CITY OF BOULDER
CITY COUNCIL AGENDA ITEM
MEETING DATE: December 3, 2013

To: Members of City Council

From: Jane S. Brautigam, City Manager
Paul J. Fetherston, Deputy City Manager

Date: December 3, 2013

Subject: September 2013 Flood Event – Preliminary Findings

EXECUTIVE SUMMARY:

September 2013 brought unprecedented rainfall to the region causing significant flooding and extensive damage to both private property and city infrastructure. While full recovery is likely to take years, affected critical services have been restored. Some of the rehabilitation work is temporary in nature with more permanent improvements to follow. The flood has also created an opportunity to think strategically about the future. In response on Oct. 15, 2013, City Council approved key objectives to guide near-term flood recovery and the long-term resiliency of the Boulder community (**Attachment A**).

Information presented in these preliminary findings includes a summary of data about the flood event and its impacts on the community. The private property, individuals, and city owned infrastructure implications are outlined, along with preliminary findings and lessons learned. Impact assessments include information provided by the public in the form of reports from property and business owners and feedback obtained in neighborhood meetings. All of this data supports a focus on continuous improvement by allowing the examination of how the organization can further enhance service delivery and inform potential changes to master plans, floodplain mapping studies and capital projects. The impacts experienced by the community are also likely to create interest in new projects and the reprioritization of existing projects.

Departments continue with recovery efforts and have drafted priorities and goals that support the City Council objectives (**Attachment B**) based on what has been learned to date. Disaster assistance has been provided to impacted residents and significant progress has been made in restoring city infrastructure including utilities, streets, parks, facilities and access to open space. The city organization also continues to work closely with disaster relief agencies to appropriately

document damages and repairs throughout the city to maximize reimbursement. In addition, the city continues to support the recovery efforts of individuals and business owners.

Some of the lessons learned support the examination of city policies and this memorandum provides a high level "preview" of policy considerations including those associated with annexations and providing flood protection to a "higher standard." These considerations involve potential trade-offs, private property interests and flood management mitigation strategies. Potential capital and financial considerations are also summarized for City Council review.

This work is intended to build on the information presented previously and provide a foundation for discussions to follow in December and January as the City Council reflects on its vision for the community, establishes goals to support the vision in the context of resiliency and sustainability, and provides direction on a work plan for implementation in 2014 and beyond.

BACKGROUND – WHAT HAPPENED:

Between Sept. 11 and 18, Boulder received more than 17 inches of precipitation, or 85 percent of its annual average. On Wednesday, Sept. 11, more than three inches of rain fell on Boulder and on Thursday, Sept. 12, three times that amount fell. The circumstances warranted the use of emergency alert sirens on Wednesday and Thursday night along with evacuations ordered at the mouth of Boulder Creek. On Thursday night, Office of Emergency Management 'Everbridge' notifications were sent out to a total of 8,000 telephone numbers urging residents to move to higher ground.

The National Weather Service has described the storm event that impacted the region as a 1,000-year precipitation event – an event with a 1 in 1,000 probability of happening in any given year. The city is currently working on a finer grained analysis to better understand the specific impacts to Boulder Creek and its 14 tributaries that flow through the city. Initial indications are that flow rates and extent of inundation may have ranged from as little as a predicted 10-year event (10 percent chance each year) to impacts that correlate with a 500-year event (0.2 percent chance each year). In addition to creek flooding, which is primarily attributable to rainfall upstream of the city, a significant amount of rain fell within the city's boundaries resulting in localized drainage issues and a dramatic increase in the local water table.

More than 7,000 individuals within the City of Boulder have registered for Federal Emergency Management Agency (FEMA) assistance as of Oct. 31, 2013, and upwards of 5,800 households experienced damage to their homes as a result of the flooding, which is approximately 14 percent of the city's total households. Of those, approximately 1,700 had damage that made their residence not habitable until repairs were made, and some homes remain uninhabitable today. One third of all households that registered with FEMA and reported damage statewide are located in the City of Boulder. Several businesses also experienced significant damage, although most have been able to recover relatively quickly. Many received assistance from landlords in handling repairs and clean up. One office structure was completely demolished due to a landslide, and several businesses are still conducting repairs.

Damages to city infrastructure are currently estimated at approximately $43 million dollars, although that number will change as additional assessments and evaluations occur. This includes damage to more than 50 city buildings/facilities; water, sewer, and stormwater infrastructure and

treatment facilities; 47 parks and 7 recreation facilities; sediment and debris in all 15 drainages; more than 30 streets and sidewalks; 25 areas with damage to the multi-use path system; and hundreds of Open Space and Mountain Parks trails, trailheads, irrigation facilities, fences, and natural ecological resources. The city is utilizing all available resources in the recovery and reimbursement process including city insurance policies, FEMA assistance, and other federal agencies (e.g.: Federal Highway Administration, Urban Drainage & Flood Control District, Colorado Water Conservation Board, etc).

A detailed description of flood impacts to people, private property and infrastructure citywide is provided in **Attachment C.** (See www.BoulderFloodInfo.net for more detailed maps of flooding and impacts in Boulder and see wwa.colorado.edu/resources/front-range-floods/assessment.pdf for a preliminary assessment of flooding on the Colorado Front Range.)

INITIAL LESSONS LEARNED:

The flood has created an opportunity to think critically about the future. On Oct. 15, 2013, City Council approved **Key Objectives** to guide near-term flood recovery and the long-term resiliency of the Boulder community (**Attachment A**).

