance of the vacant property. The City has retained a residential broker in an attempt to sell the property. There has been interest in the property from one prospective developer, but the City has not received any offers to date.	$1,125,000	$1,086,892	Dave Loseman (CD)	City Employee	n/a	7/2005	TBD	70%
▶	**Huron Street from 129th to 140th Avenues (phase one) and Huron Street from 140th Avenue to 150th Avenue (phase two)** - The project is for the design and construction of a total of nearly two and a half miles of Huron Street.	Construction of the major components of these two projects is now complete. The project account is being held open for follow-up items, including modifications to sidewalks at 148th Avenue and Huron, landscaping of the Huron Street frontage adjacent to Big Dry Creek Wastewater Treatment Facility and ongoing wetlands monitoring under a permit from the Army Corps of Engineers.	$18,821,737	$18,093,362	Steve Baumann (CD)	City Employee	Felsburg Holt Ullevig and Hamon Contractors	6/1998	6/2011	95%
▶	**IP PBX Phone System Upgrade** - The Internet Protocol Phone Bank Exchange (IP PBX) Phone System Upgrade is designed to consolidate the management and vendor deployment of all voice systems within the City of Westminster. The overall scope will touch almost every City location, and provide a standardized 4-digit dialing structure to the entire organization. This will remove the multiple, disparate systems that exist today, allowing for all City employees to utilize the same voicemail system, as well as use the same process and procedures when using the phone system regardless of location.	Phase 1 installation is complete at City Hall, City Park Recreation Center, City Park Fitness Center, Swim and Fitness Center, Christopher Fields and Standley Lake. Phase 2 is 50% complete with the upgrade at the Municipal Service Center, along with system replacement at College Hill Library and Semper Water Treatment Facility. In addition, two updates have been completed at City Hall. Staff is also implementing message waiting and Exchange voicemail integration.	$334,000	$232,992	Scott Magerfleisch (IT)	City Employee	Axess Communications	1/2009	12/2011	100% (Phase 1); 50% (Phase 2)

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
NEW	**King's Mill Building and Pool Demolition and Site Restoration -** Per City Council direction at Study Session on August 16, this project will fund the demolition of the Kings Mill building and pool per City Council direction. The existing structures will be demolished at the end of the pool season in 2010 (estimated at $50,000-60,000) due to significant structural and grading costs that would be required to repair the existing facilities. The remaining project funds will be utilized to work with the neighborhood to design a new park or playground feature at the site.	Staff has begun internal planning sessions to discuss the citizen outreach portion of this project. Staff anticipates applying for a Jefferson County Open Space grant to assist in the planned renovation of this site.	$250,000	$0	Becky Eades (PR&L)	City Employee	TBD	8/2010	TBD	2% (design)
NEW	**Little Dry Creek Dog Park** - This dog park will be located at 69th Avenue and Lowell Boulevard. This dog park will include a small and large dog area, an asphalt parking lot for 20 cars, fencing, benches, two small shade structures, dog watering and trees.	Staff is currently working on resolving some flood plain issues and anticipates soliciting bids for this project in September 2010. Construction should be completed by early 2011. The City received a $70,000 grant from Adams County Open Space in spring 2010 for this project.	$170,000	$0	Kathy Piper (PR&L)	City Employee	TBD	8/2010	1/2011	0%
▶	**Lowell Boulevard (120th Avenue to 124th Avenue) -** The project includes the widening of Lowell Boulevard between 120th Avenue and 124th Avenue to a four-lane arterial with auxiliary lanes and a raised landscape median. The City and County of Broomfield is managing this project and Westminster is participating by funding 19% of the cost of the project. This project is adjacent to the Metzger Farm Open Space and will improve traffic flow at the 120th Avenue and Lowell Boulevard intersection. The total project (Westminster's share) is estimated at $1,096,000.	The project is currently on hold by Broomfield due to Broomfield's funding concerns. A definitive start date for this project is currently unknown, but Staff anticipates project commencement sometime in 2012.	$274,000	$0	Dave Loseman (CD)	City Employee	n/a	1/2012	3/2013	0%
▶	**Lowell Boulevard Corridor Enhancement -** This project funds the partial construction of new curb and gutter and sidewalks, asphalt repaving, undergrounding of overhead utility wires and installation of landscaping along Lowell Boulevard. Besides City funds, the project will also be funded by CDBG funds ($443,000), ARRA funds ($135,000) and New Development Participation funds ($370,600).	The most recent phase of improvements to Lowell Boulevard (77th Avenue to US 36) was completed in August 2010, including a park/plaza area at the former 78th Avenue and Lowell Boulevard intersection. Some corrections work will be necessary in 2010 before a warranty period commences, which will run into 2011.	$1,210,292	$779,437	Steve Baumann (CD)	City Employee	SEH Inc. (design); New Design Construction, Inc. (construction)	2004	9/2010	95%
▶	**McKay Lake Outfall Drainage** - This is a joint project between the cities of Thornton and Westminster. It includes the planning, cost apportionment, design and construction of improvements to reduce the significant floodplain between Huron Street and Washington Street, north of 136th Avenue.	Construction of the portion of this project from I-25 east to Big Dry Creek in Thornton (Phase 3) began in 3Q 2009 and was completed in July 2010. Corrections work will be performed over the next few months. A two-year maintenance period is also part of the Phase 3 contract, which will run through 2012. Subsequent phases are dependent on development plans for west of I-25.	$7,819,577	$3,847,503	Steve Baumann (CD)	City Employee	WHPacific (design); American West Construction, Inc. (construction)	1999	7/2010 (Phase 3 construction)	100% (Phase 3)
▶	**Metzger Farm Improvements -** This is a joint project with the City and County of Broomfield through the Broomfield-Westminster Open Space Foundation. The specific parameters of the Master Plan for the Metzger Farm are being refined. These funds are for the first phase of implementation of the Master Plan once it is agreed upon, which is anticipated to include building trails and making improvements to the structural integrity of the buildings.	The master plan is complete and was approved by Council in March 2010. The City was awarded $345,900 by Adams County Open Space in the spring 2010 grant cycle for implementation of the master plan. Staff plans to move forward with an Request for Proposals (RFP) to select a firm to build the improvements in the master plan, which is tentatively planned for fall 2011. Staff hopes to begin construction in spring 2011. Staff expects construction to be completed by December 2011. Staff will also work towards designating the buildings as historic structures so that funds can be accessed to help stabilize the structures.	$190,000	$0	Heather Cronenberg (CD)	City Employee	Wenk Associates (master planning)	2008	12/2012	100% design; 0% construction
▶	**Municipal Service Center Renovation -** The project renovates the facility to address space needs at the Municipal Service Center for Public Works & Utilities and BO&M Staff.	Final completion was in January 2009 and the Architect's construction claim was settled in March 2010. The only issue remaining is outstanding landscaping warranty repairs/replacements. Staff is currently working with the project subcontractor to resolve these landscaping issues. Staff hopes to have resolution on these issues by the end of 3Q 2010.	$8,923,993	$8,621,823	Mike Wong (PWU)	City Employee	Fisher Associates/JHL Constructors	10/2000	1/2010	100%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
	Open Space Land Purchase Reimbursement - This project is for the reimbursement of the Open Space Fund for rights-of-way acquired over several open space properties purchased with open space sales tax funds.	A payment of $209,000 into this account was authorized by City Council in the Amended 2010 Budget. The total budget for this item reflects all dollars appropriated into this account to date.	$860,000	$430,000	Heather Cronenberg (CD)	City Employee	n/a	2007	1/2011	80%
	Photovoltaic Solar Panel System - The City entered into a power purchase agreement with Main Street Power for the installation of photovoltaic solar panels on four facilities at the July 13, 2009 City Council meeting. Pursuant to that agreement, the City needs to set aside the first six years of energy purchase funds as a guarantee to Main Street Power and their financers that they will be receiving the income stream from the City's energy payments. At the conclusion of the six-year period, should the City decide to exercise the option to purchase the system, these funds could be utilized towards that purchase.	As of December 30, 2009 all Photovoltaic Solar Energy Systems received commissioning and began producing solar energy at Westview Recreation Center, Municipal Service Center, Public Safety Center and City Park Recreation Center. All four locations have educational kiosks for public viewing of real time energy production. In addition to the four facilities, a monitor has been placed in the lobby of City Hall where the energy production of all four solar sites can be viewed in real time. No expenditures have been made to date as these funds will be utilized to purchase energy from Main Street Power.	$110,000	$0	Jerry Cinkosky (GS)	City Employee	Main Street Power/Simple Solar	7/2009	12/2009	100%
TO BE CLOSED	**Pool Disinfectant & Monitoring System -** This project will convert all four city pools from gas chlorine and update and automate outdated equipment, which is needed due to safety and liability issues.	The project is complete and can be closed.	$100,000	$94,156	Peggy Boccard (PR&L)	City Employee	TBD	11/2005	5/2010	100%
TO BE CLOSED	**Promenade Parking Garage** - This project is for the construction of a 600-700 space parking deck to serve the Promenade Office Building and Promenade East.	The decision has been made to discontinue this project.	$1,500,000	$0	Steve Smithers (CMO)	City Employee	TBD	TBD	TBD	0%
	Public Safety Center Fire Apparatus Parking Pad Concrete Replacement - This project is to replace the concrete fire apparatus parking pad at the Public Safety Center (PSC). The existing pad has a substantial amount of cracking with water surfacing through the cracks.	3,240 square feet of commercial driveway and 117 linear feet of vertical curb and gutter will be replaced during 3Q 2010.	$38,000	$0	Dave Cantu (PW&U)	City Employee	Keene Concrete	8/2010	9/2010	0%
	Railroad Crossing Surface Replacement Program - This program will replace railroad crossing surfaces at several crossing locations throughout the City with concrete crossing pad materials. These crossings are rated poor to very poor. This program is proposed to be funded over several years.	Staff continues to pursue a commitment from Burlington Northern Santa Fe (BNSF) Railroad to replace railroad crossing pads at the 88th Avenue crossing in 2010. Communication and coordination with BNSF continues to present challenges.	$88,000	$1,648	Dave Cantu (PW&U)	City Employee	BNSF Railroad	1/2010	TBD	5%
	Railroad Quiet Zone Study - Funds to conduct a quiet zone study associated with the FasTracks commuter rail project.	In 2009, RTD announced that they will install quiet zones at various railroad crossings as part of the FasTracks program, including all such crossings in Westminster. However, the budget is being preserved in this City project to cover any local participation costs that may be incurred.	$100,000	$0	Dave Downing (CD)	City Employee	URS (evaluations)	1/2008	1/2015	2%
▶	**Records Management** - This project is for the creation of customized retention schedules and development of City-wide policies and standards to manage documents of all media for the City of Westminster.	The Department Head group reviewed the proposed policy on 8/3/10 and directed Staff to roll the policy out user groups. Final edits and minor modifications will be completed for presentation to user groups in September before sending them to the State Archivist for approval. Following State Archivist approval, the policy will be presented to City Council for adoption during 4Q 2010.	$65,000	$65,000	Linda Yeager (GS)/Tami Cannon (CAO)	City Employee	Graham Information Management Associates	11/2007	12/2010	95%
	Salt Storage - Facility is to provide a northern location for storing road salt, truck-mounted snow plows and equipment for the Street Division. The planned location is near the Big Dry Creek Wastewater Treatment Facility.	This project is complete and currently in a one-year warranty period. Once that is complete, this project can be closed out.	$799,556	$799,556	Kent Brugler (PW&U)	City Employee	J&T Consulting JHL Constructors, Inc.	5/2007	10/2009	100%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Sheridan Widening at 72nd Avenue** - This project is for street improvements on Sheridan Boulevard from 69th Avenue to 74th Avenue and 72nd Avenue from Depew Street to Wolff Street. Generally, these improvements will result in six "through" lanes on Sheridan Blvd. with raised medians, a landscaped area and detached sidewalk on the east side of Sheridan Boulevard between 70th and 72nd Avenues, and intersection improvements at 72nd Avenue to allow double left hand turns in every direction.	The owner of Shoenberg Farms has refused payment for the cash-in-lieu of construction for the Sheridan Boulevard improvement project. Staff is discussing potential legal action. Staff has learned that the Colorado Department of Transportation (CDOT) plans to overlay Sheridan Boulevard from 68th Avenue to US 36 in the summer of 2012. Staff will request that CDOT re-stripe Sheridan Boulevard at that time in order to create a six-lane facility from 71st Avenue to 80th Avenue.	$1,605,531	$1,549,553	John Burke (CD)	City Employee	CRCC (contractor); S.E.H. (engineering inspector)	10/2005	11/2010	95%
▶	**Shoenberg Farm Restoration** - This project will help facilitate the acquisition of historic properties located at the former Shoenberg Farm site by commercial and non-profit users.	Shoenberg Farm partial acquisition was completed in 2Q 2009. The Shoenberg Farm dairy barn restoration is scheduled for completion by 3Q 2010. Grants have been awarded to fund construction documents for rehabilitation of the milk and ice house, the concrete silo, the farmhouse and the carriage house (garage). The stabilization project for the concrete silo received grant funding and is scheduled for completion by 3Q 2011.	$1,289,621	$773,062	Vicky Bunsen (CD)	City Employee	TBD	1/2009	TBD	25%
▶	**South Westminster Transit-Oriented Development (TOD) -** This design project will assist with the redevelopment projects and land acquisitions necessary to assist the forward movement of the FasTracks efforts for the RTD commuter rail station near 71st Avenue and Irving Street and the appropriate development of the surrounding area.	A draft circulation/improvement plan has been completed. A TOD land use plan revision underway. The final draft of design guidelines is completed. Staff is continuing to work on a land assemblage strategy. On July 26, 2010, City Council approved a land purchase agreement with Icon Westminster, LLC, to acquire a 6.87-acre parcel located at approximately 70th Avenue/Hooker Street for $850,000 plus closing costs. The City's TOD plan locates a commuter rail parking structure on the Icon property. Acquiring the Icon parcel is a first step to implementing the TOD plan around the station area.	$1,345,000	$1,018,172	Mac Cummings (CD)	N/A	IBI Group, Van Meter, Williams, Pollack	12/2008	TBD	75% (design and land purchase)
NEW	**South Westminster Transit-Oriented Development (TOD) Roadway Improvements -** This project will assist with the roadway improvements needed around the forthcoming FasTracks station and City proposed parking structure near 71st Avenue and Irving Street. The project funding is from the City's share of Adams County road tax revenues.	Staff is exploring various layouts and expected costs for interim access to a first phase parking garage near the proposed Westminster FasTracks station located at approximately 70th Avenue and Irving Street.	$553,839	$0	Steve Baumann (CD)	City Employee	TBD	8/2010	12/2016	1%
▶	**Swim & Fitness Center Renovation -** Funded by the 2007 POST bond issue, this project is for the renovation of the Swim and Fitness Center to include enhancements to the locker rooms and possible additions to the aquatics area.	Sink Combs Dethlefs completed a conceptual master plan and Staff presented this plan to City Council in summer of 2010. City Council authorized Staff to seek $1 million in grant funding from Adams County. Staff has presented the grant request and is awaiting a decision from the Adams County Open Space Board.	$857,190	$22,417	Kathy Piper (PR&L) Peggy Boccard (PR&L)	TBD	Sink Combs Dethlefs (design)	2/2009	12/2011	90% (design)
▶	**US 36 Commuter Trail** - This project is the design phase for a concrete trail that would extend from the Big Dry Creek trail immediately east of US-36 south between the Turnpike and Westminster Boulevard. It is a portion of the commuter trail envisioned in the US 36 Corridor Plan and is strongly supported in the EIS for that regional project.	In early 2010, DRCOG issued a notice that ARRA (American Recovery and Reinvestment) funds would not be available for these types of projects. Therefore, this project was "shelved" before design engineering got underway and will await future funding opportunities.	$39,040	$0	Steve Baumann (CD)	City Employee	Huitt-Zollars	TBD	TBD	0% design
▶	**Westminster Commemorative 100th Anniversary Photo Book** - At City Council's 2008 Budget Retreat, City Council directed Staff to fund this project at the end of 2008 through a contingency transfer from the General Fund. The Photo Book project is a 2008 citizen budget request. Members of the Westminster 100th Anniversary Book Committee, including Bob Briggs, Wilbur Flachman, and Linda Cherrington, requested funding to hire a professional editor for the project. City Council gave direction to Staff to provide $10,000 as the City's contribution to this project.	Work continues on this project with a proposed publication date of October 2010. The Centennial Book Committee hired an editorial team, Kimberly Field and Kelly Kordes Anton, in October 2009 to complete the project. All chapters have been written, reviewed and approved by the Committee. A total of seven chapters are proposed for the book, in addition to profiles of 100 history makers. The Committee continues to sell advertising into the book to pay for production. The budget amount for this project represents the City's contribution to the project.	$10,000	$5,000	Katie Harberg (CMO)	N/A	N/A	7/2009	12/2010	75%
▶	**Westminster Center Park -** This project will develop the 9.5 acre park located directly across the street from City Hall. Funded mostly by the City's 2007 POST bond issue, this project will attempt to implement the following improvements (funding permitting): amphitheater, plaza, shelters, play area, walking paths, open turf areas, parking water feature and restroom facilities.	The City celebrated the grand opening of the park on May 21, 2010. Playground surfacing is currently being repaired due to adhesive issues. Staff is also working to resolve several maintenance issues with the pop-jet fountains caused by heavier than anticipated usage. This project is currently in a one-year warranty period.	$3,218,021	$2,989,854	Kathy Piper (PR&L)/Rich Dahl (PR&L)	City Employee	Arrow J Landscape	12/2007	5/2010	100%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
	Westminster Center TOD - This project will assist with the redevelopment projects and land acquisitions necessary to position this commuter rail station for approval by RTD to be built as a part of the Northwest Corridor Commuter Rail line.	Funds will continue to be accrued in this account to address future needs associated with the development of the FasTracks Station and surrounding area.	$2,050,000	$0	Steve Smithers (CMO)	N/A	TBD	TBD	TBD	0%
	UTILITY CAPITAL IMPROVEMENT FUND									
▶	**10" Replacement Main, 80th Avenue under US 36** - This project is to replace a 10-inch main along 80th Avenue under US 36. The Colorado Department of Transportation (CDOT) is constructing a new 80th Avenue bridge over US 36 and the new bridge is anticipated to conflict with the 10" water main that crosses the Turnpike. This bridge project will likely require complete replacement of the main along with replacement of portions of the pipeline on the east side of the US 36 in the vicinity of 80th Avenue, Osceola Street and Newton Street.	Work on this project has commenced, but with some delays due to CDOT delays with the overall bridge replacement project. Utility work is anticipated to be completed in the fall of 2010, with project completion now pushed out to the spring of 2011.	$1,300,000	$9,179	Andy Walsh (PW&U)/Dave Downing (CD)	City Employee	Colorado Department of Transportation/ CH2M-Hill	5/2010	6/2011	80%
▶	**94th Avenue & Quitman Lift Station Elimination -** The project is for the construction of a gravity sewer system to divert flow away from the City's current 94th Avenue and Quitman Lift Station to Sheridan Boulevard via a gravity sewer. The change in the system will remove approximately 0.5 million gallons per day from the Little Dry Creek interceptor that flows to the Metro District and add it to the Big Dry Creek interceptor that flows to the Big Dry Creek Wastewater Treatment Facility.	Construction was completed in September 2009. Staff is working on one remaining issue, which is the finalization of quit claim deeds to three private property owners. Staff anticipates completion of this task in October 2010.	$1,920,619	$1,886,955	Mike Wong (PW&U)	City Employee	URS Corp AUI, Inc.	4/2007	9/2009	100%
	144th Avenue Sanitary Sewer Extension (Pecos to Tejon) - This project includes water and sewer extensions to fulfill a 2001 Annexation Agreement executed by the City. This requires the construction of approximately 1,200 feet of both water and sanitary sewer mains from the intersection of 144th Avenue and Pecos Street west to the two affected properties.	Project is complete and was placed in service in 3Q 2009. The project is currently in a one-year warranty period.	$160,000	$75,439	Dave Loseman (CD)	City Employee	TBD	1/2009	1/2010	100%
TO BE CLOSED	**Airport Creek Stormwater Improvements -** There is a 48" diameter raw water line that is exposed in this section of Airport Creek just upstream of Sheridan Boulevard at approximately 110th Avenue. This project was identified in the top three priority projects in the 2007 storm drainage study.	Construction has been completed. This project can be closed. Urban Drainage and Flood Control District will track the 1-year warranty and 5-year wetlands mitigation associated with the project.	$300,000	$300,000	John Burke (CD)	City Employee	Muller Engineering; L&M Const.; Naranjo	11/2008	6/2010	100%
	Big Dry Creek Waste Water Treatment Facility Renovation & Expansion This project involves the expansion and upgrade of the existing treatment facility to meet future needs as mandated by the State Department of Health, to replace aging equipment, to improve odor control and to improve the operating and maintenance efficiency of the facility.	The project has reached final completion and is now in the warranty stage. Final change order issues have been resolved and final payment has been released to the contractor.	$45,946,669	$45,613,816	Kent Brugler (PW&U)	City Employee	CDM Lillard & Clark	7/2003	4/2010	100%
NEW	**Big Dry Creek Waste Water Treatment Facility Master Plan for Solids Processing and Handling Improvements -** Due to new plant operations and an unforeseeable increase in the viscosity of solids flow streams, current conditions at the plant have led to bottlenecks and plugging in the facility piping. This project will systematically evaluate current conditions and predesign appropriate system modifications to provide safe, stable and sustainable long-term treatment operations.	Inspections have been completed on two out of the three digesters associated with this project. In addition, laboratory analysis of the plant liquid streams has been completed. Results are currently being used to simulate plant hydraulic flows and to determine what, if any, piping improvements may be warranted for the solids handling system at the plant. $80,391 from the Sewer Open Cut project account were transferred to fund this project per Council approval on 6/14/10.	$80,391	$6,474	Steve Grooters (PW&U)	City Employee	Black and Veatch	6/2010	11/2010	25%
▶	**City Hall Cashier System Replacement -** This project is to install a new cashier system at City Hall. The existing system will no longer be supported after 12/31/10 and due to reliability issues, Staff requested and Council approved 2007 carryover to fund this project on August 11, 2008.	Several outstanding items still need to be resolved, including the integration of the system with Accela and the addition of a device to automatically read bills.	$150,000	$91,796	Robert Byerhof (FIN)	City Employee	Active Network	12/2008	12/2010	90%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**City Park Channel Improvements (Lowell to Big Dry Creek)** - This project includes the construction of the City Park Channel on the south side of 120th Avenue between Lowell Boulevard and Big Dry Creek. This realignment of the existing channel will reduce the size of the structure crossing needed across Lowell Boulevard north of 120th Avenue. This plan is in accordance with the updated Master Plan being prepared by the Urban Drainage and Flood Control District (UDFCD). Staff is working towards a cost sharing agreement between UDFCD, Broomfield and Westminster. The funding is Westminster's share.	Construction of the first phase of this project is complete and out of the one-year warranty period. The first phase included a box culvert crossing of Lowell Boulevard and channel improvements constructed approximately 500 feet east and west of Lowell Boulevard. Design of the second phase of this project was to begin in the 1Q 2010, however, the IGA between the City, UDFCD and the City and County of Broomfield is stalled due to some of the project sponsors wanting to wait until economic conditions improve. Construction of the second phase is now anticipated to begin in 2011. Construction of the second phase includes an 8-foot wide concrete trail and pedestrian bridge over Big Dry Creek.	$858,000	$450,000	Dave Loseman (CD)	UDFCD	CH2MHILL	4/2006	12/2011	100% (Phase 1) 0% (Design - Phase 2)
▶	**Comprehensive Water Supply Plan (CWSP) - Raw Water Improvements -** This project will provide for a feasibility study and design of the Standley Lake Bypass Pipelines that will allow Clear Creek and Moffat Tunnel water to bypass Standley Lake and thus provide an alternative means of delivering water to Westminster. This project will provide redundancy, protect water quality and reduce vulnerability. Staff is pursuing studies and assessments of the City's raw water supply system in order to develop additional water supply, promote system efficiencies, and maximize resources.	Staff continues to review the bypass pipelines proposal from Deere & Ault Consultants, Inc. The cities of Northglenn and Thornton have been offered the opportunity to participate jointly in this project. Thornton has declined and Northglenn has not yet responded. The Raw Water Study is intended to address the components of the raw water system that are the City's responsibility. Staff is developing a scope for a Raw Water Infrastructure Master Plan and will coordinate with the ditch companies to integrate it with their respective master planning efforts.	$375,000	$0	Josh Nims (PW&U)	City Employee	Deere & Ault Consultants, Inc.	3/2009	12/2010	10%
▶	**Comprehensive Water Supply Plan (CWSP) - South Westminster Non-Potable Water System -** This project consists of pursuing the development of non-potable water sources for irrigation purposes in the southern area of the City, which includes planning, design and construction of the system in conjunction with south Westminster development and redevelopment. The system would use sources of water that the City has rights to but cannot incorporate into the potable water system. The system would be separate and distinct from the Reclaimed Water System.	In November 2009, URS provided a draft report summarizing the results of the study to identify potential system demands, develop conceptual system infrastructure and provide study-level pre-design costs. Staff is reviewing the final draft of the study and a follow-up study is being planned to assess potential water sources, enhance system design and develop costs and project schedule.	$225,000	$40,035	Josh Nims (PW&U)	City Employee	URS	5/2008	12/2011	25%
▶	**Comprehensive Water Supply Plan (CWSP) - Water Supply Development -** The purpose of this project is to replace the annual volume of water supply lost due to the elimination of the treated water contract with Thornton and to develop water supply to meet the future water demand of the City at build-out. The Comprehensive Water Supply Plan includes purchasing of additional water rights, expanding the reclaimed water system, developing a non-potable water system for South Westminster, optimizing the raw water system, and increasing water conservation efforts.	A purchasing strategy was developed and priority Farmers Reservoir and Irrigation Company share owners were identified. In March 2010, an aggressive water purchase program was initiated to buy FRICO-Standley Lake shares. The water purchase program has purchased 86.04 FRICO-Standley Lake shares. Development of the Water Conservation Plan and Water Conservation Verification Study has begun.	$20,109,373	$17,728,898	Mike Happe (PW&U)/Josh Nims (PW&U)/Chris Gray (PW&U)	City Employee	Hadden Acquisitions, LLC (water broker); Slattery Aqua Engineering (water supply planning and modeling consultant); Spronk Water Engineers (water rights engineering)	2004	12/2011	75%
	Comprehensive Water Supply Plan (CWSP) - Wattenberg Gravel Lakes Storage - In order to meet the City's build-out water demand, the City is pursuing construction of reservoirs from reclaimed gravel mines along the South Platte River near Wattenberg in Weld County. This project involves the mining company, Aggregate Industries, constructing water storage for Westminster as part of their mining reclamation plan. Westminster is responsible for constructing inlet and outlet facilities. The project is anticipated to take 17 years to complete.	Due to permitting issues and a drastically slowed construction environment, Staff has negotiated new agreements with Aggregate Industries (AI) with updated timelines and delivery dates for each component's completion. Staff has also negotiated lease agreements with AI.	$2,610,846	$2,198,780	Josh Nims (PW&U)	City Employee	Aggregate Industries; Various Engineering Firms	2000	12/2017	15%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Countryside Pump Station Improvements** - This project will provide improvements to the Countryside Pump Station located at 100th Avenue and Simms Street, which will enhance the distribution of water in the far western edge of pressure zone 5.	Countryside (Pressure Zone 5) Improvements: This project has been delayed until 2011 for water distribution system model updates for future water consumption demands. The model will indicate whether or not the planned Countryside pump station improvements will meet the needs of the future water demands as well some of the specifics for necessary interim improvements. Interim modifications will be funded from the 2010 account and will generally consist of minor improvements to the pump station for the purpose of maintaining reliable operations until the future pump station demands are determined.	$1,125,000	$95,867	Stephanie Bleiker (PW&U)	City Employee	J&T Consulting, Inc.	1/2009	TBD	20%
▶	**England WTF Decommissioning -** This project consists of demolishing and disposing of the former England Water Treatment Facility (WTF) buildings and structures in anticipation of development to the south Westminster corridor. Also, this project is related to the development of a south Westminster non-potable water system that may use this site.	Staff is proposing an additional $300,000 for this project from 2011 Capital Improvement Program funding in order to have the necessary resources to properly decommission the facility. URS' draft report on the South Westminster non-potable water system project has allowed Staff to identify portions of the site that should be reserved for the non-potable system, including the reservoir site. A master planning effort in 2011 will produce preliminary design and estimated costs for necessary non-potable infrastructure including portions of England WTF.	$300,000	$0	Dan Strietelmeier (PW&U)	City Employee	TBD	6/2009	12/2011	10%
▶	**ERP/CMOM/Master Plan Updates -** This Emergency Response Plan/Capacity, Management, Operation & Maintenance Master Plan Update will assist in the revision of the wastewater system hydraulics, creation of emergency response plans, and the identification of pipelines approaching capacity, as well as provide a review of current CMOM regulations.	Staff intends to have URS model hydraulic sewer flows in the entire City system to determine capacity of the system. Staff plans to include this project as a component of the overall Little Dry Creek/Big Dry Creek flow monitoring project.	$250,000	$0	Mike Wong (PW&U)	TBD	TBD	6/2010	12/2011	0%
▶	**GIS Mapping/Modeling Improvements - Water & Wastewater Systems -** This project will provide assistance in completing and updating geographic information system (GIS) data. The City will also model the systems to determine future data needs and cleanup. This project will be a repetitive process until the model software and GIS software are unified. Future updates are expected to be accomplished in-house once the data work is completed.	Staff contracted with URS for work on several projects funded by this account. Water modeling started in April 2010 and is approximately 60% complete. Staff anticipates completion of this project in December 2010. A water/wastewater system asset valuation was performed and is 100% complete. Staff intends to take a professional services contract to Council in September 2010 to perform water modeling refinements. Savings in existing accounts will fund this project. Completion is anticipated for December 2010.	$350,000	$169,279	Andy Walsh (PW&U)	City Employee	URS	9/2008	12/2010	60%
	Gregory Hill Pump Station Improvements - This project consists of rebuilding the pump station walls due to the water pipe failure that the City experienced at the facility (located at 82nd Avenue and Meade Street) in late 2006.	Project was completed in 2009. Staff is working on resolving the emergency generator noise concerns for surrounding residents. After this issue is resolved, the project can be closed.	$609,213	$586,794	Mike Wong (PW&U)	City Employee	Stantec Consulting; Velocity Constructors, Inc.	6/2008	12/2009	100%
▶	**Inflow and Infiltration Study for Sewer Collection System -** This study is to measure the amount of inflow and infiltration to the City's Sanitary Sewer System. The study will take place over a six month period to monitor flows and evaluate the need for and location of additional monitoring work. It will also verify the inflow and infiltration assumptions used in modeling and planning. After the study is complete, the City can install piezometers and flow meters along and in Little Dry Creek, Big Dry Creek, and other drainages where appropriate to help mitigate storm water surges in the sanitary sewer system.	A Request for Proposals (RFP) was sent to consulting firms in early August and eight proposals have been received. Staff is planning to bring an agenda memorandum to Council in October 2010 for consultant selection and award of contract. The anticipated project schedule would have flow monitoring and sampling commencing in spring of 2011 and these activities would occur for the following 12 months.	$250,000	$0	Mike Wong (PW&U)	City Employee	TBD	6/2010	3/2012	5%
▶	**JBR Aeration System Replacement -** This project is to replace the existing aeration system located approximately in the eastern section of Jim Baker Reservoir (JBR). This aeration system is an important part of the site operations and provides valuable water quality benefits to the reservoir.	Staff has been reviewing the scope of work and identifying options for completing the project. The projected completion date has been modified to 2Q 2011 to reflect current status of the project and division priorities.	$50,000	$13,275	Josh Nims (PW&U)	City Employee	TBD	9/2007	6/2011	25%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Lift Station Improvements (wastewater lifts) -** This project consists of wet well lining, impeller replacements, spare pump purchases, access hatch replacements, emergency force main connections and preliminary investigation of emergency overflow connections to adjoining agencies collection systems.	Approximately $30,000 was expended for a spare pump and valves at the lift stations at 87th Avenue and Wadsworth and 88th Avenue and Zuni Street. A replacement transfer switch was also installed at the 87th Avenue and Wadsworth lift station. Electrical upgrades were completed for the North Huron lift station. A trailer mounted emergency generator was purchased & delivered. Some additional interim improvements may be undertaken while a larger scale study is developed. The General Services Engineer is currently performing an alternatives analysis for the 87th and Wadsworth Lift Station.	$775,000	$79,682	Richard Clark (PW&U)/Bob Booze (PW&U)/Dan Strietelmeier (PW&U)	City Employee	Various	4/2008	12/2010	15%
▶	**Little Dry Creek Regional Detention -** This project is located between Federal and Lowell on the south side of the Burlington Northern Santa Fe (BNSF) railroad. This project will create a regional detention area to help facilitate the re-development of the triangular area north of the BNSF railroad between Federal and Lowell Boulevards south of 72nd Avenue. The project will also create an open space amenity for the neighborhood and the proposed train station that is located between Federal and Lowell Boulevards. The current estimated total project cost is $9.1 million and is anticipated to be funded over several years.	Adams County has signed an Intergovernmental Agreement (IGA) with the City and the Urban Drainage and Flood Control District (UDFCD) for design work. The City and Adams County are working out the details of an IGA to establish financing, ownership and maintenance related details. Phase 1 design work has been initiated for the project. Muller Engineering was selected to complete the design.	$1,780,000	$850,000	John Burke (CD)	City Employee	Muller Engineering	9/2009	12/2014	3%
▶	**Maintenance Management Computer System** - This project funds the purchase of a Total Enterprise Asset Management (TEAM) Program for City-wide use. The City will utilize the latest technology for asset and resource management, improved customer service and better management of all maintenance tasks. This will also assist in performance measurement efforts.	All work groups who were part of the original project have been converted and upgraded into the new web-based Accela Automation application. A punch list of items has been created that need to be completed or fixed by the vendor. The vendor is actively completing these items. The upgrade to Accela Automation version 7.0 was completed on August 26, 2010. Resolution of minor items is anticipated before the end of the year. Following completion of these tasks, this project will be ready to be closed.	$700,000	$502,355	Keith Alvis (PW&U)	City Employee	ACCELA Inc.	1/2002	10/2010	95%
▶	**NWTF Major Repair and Replacement** - The Northwest Water Treatment Facility (NWTF) is in need of two major repairs to the facility. The HVAC project is intended to improve the current heating system for the membrane room in order to improve efficiencies with the calibration of instrumentation. The NWTF Filtrate Header will replace the 24" stainless steel header pipe that collects the final filtered water from the membrane filters, as the current pipe has developed numerous pinhole leaks.	An alternatives evaluation was completed by Burns and McDonnell in late 2008 and preliminary design was completed. Final design and construction for this work is included as part of the NWTF Membrane Expansion Project. The design/build contract for this work was awarded to Garney Companies, Inc. on June 14, 2010. Design is anticipated to be completed by the end of September 2010 and construction is estimated to be completed by July 2011.	$284,600	$24,600	Kent Brugler (PW&U)	City Employee	Garney Companies, Inc.; Burns & McDonnell	8/2008	7/2011	15%
▶	**Northwest Treatment Facility Membrane Expansion -** This will fund the addition of three membrane filtration racks that will be necessary to replace the diminished potable water capacity resulting from reallocation of Thornton water purchases. These additional membranes will assure a basic drinking water supply under a variety of planned shutdown or emergency conditions. The added capacity will be equivalent to two to five million gallons per day based on water temperatures. Besides the membranes, no additional components or modifications are needed since the facility was designed for up to 20 million gallons per day.	Staff have negotiated a design/build scope of work and fee with the design/build team of Garney Companies, Inc. and Burns & McDonnell for the purchase of the filtration equipment and the construction of the filtrate header and HVAC improvements. The design/build contract with Garney Companies, Inc. was awarded by City Council on June 14, 2010. Design is anticipated to be completed by the end of September 2010 and construction is estimated to be completed by July 2011.	$3,000,000	$0	Kent Brugler (PWU)	City Employee	Garney Companies, Inc.; Burns & McDonnell	6/2010	7/2011	5%
▶	**Pressure Relief Valve (PRV) Rehabilitation -** PRVs are intended to control water system pressures and maintain safe pressures (less than 80 PSI) in the distribution system. This project is intended to return several PRV vaults to good working order and replace obsolete equipment with current, maintainable hardware.	This project will reconstruct and replace existing pressure reducing valves at the Torrey Peaks subdivision and at 128th Avenue and Huron Street. The project will also add flow meters to two other existing PRV vaults and it will construct one new PRV vault at 119th Avenue and Sheridan Boulevard. Staff is awaiting the results of a URS modeling report to determine the locations of the new vault. The modeling report results are estimated to be completed in December 2010. Design, purchase and installation is anticipated to be completed in late spring 2011.	$175,000	$0	Andy Walsh (PW&U)/Dan Daly (PW&U)	City Employee	TBD	1/2010	6/2011	5%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Quagga/Zebra Mussel Treatment Plan -** This project is to develop a Master Plan for addressing the impacts of invasive species at Standley Lake. Quagga and zebra mussels are capable of clogging the outlet pipes and obstructing other water conveyance structures in the Standley Lake and City systems if not prevented or controlled. This planning effort will evaluate nationwide efforts to control the mussels and generate the appropriate action items and mussel control/treatment system designs and costs for Standley Lake that would be implemented at any point in the future that the mussels were found.	A draft report was received and generated additional questions. An amendment was received for additional work, not to exceed the budgeted amount (using contingency funds). Notice to proceed was given 4/21/2010. Staff has received information related to these additional questions and will review the draft report with the City Manager's Office and other key Staff. Staff will then schedule discussion of the plan with City Council.	$130,000	$95,318	Mary Fabisiak (PW&U)/Tom Settle (PW&U)	City Employee	HDR Engineering, Inc.	4/2009	11/2010	95%
	Quail Creek Channel Improvements - This project will rehabilitate the existing Quail Creek channel upstream of Huron Street to improve flow. The low slope of the existing channel has caused a standing water problem.	Construction of the improvements was completed during 3Q 2009. Some corrections and warranty work was necessary in 2010. Wetlands mitigation monitoring requirements for this project will extend into 2014.	$1,800,000	$1,800,000	Steve Baumann (CD)	City Employee	UDFCD/ICON Engineering, Inc. and SaBell's Landscaping	10/2004	3/2010	100%
▶	**Reclaimed Water System Open Storage -** This project is for the design and preliminary construction of a 200 acre foot storage reservoir between the Big Dry Creek Wastewater Treatment Facility and Wal-Mart on 136th Avenue. This reservoir is a necessary improvement (identified in the Reclaimed Water System Master Plan) to meet future reclaimed customer demands. The reservoir will store treated reclaimed water during spring and fall months that can be used to meet demands during the middle of summer when reclaimed water demands reach their peak. The total project is anticipated to cost approximately $4,460,000 and be funded in out years as revenues permit. This initial funding in 2009 will allow initial site work to be completed.	Timing on the design and construction of this project has shifted to out years. Original plans had involved partnership with a developer adjacent to the facility, but the developer ended its participation in the project. Staff is evaluating other partnership options and determining the appropriate project timing based on system needs and growth. Pre-design and grading plans have been completed for the open storage reservoir, though these may change slightly depending on future partners in the project.	$600,000	$0	Jenny Fifita (PW&U)	City Employee	TBD	1/2009	TBD	5%
▶	**Reclaimed Water Treatment Plant Expansion Study -** This project is to study various alternatives to fully develop the Reclaimed Water System, including the option of expanding the Reclaimed Water Treatment Facility.	This study is nearly complete. The pre-design report and grading plans for the Reclaimed Water Open Storage project is the one component of this project that still needs to be completed. A draft final report has been submitted. Timing for the reclaimed water open storage reservoir has changed, as plans for a senior housing development adjacent to the site have been discontinued. The final component of this project is expected to be completed in 4Q 2010 due to timing and priority changes of the Reclaimed Water Open Storage project.	$450,000	$435,108	Jenny Fifita (PW&U)	City Employee	HDR, Inc., Stantec Consultants, Deere & Ault Inc.	3/2004	12/2010	95%
▶	**Reclaimed Water Treatment Facility Expansion -** This project is to both expand the Reclaimed Water Treatment Facility and build new influent storage and pumping for the Reclaimed Water Treatment Facility. The facility needs to be expanded in order to meet the customer demands currently being added to the system. The covered storage part of the project will replace the existing uncovered ponds and a new pump station will deliver the stored water to the treatment facility. The total project cost is $15,575,196 and is funded, in part, with bond funding that was secured in 2010.	This project consists of two phases. Phase 1 is the replacement of the open ponds at the Big Dry Creek Wastewater Treatment Facility (BDCWWTF) with an enclosed tank and new pump station. Phase 2 is the expansion of the plant itself from six million gallons per day to ten million gallons per day. Construction of Phase 1 began October 2009 and is approximately 85% complete. Final completion is projected for October 2010. Design on Phase 2 is complete and bid documents for construction have been distributed to prequalified contractors. Bids are due on September 28, 2010. Construction is scheduled to begin in November 2010 and is anticipated to be completed by June 2012.	$15,575,196	$6,811,801	Kent Brugler (PW&U)	City Employee	Black and Veatch; Overland Contracting, Inc.	1/2009	6/2012	100% (Phase 1 - Design); 85% (Phase 1 - Construction); 100% (Phase 2 - Design); 0% (Phase 2 - Construction)
	Rocky Flats Wildlife Refuge - Funds received from Kaiser Hill in 2006 as payment to the City for Rocky Flats closure. These funds will be utilized for water quality monitoring purposes within and around Rocky Flats Wildlife Refuge.	Review of appropriate monitoring system in process by Standley Lake cities. No use of funds has been necessary at this time. After a 2009 meeting with the refuge manager, Staff recommended that the project funds remain intact in anticipation of federal funding.	$100,000	$0	Ron Hellbusch (PW&U)	City Employee	TBD	6/2007	TBD	5%
	Sanitary Sewer Flowmeters - This project will be a pilot program to purchase and install semi-permanent sanitary sewer flowmeters in major collection system lines to monitor sanitary sewer flow rates. Utilities will then use metering information, along with rain gauges and groundwater piezometers, to determine collection system response to precipitation events. Flowmeters will also be used to calibrate the collection system hydraulic model.	This project has yet to commence. This project will be incorporated into a study project that will include inflow and infiltration studies of the wastewater collection system. The project will also attempt to identify where high salinity groundwater is entering the City's wastewater collection systems. The flow metering component of the project will sample system quantities and qualities.	$100,000	$0	Mike Wong (PW&U)	City Employee	TBD	5/2010	TBD	0%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**Shaw Boulevard/Circle Drive Drainage Improvements** - This project is for the design and construction of drainage improvements to route storm runoff originating in the City of Westminster past the Allen Ditch and adjoining residential lots in unincorporated Adams County to the Rotary Park detention pond. During high rainfall events, storm runoff originating within Westminster flows into the nearby Allen Ditch. In some instances, water from the Ditch overtops the banks and runs into residential lots located within unincorporated Adams County. The project will provide an enhanced conveyance system that would protect the residential lots from minor flooding events.	The final design for the storm drainage improvements is currently underway with the Urban Drainage and Flood Control District (UDFCD) and S.E.H. engineering. The construction of this project is scheduled for fall 2010. $400,000 is the City's participation in this project and has been encumbered for the project with UDFCD.	$400,000	$400,000	John Burke (CD)	City Employee	S.E.H.	2/2008	5/2011	95% design; 0% construction
▶	**South Westminster TOD Utilities Study** - This project will fund a study of the utilities system in South Westminster in the vicinity of the transit oriented development planned around the forthcoming commuter rail station near 71st Avenue and Irving Street. This study will ensure that water and wastewater development needs in this area are adequately defined.	URS has conducted analysis based on redevelopment scenarios in the southern part of the City and has completed the study of the City's sanitary sewer in the area. Cost savings from the sewer component of this project will go towards refinement of the water system modeling work that has been completed. Staff plans to take a professional services contract to Council in fall 2010 in order to make these water modeling refinements. Project completion is anticipated in December 2010.	$75,000	$68,522	Andy Walsh (PW&U)	City Employee	URS	8/2008	12/2010	95%
▶	**Southern Zone 1 Transmission Pipeline -** The project consists of a new water pipeline extending from the existing High Service Pump Station (HSPS) at 91st Avenue and Pierce Street to an existing 16 inch water line (England Pipeline Project) in Sheridan Boulevard at approximately 86th Avenue. This pipeline would provide a second larger diameter supply line directly from the Semper Water Treatment Facility HSPS into the southern portion of pressure Zone 1, which was a recommendation from the City's 2006 Infrastructure Master Plan.	Substantial completion was issued in March 2010. Punch list items are currently being addressed and final payment is planned for September 2010. The project is currently in a one-year warranty period.	$5,564,023	$3,182,206	Dan Strietelmeier (PW&U)	City Employee	Garney Companies; BT Construction	4/2009	3/2010	100%
▶	**SWTF Electrical System Improvements -** This project consists of improving the existing treatment processes by modifying and/or replacing the existing, outdated electrical controls. The insulation and protective elements of high voltage wiring and electrical controls are over 20 years old and presents significant safety risks for maintenance and operations staff. This project will update the system to current electrical code standards.	Project was awarded to CES, LLC and the original scope of the project is complete. Staff is evaluating the possibility of updating high service pumps to variable frequency drives in order to reduce energy costs. If pursued, this work is estimated to be completed by December 2010.	$150,000	$87,636	Tom Settle (PW&U)	City Employee	CES, LLC	4/2008	12/2010	75%
▶	**SWTF Major Repair and Replacement -** The Semper Water Treatment Facility (SWTF) is in need of major repairs and the replacement of parts and processes as part of its normal operational life. Projects include general building maintenance, replacement of the Trac Vac Sludge Removal System, Lime System Improvements, Filter Valve Replacement and on-line instrument replacement.	Construction of lime system improvements is complete. On-line instrument replacement has included all facility pH meters and level transmitters. 30 filter valve operators and 4 valves have been replaced in the first phase of the filter valve replacement portion of the project. A Request for Proposals (RFP) painting of the SWTF Basin building will be issued by the end of 3Q 2010.	$800,000	$54,686	Tom Settle (PW&U)	City Employee	Boyle Engineering; Aslan Construction	4/2008	12/2010	70%
▶	**SWTF North Basin Roof Replacement -** This project consists of replacing approximately 16,000 square feet of built-up asphalt roof on the two north settling basin buildings that have passed their useful life at the Semper Water Treatment Facility. These two buildings were originally built in 1979 and no roof work has been done since installation.	Substantial completion was issued in March 2010 and final payment was made in April 2010. The project is currently in a one-year warranty period.	$252,991	$240,534	Dan Strietelmeier (PW&U)	City Employee	B&M Roofing	9/2009	3/2010	100%

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS	START DATE	PROJECTED COMPLETION DATE	% COMPLETE
▶	**SWTF Process Improvements -** This project is to implement an additional process in the water treatment process at the Semper Water Treatment Facility (SWTF) to improve the sedimentation and filtration processes. Replacement of the tube settler system with plate settlers in 2006 created the necessary space for adding the flocculation process. Flocculation is the controlled, mechanical mixing of the chemically-treated raw water that generates the largest particles possible to enhance the settling and filtration processes. Adding this process will reinforce the ability of the existing SWTF sand filtration to meet new federal mandates on filtered drinking water quality while avoiding more expensive technologies such as membrane filtration.	AECOM is currently conducting a final pre-design review of hydraulic baffle/flocculation systems prior to entering a final design phase. Staff anticipates that the final design phase will commence in 2011.	$300,000	$0	Tom Settle (PW&U)	City Employee	AECOM	6/2010	12/2011	10%
▶	**System-Wide SCADA Enhancements -** This project is to replace the existing Supervisory Control and Data Acquisitions (SCADA) system with a new system that is consistent with present day SCADA technology. Other improvements included providing enhanced communications, additional alarms at various water and wastewater system facilities for detecting water-on-the-floor, door entry, building temperature, intrusion detection, smoke detection, flood warning and vibration monitoring. These connections will standardize the sensoring in all facilities, alert staff to equipment problems more quickly and provide better security for all locations.	Phase 1: The City recently provided ESC with review comments on the Phase 1 record drawings. ESC is making final edits to the Phase 1 record drawings and operations and maintenance Manuals. Phase 2: Improvements are currently in design phase. Phase 2 work includes enhancing the City's radio communications with licensed frequencies, redundant capabilities and increased data transfer capacity appropriate for remotely monitoring and operating utilities and water resources field stations. The project includes security enhancements at remote field station sites and at water treatment facilities. Phase 2 construction activities are scheduled to begin in 4Q 2010.	$1,571,500	$691,211	Stephanie Bleiker (PW&U)/ Tom Settle (PW&U)	City Employee	ESC	7/2008	3/2011	95% (Phase 1); 35% (Phase 2)
▶	**Utility Billing Software Replacement -** The old system was developed in-house and was operating beyond its capabilities. This project is to identify and select a software vendor and implement the new Utility Billing software system.	The City went "live" on the new system in December 2005. Included in the contract was an upgrade to a new web-based version (version 3.0). Conversion to upgrade the Utility Billing System started in June 2009 and upgrades were installed in October 2009. Changes and updates are still needed in the Teleworks system and are in progress. These should be completed in 3Q 2010. Teleworks is currently testing the changes to the system and Staff is anticipating project completion by the end of September 2010.	$750,000	$690,516	Bob Smith (Finance)/Sandy Christopher (Finance)	City Employee	Advanced Utility Systems Corp	12/2003	9/2010	95%
▶	**Zone 4 Pump Station Replacement -** This project consists of a new pump station in the vicinity of Zone 4 (near the Semper Water Treatment Facility), which will replace the current Silo Pump Station located at approximately 90th Avenue and Wadsworth Boulevard. Per the Utility Fund Infrastructure Master Plan, the new pump station will increase redundancy in this pressure zone as well as better regulate water system pressures to an acceptable standard.	Burns and McDonnell provided a feasibility review and preliminary design report for locating a new Zone 4 Pump Station at the current High Service Pump Station site at 91st Avenue and Pierce Street. Design of the pump station has been delayed until distribution system modeling is evaluated. Design and construction will be coordinated with the Zone 3 and 4 improvements later this year and described in the Water Pressure Zone Enhancements project (found on the "Ongoing Projects" tab).	$1,000,000	$2,982	Dan Strietelmeier (PW&U)	City Employee	Burns & McDonnell	9/2008	3/2011	10% design
▶	**Zone 14 Pump Station Replacement -** This project is to install a pump station in the newly adopted Zone 14 to improve water pressures in the southern portion of Westminster. Per the Infrastructure Master Plan Study, a new Zone 14 is recommended due to elevations that are higher than Zone 1, resulting in lower water pressures in this area of the City.	The project is complete. The shared use agreement documentation for the construction of the pump station on City-owned park grounds was completed in August 2010 and is currently being processed for final approval.	$1,440,502	$1,277,265	Stephanie Bleiker (PW&U)	City Employee	Farnsworth Group Inc.; J-2 Contracting Company	3/2007	6/2010	100%

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
	GENERAL CAPITAL IMPROVEMENT FUND						
	Adams County Open Space Land Acquisition - The funds will be utilized for the acquisition of additional open space lands in Westminster. The funds are a portion of the open space sales tax revenue received from Adams County from the 2001 voter-approved tax. The Open Space Advisory Board prepares and utilizes a list of priority lands to acquire open space throughout the City and will be used when expending these funds.	Staff continues to work to acquire priority lands prior to development. For 2010, the funds currently in this account will be applied to debt service associated with the Metzger Farm Certificates of Participation (COPS). These COPS were issued in 2006 in order to finance acquisition of the Metzger Farm.	$155,000	$0	Heather Cronenberg (CD)	City Employee	various
▶	**Arterial Roadway Rehabilitation and Improvements** - Project to supplement arterial street maintenance in the PW&U operating budget; funds will be used for improvements to existing pavement on major arterials to extend the life of the pavement and offset repair costs.	The 2010 project consists of resurfacing the following roadways: 92nd Avenue - Wadsworth Parkway to Harlan Street; Pierce Street - 88th Avenue to 92nd Avenue; Oak Street - 100th Avenue to Countryside Drive; and Pecos Street - 112th Avenue to 120th Avenue. In addition to various resurfacing strategies, improvements include cracksealing, concrete replacement, restriping of lane lines and new pavement marking installations. To date, 35,430 pounds of crackseal material has been applied and 2,557 linear feet of concrete replacement has been accomplished on these roadways. Staff anticipates completion of all work by the end of September.	$650,000	$0	Dave Cantu (PW&U)	City Employee	A-1 Chipseal; Keene Concrete; Roadsafe Traffic Systems
▶	**BO&M Major Maintenance** - Project is for maintenance projects throughout City facilities. Emphasis is placed on immediate needs identified by the Bornengineering facility needs assessment.	A large portion of capital funding is being set aside for the City's capital contribution towards Siemen's Energy Performance retrofit. A number of projects are on hold pending the implementation of Siemen's Energy improvements, which commenced during 3Q 2010. Additional projects to be funded by this account include boiler replacements at Municipal Court, Bowles House repairs, installation of bay door operators at the Fleet Maintenance facility and the setting of a new transformer for additional electrical power needs at Fleet Maintenance.	$2,121,218	$48,706	Jerry Cinkosky (GS)	City Employee	Siemens; Garland Roofing; Asset Management Corp; Integrated Safety Services; Kelly Electric
	Bridge/Pedestrian Railing Repainting Project - This project is for repainting railings along bridges, drainage ways and right-of-way walkways throughout the City. Staff has identified 11 bridge locations with railings and fencing over state highways and railroad overpasses throughout the City.	Due to the present economic climate, Staff is delaying the repainting of railings. Engineering has learned RTD has Federal stimulus funding to replace the pedestrian canopy at US 36 and Sheridan Boulevard. RTD states that they anticipate completing this replacement in 2010.	$127,167	$1,035	Dave Cantu (PW&U)	City Employee	TBD
▶	**City Facility Parking Lot Maintenance** - Program to maintain City facility parking lots on an on-going program (crack sealing, seal coating, resurfacing or reconstruction as necessary).	The 2010 City Facility Parking Lot Maintenance Project consists of 18,200 square yards of slurry sealing at Amherst Park, Faversham Park, Irving Street Library and Westfield Village Park. Other work to be performed in conjunction with the resurfacing of these lots includes concrete replacement, pavement crack sealing, restriping and pavement markings. Additional work includes minor concrete replacement at the Public Safety Center (PSC), re-caulking of court yards at City Hall/PSC and pavement crack sealing at Legacy Ridge Golf Course and Municipal Court. The City's contractor is scheduled to complete a slurry seal of the Irving Street Library and Westfield Village park parking lots by the end of September. Work on the other parking lots have been completed. The City Hall courtyard and PSC work is scheduled for completion during 4Q 2010.	$115,020	$0	Dave Cantu (PW&U)	City Employee	A-1 Chipseal; Keene Concrete;
▶	**Community Enhancement Program -** These funds provide for a variety of projects throughout the Westminster community. Project categories include gateways, medians, rights-of-way, street improvements, bridges, public art, lighting and contracts.	The City's U.S. 36 and Federal Boulevard Interchange gateway is now maintained by City as of June 2010. The City's PR&L Board has awarded Neighborhood Enhancement grants for 2010. Funding in several CEP accounts remains frozen due to economic conditions.	$4,740,411	$596,921	Kathy Piper (PR&L)	City Employee	N/A

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
	Facelift Program - The Facelift Program provides matching grants to qualifying commercial properties and/or businesses to improve the aesthetic appearance of the site and/or buildings. The grant is provided on a one-for-one dollar basis not to exceed $5,000 and can be used for landscaping, painting, awnings and signage and facade improvements.	To date in 2010, the City has received one grant application and has awarded one grant through this program. The awarded grant will help fund exterior design drawings for the building at 7155 Hooker Street.	$36,325	$2,012	Tony Chacon (CD)	City Employee	N/A
▶	**Fire Station Concrete & Asphalt Replacement Program** - Funding for on-going replacement of deteriorated concrete curb, gutter and sidewalk and asphalt paving adjacent to the six fire stations.	Funding is proposed in 2011 and 2012 to allow the removal and replacement of the asphalt driving/parking surface at Fire Station 2. Staff is proposing to replace this area with a more durable concrete driving surface that can withstand the weight of the heavy fire apparatus. Staff anticipates that this project will cost $105,000.	$6,460	$0	Bill Work (Fire); Gary Pedigo (Fire)	City Employee	N/A
	Geographic Information System - The GIS is the warehouse for geographic data, utility layout and the mapping which supports planning, record-keeping and maintenance activities throughout the City. All but the very basic support for the GIS comes from the City's Capital Improvement Program.	GIS staff continues to provide support for the Accela Automated Management System, the Stormwater Utility and other functions that rely on up-to-date geographic mapping and data. The GIS Section recently purchased a new plotter to replace the 10-year old one and a high accuracy GPS field device.	$147,345	$19,639	Steve Baumann (CD); Dave Murray (CD)	City Employee	N/A
▶	**Golf Course Improvements -** These funds are for capital projects at the City's two golf courses.	Restrooms at Legacy Ridge and Heritage are complete and in a warranty period. Existing funds in the project account will fund several upcoming projects including irrigation pump replacements, driving range mat replacement at Legacy Ridge, replacement of tables and chairs at both clubhouses, lake screen filter flush at the Heritage and kitchen hood renovation at the Legacy Ridge clubhouse. Staff anticipates commencing these projects in 4Q 2010/1Q 2011.	$146,648	$6,113	Ken Watson (PR&L)	City Employee	N/A
▶	**Greenbelt Drainage Improvement -** Funding for improvements along greenbelts and drainageways that require repairs caused by flooding, improvements mandated for wetland mitigation/monitoring, improvements to ditches conveying raw water to ponds and environmental repair to areas damaged by prairie dog colonies (including removal and reseeding).	Water quality testing at Big Dry Creek underpass at Wadsworth is ongoing. Various drainage projects along Big Dry Creek, Walnut Creek and Little Dry Creek continue to be monitored and improved as needed, especially where trails cross the drainageways or oxbows create dangerous erosion conditions. Aeration of the Westin pond is uncertain, as this project is based on improvements to the adjacent drainageways and on increasing storage capacity, which at this time seem unlikely. Urban Drainage and Flood Control District (UDFCD) has also dedicated $50,000 in maintenance and improvements to Airport Creek from Main Street to Kendall Drive in the Sheridan Green areas. This work is to begin shortly and will reduce trail flooding in this area.	$82,266	$4,130	Richard Dahl (PR&L)	City Employee	Various
▶	**Historical Preservation Grants** - Project for City preservation projects. Most of these projects are grant funded but the City must up-front the costs and then be reimbursed; this account provides the upfront funds prior to receiving reimbursements.	Bowles House historic structure assessment was completed in 1Q 2009. Other recent projects include Rodeo Market facade restoration and historic surveying. A Bowles House porch rehabilitation project has received 2010 grant funding. Grant-funded construction plans are underway for the rehabilitation of historic Shoenberg farm buildings. The Shoenberg Barn project is anticipated to be completed at the end of 3Q 2010.	$23,631	$6,616	Vicky Bunsen (CD)	City Employee	N/A
▶	**Major Fire Station Maintenance -** This project consists of major maintenance and remodel items for all six fire stations, the training tower and the storage facility (old station 2).	No current major projects are scheduled. The remaining funds in this account will be utilized for emergency and priority projects as warranted. This project account is proposed to be re-named in 2011 as "Fire Station Major Modifications" to handle projects outside of routine station maintenance and remodeling that is funded and managed by Building Operations and Maintenance.	$50,222	$0	Bill Work (Fire)	City Employee	various
▶	**Major Software Upgrades -** Funds in this project are intended for major software applications in the City, including Intergraph, Microsoft and other selected enterprise applications.	During 4Q 2009, IT and PD upgraded the Intergraph Computer-Aided Dispatch and Report Management System (CAD-RMS). The database platform was also changed from Oracle to Microsoft SQL Server and a major upgrade was performed to the Police Records system. Microsoft Exchange and Outlook upgrades will be completed in 2010. Staff migration to Exchange and Outlook upgrades is about 60% complete. The City's voicemail upgrade (integration with Exchange) is 20% complete.	$342,413	$0	Art Rea (IT); Scott Rope (IT)	City Employee	N/A
	Median Rehabilitation - Project to rehabilitate and maintain medians throughout the City.	No new work to report to date in 2010. Plant replacements and irrigation repairs occurred during fall 2009 on the Church Ranch medians (low medians only).	$127,850	$1,400	Kathy Piper (PR&L)	City Employee	T2 Construction

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
	New Art Participation - Project created as a "holding account" for developer contributions toward public art.	Staff oversaw the installation of one new piece in 2009, "Dolly" at Shoenberg Farms. No new installations planned from this account to date in 2010.	$9,353	$0	John Carpenter	City Employee	N/A
	New Development Participation - This project funds the City's share of certain public improvements (e.g., the middle portion of arterial streets) installed by private developers.	In 2008 and 2009, funds from this project were to be used to pay McStain Development for their construction of the north one-half of 98th Avenue between Sheridan Boulevard and Westminster Boulevard adjacent to the Hyland Village project. The filing of bankruptcy by the developer in 2009 suspended this activity, but it is possible that work on 98th Avenue will restart in 2011. Per City Council action, $370,600 in New Development Participation will help fund the Lowell Boulevard streetscape and 78th Avenue/Turnpike Drive/Lowell Boulevard intersection realignment project.	$564,957	$7,255	Dave Downing (CD)	various developers	N/A
▶	**Parks Renovation Program -** This program seeks to fund improvement projects that are needed to update the safety and quality of Westminster parks.	2010 projects at Wolff Run and Municipal Parks are complete. Other 2010 projects include work on a dog park in the southern part of the City, as well as some work at the central fountain area at City Park.	$1,379,582	$184,082	Richard Dahl (PR&L)	City Employee	various vendors
▶	**Public Safety Facilities Maintenance (BO&M)** - Funds for the maintenance costs for the Public Safety Center and fire stations throughout the City. Identified projects include the interiors of the public safety facilities, upgrading the HVAC systems at various fire stations and replacing the carpet as needed at the public safety facilities.	$200,000 will be used for energy retrofits at the Public Safety Center and six fire stations through the Siemen's Energy performance contract. These retrofits commenced in July 2010. HVAC equipment at Fire Station #4 is scheduled to be replaced in September 2010. The heating system at Fire Station #6 is scheduled for replacement in October 2010. Repairs to exterior facades and painting have been completed at Fire Stations # 4 and # 5.	$347,591	$20,966	Jerry Cinkosky (GS)	City Employee	DiTirro Drywall; Bonner Painting; AMS Mechanical; Synergy Mechanical; and various vendors and suppliers
▶	**Recreation Facility Improvements -** Projects at various recreation facilities to enhance guest experiences. Projects include upgrades to aquatics, weight rooms, etc.	Recreation facility enhancements include on-going replacement of aging fitness equipment pieces at City Park Recreation Center (CPRC), City Park Fitness Center and West View Recreation Center. Projects that have been completed include tile replacement at the MAC, restroom refurbishment at CPRC and some painting at several facilities. Replacement of aging fitness equipment, floor refurbishment and additional painting are items that will be completed during 4Q 2010.	$1,028,662	$80,721	Peggy Boccard (PR&L)	City Employee	Various Suppliers
▶	**Recreation Facilities Major BO&M Maintenance** - Funds will allow for more timely repairs and maintenance of all recreation facilities, also providing more flexibility in funding non-recreational facility repairs by freeing up funds for those projects. Projects will focus primarily on recreational facility deficiencies identified through the Borneningeering facility needs assessment study.	Projects for 2010 include sectional roof repairs/replacement at City Park Fitness Center (CPFC), major repairs to aluminum storefronts at City Park Fitness Center to prevent moisture intrusion and glass replacement at City Park Recreation Center (CPRC) and CPFC. Glass replacement at CPRC was completed during the aquatics renovation project and CPFC glass replacement is ongoing.	$1,024,032	$111,055	Jerry Cinkosky (GS)	City Employee	Mile High Glass; U.S. Engineering; Adolph Peterson; BM Roofing
▶	**Standley Lake Regional Park Improvements -** This project will fund improvements that upgrade, update or renovate existing facilities at the Standley Lake Regional Park.	A new restroom funded partially by a grant was completed in December 2009. The grant also helped fund a campground trail and landscape upgrades associated with the restroom. Additional projects for the future include improvements to roadways, boat docks and boat storage facility. Expansion of the boat storage facility is in final development stages.	$245,904	$60,075	Ken Watson (PR&L)	City Employee	Sorenson Engineering; Ennis Assoc. Architects; CG Construction General Contractor
	Sidewalk Connections - This project provides funding for the design and construction of "missing links" of sidewalks at various locations where private development is not anticipated in the foreseeable future.	Two bus bench/shelter pads were installed during the summer of 2009. Future projects are to be determined.	$46,058	$0	Dave Downing (CD)	City Employee	N/A

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
▶	**Small Business Assistance Program -** The creation of this program represents the phase-out of the City's Business Facelift Program, which provided matching grant funds to businesses and commercial property to improve building exteriors and/or site improvements in the south Westminster area. The project title has been changed to reflect the City's interest in looking at a greater variety of ways to help support small businesses in the City of Westminster. The project provides financial assistance to encourage the growth of existing businesses in Westminster with 25 or fewer employees. The program is designed to pay for one-time project related costs. Qualifying projects include tangible asset costs, office furnishings, specialized equipment, software purchases, IT equipment, capital improvements and machinery.	The program is regularly promoted through City Edition, the City's Business E-newsletter and speaking engagements. Seven applications have been received and six of those applications have been approved. in 2010, $26,525 has been awarded to Westminster businesses as a result of this program.	$93,213	$26,525	Susan Grafton (CMO)	City Employee	N/A
▶	**South Westminster Revitalization** - Funds to be used in conjunction with planning, appraisals and capital funding of redevelopment projects within south Westminster including the Northgate Center, 73rd Avenue/Lowell Boulevard redevelopments, Rodeo Market and South Westminster Street Design Manual.	The South Westminster Street Design Manual is complete. Conceptual development plans are underway for Phase 3 of the 73rd Avenue/Lowell Boulevard redevelopment project. The remaining Lowell Row Townhomes are under construction. Curb, gutter and sidewalk modification at the Rodeo Market property is complete. The City's Intergovernment Agreement (IGA) with Adams County regarding Little Dry Creek improvements is complete. The Harris Park concept plan draft is complete and Staff will share this with the community in order to gather input.	$462,210	$144,517	Tony Chacon (CD)	City Employee	Various
▶	**Street Lighting Improvements** - This project provides funding for the installation (by Xcel Energy) of isolated street lights in areas requested by citizens.	Single street lights are occasionally installed on an as-needed basis throughout the City. As of September 1, 2010, two new residential street lights were installed. The balance of the funds will be utilized for street light installations on 120th Avenue, which are currently being designed by Xcel Energy.	$29,705	$11,125	Mike Normandin (CD)	Xcel Energy	Xcel Energy
▶	**Traffic Signal System Improvements** - This project provides funding for the design and installation of traffic signals at selected intersections and installation of major traffic signal infrastructure improvements.	The traffic signal at the intersection of 120th Avenue and Zuni Street was activated in August 2010. Final payment is pending based upon completion of final punch list items.	$331,671	$236,731	Mike Normandin (CD)	City Employee	The 120th Avenue and Zuni Street traffic signal was designed in house. The construction bid was awarded to DKS Enterprises Inc.
▶	**Trail Development -** Implement the trails master plan by developing identified trails throughout the City as funding permits.	A Trails Master Plan update will be pursued in the future, but it is currently on hold. Trails completed in 2009 total 3,700 feet of soft trail and 760 feet of concrete trail. 2010 trail construction projects installed to date include the Bradburn Trail extension and completion of the "Panorama Loop" trail in the Westcliff area.	$285,656	$25,391	Marty Chase (PR&L)	City Employee	Goodland Construction; M&M Contractors, Inc.
▶	**Tree Mitigation -** This project serves as a "holding account" for developer contributions toward landscaping requirements. These funds will be utilized throughout the City towards forestry projects, including tree replacement and new tree plantings as needed. The tree mitigation money is being used to replace trees that have been removed from public grounds across the City.	Staff will pursue tree replacements on the grounds of various City parks and facilities during the fall of 2010. Replacements will be based on spring and summer tree removals, along with the status of the existing canopy cover for each area.	$3,938	$0	Richard Dahl (PR&L)/John Kasza (PR&L)	City Employee	N/A
	Underground Utility Lines - This project houses funds that are collected from private developers as "cash-in-lieu" payments for the underground relocation of overhead utilities adjacent to their sites. Xcel Energy will not perform these relocations for short lengths of lines. In such cases, funds are collected from the developers for future, longer projects.	Staff continues to monitor areas where "cash-in-lieu" has previously been collected for opportunities to create larger projects that Xcel Energy would be willing to perform.	$177,124	$0	Dave Downing (CD)	Xcel Energy	Xcel Energy

UTILITY CAPITAL IMPROVEMENT FUND

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
▶	**Miscellaneous Stormwater Drainage Improvements** - This project is intended to fund the design and construction of all types of drainage improvements on an ongoing basis.	Current miscellaneous stormwater projects include the major drainageway planning with the Urban Drainage and Flood Control District (UDFCD) on Big Dry Creek, State National Pollutant Discharge Elimination System (NPDES) permit programs, a letter of map revision (LOMR) for North Cotton Creek, wetlands mitigation monitoring, South Westminster TOD area drainage impact fee analysis, Timberlake Pond improvements, 2010 small drainage construction projects and other minor drainageway repair issues.	$680,011	$74,117	John Burke (CD)	City Employee	various
▶	**Open-Cut Water Line Replacements -** This project is for the replacement of identified sections of water distribution system piping that has reached the end of its economic life. Locations will be selected based on past pipe break history, anticipated changes in pressure zones, or coordination with other sewer line or street rehabilitation projects. Future project selection will be enhanced by using tools developed in the Infrastructure Master Plan to select vulnerable pipelines based on age, material, pressures and other criteria.	In 2010, funds are being used for: Meadowlark TOD Area Waterline Project - This will include waterline replacement in the Meadowlark Subdivision (104th Avenue and Bryant Street) and in the TOD area along 71st Avenue and Irving Street. Design is 90% complete and construction will begin in January 2011 to facilitate final paving during warm weather months in 2011. 2008/2009 Open Cut Projects - This project is complete. Phase 1 was the south Westminster portion of the City including the Skyline Vista area. Phase 2 was north of 92nd Avenue, west of Federal Boulevard, east of Meade Street and south of 96th Avenue. Staff expects to make final contract payment to NCC in 3Q 2010. St. Anthony North Waterline - J&T Consulting, Inc. was awarded the design contract for this project, consisting of the replacement of the 6" waterline on Alcott Street along the east and north boundaries of St. Anthony's North Hospital with a new 12" waterline to improve pressures and flows in this area. Design has been completed and the construction component of the project went to bid in July. Staff intends to take a construction contr	$3,790,769	$167,872	Kent Brugler (PW&U)/Dan Strietelmeier (PW&U)	City Employee	Various
▶	**PACP Sewer Line Open-Cut Replacement -** This project consists of open cut replacement of sanitary sewer lines where trenchless technology cannot be utilized. Open cut replacements are used to increase pipe sizes, eliminate sags and other serious defects and will be used where both the water and sewer lines in a particular location require replacement. Replacement of local sanitary sewers will minimize inflow and infiltration into the sanitary sewer collection system, minimize customer calls of backups due to defective pipes and potentially reduce bill flows to Metro Wastewater by eliminating inflow into the sanitary sewer system.	A 2010 project being funded by this account is the Osceola/Perry Sewer Replacement. This project will replace approximately 2,300 feet of existing sewer pipeline in Perry Street from 94th to 96th Ave, east on 96th to Osceola, then south in Osceola to 95th Avenue to improve the hydraulic grade of sewer in the area. The URS design was awarded to New Design Construction in March 2010. Construction started in July and project completion is anticipated by end of September 2010. The critical sewers replacements at Ranch Golf Course and Countryside Open Space project was awarded to J&T Consulting, Inc. in June 2010 for design phase services. These two sites were identified as "critical" because of their potential for sanitary sewer flow violations, failing manhole structures and significant levels of infiltration and inflow into the City's sanitary sewer collection system. The consulting engineer has finalized drawings and specifications. The bidding phase of this project is scheduled for September 2010.	$4,105,171	$129,424	Kent Brugler (PW&U)/ Mike Wong (PW&U)/ Stephanie Bleiker (PW&U)	City Employee	Brown and Caldwell; Northern Colorado Constructors; Ricor, Inc.
▶	**PACP Sanitary Sewer Line Trenchless Rehabilitation -** The project will provide funds for the repair of deteriorated local sanitary lines by trenchless rehabilitation (lining) of small diameter (less than 18-inch), and where appropriate, large diameter sewers throughout the City. Maintenance of local sanitary sewers will minimize inflow and infiltration into the sanitary sewer collection system, minimize customer calls of backups due to defective pipes and potentially reduce bill flows to Metro Wastewater by eliminating inflow into the sanitary sewer system. This project will help extend the lifespan of the existing collection system.	One section of a 2009 project remains outstanding due to a liner defect and resolution of this item is pending. Funds appropriated into this project account in 2010 will fund a lining project of approximately 67,000 linear feet centered on 92nd Avenue and Lowell Boulevard. Insituform Technologies, Inc. is the City's contractor for 2010 small diameter sewer pipe lining, which has a project budget of $1,198,227 with a 10% contingency of $119,822. Wildcat Civil Services is the City's contractor for 2010 large diameter sewer pipe lining, which has a project budget of $114,386 with a 10% contingency of $11,438. Project completion for both of these components is anticipated in 1Q 2011.	$3,101,082	$948,105	Dan Shjandemaar (PW&U)	City Employee	Western Slope Utilities
▶	**Pump Station Improvements -** This ongoing project allows for the general replacement of pump station mechanical, electrical and process equipment on an as-needed or on-condition basis. It allows for the planned replacement of major capital items instead of an unplanned failure.	In 2010, funds are being used for: Pecos and 144th Avenue Re-circulation Pump - The General Services Engineer is designing a small pump that will force circulation and improve water quality in the dead-end section of the 144th Avenue water line. The new pump will be designed and installed this year. Well Abandonment Project - This project involves the surface clean-up of abandoned City wells. Electrical/Mechanical Pump Improvements - This project is partially completed and will continue through 2011. Other Projects - Jockey pumps have been ordered and delivered. Installation commenced in August 2010. A replacement pump for Wandering View is under consideration, along with replacement rotating elements for three other sites.	$420,174	$32,375	Richard Clark (PW&U)/ Dan Strietelmeier (PW&U)	City Employee	Various

CAPITAL IMPROVEMENT PROGRAM - ONGOING PROJECTS

UPDATED	PROJECT TITLE/DESCRIPTION	PROJECT STATUS (as of 8/31/10)	BUDGET	SPENT (8/31/10)	PROJECT MANAGER (DEPARTMENT)	EXTERNAL PROJECT MANAGER UTILIZED?	ENGINEERING FIRMS OR CONTRACTORS
▶	**Reclaimed Water Distribution System Improvements -** This project is for the design of improvements to the reclaimed water distribution system. This project will result in a number of modifications to the reclaimed distribution system consistent with the Reclaimed Water Treatment Facility expansion. These modifications will upgrade the distribution system to function in a manner that is consistent with current and future demands. The project will also provide new customers with reclaimed water service and improved service to existing customers.	Phase 1 of the Reclaimed Water Salinity Management Plan has recently been completed and Staff is working on the next project phase. Other reclaimed water distribution system improvements are currently in design phase. In addition to other minor improvements, a series of totalizers have been purchased for field installation to better track data for billing purposes. Construction on other reclaimed water distribution system improvement projects are scheduled to commence in November 2010.	$2,822,915	$345,305	Stephanie Bleiker (PW&U)/ Jenny Fifita (PW&U)	City Employees	Various
▶	**Water Meter Transponder Replacement Program** - Project commenced in 2005 to replace customer water meters that are at the end or near the end of their useful life. Meters of selected ages and in selected meter routes will be replaced in a programmed manner to transform from negative replacement of stopped meters to a proactive program of replacing meters as they approach the end of their useful lifespan.	City-wide residential meter replacement was substantially complete in June 2008. Approximately 2,700 TRACE units remain. These are larger commercial meters in eight selected residential routes and they will be replaced by in-house crews over the next three to five years. Purchase of materials for conversion of medium meters ($146,382) to ORION was made in January 2009. This work is 95% complete. Remaining funds were used to replace obsolete 3-inch and 4-inch Recordall type compounds & turbine meters. All 3 and 4 inch meter installations are complete. Also, all remaining residential TRACE transponders have been replaced. Purchases and replacement work on 6-inch meters will start in 4Q 2010.	$287,280	$30,215	Richard Clark (PW&U)/Bob Booze (PW&U)	City Employee	National Meter & Automation, Inc.
▶	**Water Pressure Zone Enhancements -** This project consists of the installation of new water lines, pressure reducing valves, and pre-planning for water pumping stations and/or water storage tanks as identified in the Infrastructure Master Plan Study. Currently, the plan is to enhance the City's water distribution system by regulating the water pressure throughout the system. Project locations will be selected based on anticipated changes in pressure zones, which may include the installation of pressure reducing valves, water line installations or pre-planning for new pump stations and/or water storage tanks.	Projects in this ongoing account include: Southern Pressure Zone 1 water line design was completed by Burns and McDonnell (see Southern Zone 1 Transmission Pipeline project description in "Major Projects" document). 75th Avenue Waterline construction was completed by Brannan Construction in August. The new 16-inch waterline extends along 75th Avenue from Winona Street to Stuart Street. Pressure Zones 3 and 4 improvements are underway with URS performing distribution system modeling for these pressure zones, which encompass the Westminster Center Urban Reinvestment Project (WURP) area and extends to western City limits. Modeling will account for future WURP water demands to determine waterline and pump station replacement needs for the pressure zones. Modeling results are being evaluated and project design will be initiated later in 2010. Home Farm PRV will include replacement of a corroded pressure relief valve in the Home Farm area. Design and construction is scheduled to occur later in 2010. Federal Boulevard Main and Wandering View Yard Piping and the associated	$4,852,712	$669,539	Dan Strietelmeier (PW&U)/ Stephanie Blieker (PW&U)/ Mike Wong (PW&U)	City Employee	Various
▶	**Water Tanks - Major Repair and Replacement** - This ongoing project funds design and construction of recommended repairs and improvements at six of the City's water storage tank sites. Improvements will be made in phases and will be prioritized based on critical needs and available funding. Repair and replacement items will include improvements to piping, tank safety, structures, security and tank coating.	The decision has been made to discontinue this project.	$172,169	$0	Dan Strietelmeier (PW&U)	City Employee	Carollo Engineers, Inc.