The City of Boulder prides itself on being a learning organization. The "after-action" evaluation of projects and events is part of the 'Vision' for our organization (*Service Excellence for an Inspired Future)* and is engrained in the organization's values (Customer Service, Collaboration, Respect, Integrity and Innovation). While staff continue to debrief the emergency response and flood recovery actions taken to date, it has been noted that a key aspect of what has been learned was summarized by a local resident in an Oct. 8 Letter to the Editor of the *Daily Camera* (see text box). A principle take-away is that everyone has a role to play. It is important to understand respective responsibilities and effectively partner to maximize the community response in an emergency.

***Daily Camera*, Letter to the Editor**
Lessons from the Flood
JIM MARTIN (*Boulder)*
(POSTED: 10/08/2013)

What I learned from the flood:
1) Have a sump pit in your house.
2) Have a sump pump that works and is plugged in.
3) We have a need for good government on the national, state, regional and local level.
4) Clarify and prioritize what is important with your stuff.
5) I have too much stuff.
6) Sewer water can flow uphill.
7) Neighborhoods become neighborhoods.
8) Grandma's old fans are as important as when I was growing up.
9) Read your insurance policy carefully.
10) Excessive mud is as bad as too much water.
11) Lack of floodplain designation doesn't mean you won't get flooded.
12) People, not things, are what are important.
13) We are powerless over so many things in our lives.
14) Nature may eventually take back all of man's work.
15) Don't ignore the problem it may get worse.
16) People are basically good.
17) There is a little bit of heaven in every disaster area.

At the City Council meeting on Oct. 29, council acknowledged various partners with a *Declaration of Appreciation*. The collaboration demonstrated by residents, volunteers, the private sector and other public agencies highlighted the importance of the way to engage the community in order to leverage the collective wisdom and creativity that enables thoughtful consideration of solutions to complex problems.

As the organization has reflected on the flood, other lessons that have been reinforced include:

- Communication tools are instrumental in supporting the exchange of critical information with the community and across the organization;
- Long-range planning efforts support strategic investments, including mitigation efforts;
- On-going planning and training relative to emergencies and maintaining the continuity of city operations supports effective response and recovery;
- It will be critical to capture lessons learned from recovery efforts and put in place a recovery plan for the future;
- System redundancy will help maintain service delivery when portions of systems are compromised;
- The city's experience managing the Capital Bond project assessment has application to this effort in terms of citywide collaboration to prioritize projects in conjunction with the Capital Improvement Program (CIP);
- Engaging directly with community members is key to building social capital and maintaining community trust; and
- Neighborhood impacts may warrant the review of official jurisdictional boundaries in order to support the effective and efficient delivery of local government services.

These lessons learned have provided the basis for staff drafting **Priorities and Goals** in support of the Key Objectives adopted by the City Council (**Attachment B**). Additional analysis and assessment are needed in order to more consistently provide for specific and measureable goals. Some of the lessons learned also support the examination of city policies.

PREVIEW OF KEY ISSUES FOR FUTURE COUNCIL CONSIDERATION:

A high level "preview" of policy issues along with potential capital and financial considerations is presented for review and comment. City Council feedback will inform next steps and the further examination of these issues.

Preview of Policy Issues

As mentioned previously, some of the lessons learned support the examination of city policies. Some of the policy issues are of more immediate concern, such as annexation, while other issues will be discussed with council in the future. For annexation, council's initial feedback is requested on the identified options, proposed scope of work, and prioritization of funding as staff is currently in active discussion with some property owners. The remaining policy issues are provided in this memorandum at a high summary level since more detailed discussions will occur in the future.

Immediate Policy Issues – Annexation

Overview

After the September flood, the city was contacted by a number of property owners outside of the city with concerns about their wells and on-site wastewater systems, and interest in connecting to the city's water and/or wastewater systems. This includes several property owners in Area II and a few property owners in Area III of the Boulder Valley Comprehensive Plan (BVCP). Staff has been evaluating how the city could help address immediate and long-term public and environmental health concerns related to individual well and on-site wastewater systems by facilitating annexation and connection to city utilities. The current focus is on residential properties in Area

II with wells or on-site wastewater systems. Additional background information and analysis is provided in **Attachment D**.

A number of key issues affect the ability of the city to expeditiously annex Area II properties:

1. **The status and condition of Area II wells and on-site wastewater systems is unclear and variable.** While some homeowners have tested their wells and found contamination, their neighbors may not have experienced the same problems. Interest and motivation to connect to city services varies.
2. **Access to utility infrastructure varies.** Most properties in enclaves and along the western edge of the city have access to existing water and sewer mains in the street, somewhat simplifying the cost and process of annexation. However, some areas do not, increasing costs.
3. **Annexation and utility construction is costly.** While annexation costs have always been challenging, both city and property owner ability to fund these costs has been significantly impacted by the flood. Many of the property owners with well and/ or septic system issues have flood damage to their homes and property**.** In the past, the city has up-fronted costs, subsidized costs normally recovered through fees, and offered financing packages. A key policy issue is how the city prioritizes funding for annexation efforts relative to other current (and future) projects. In addition, the city will be taking on maintenance costs for the roadways that will be annexed.
4. **Annexation efforts are resource intensive.** Group or neighborhood annexations have been long, resource intensive and often controversial processes. Significant effort is typically spent in developing incentives for people to annex and negotiation of fees and other city requirements such as easement dedications. While the city can unilaterally annex enclaves, the city is limited in its ability to impose conditions through the unilateral annexation process such as requiring the dedication of stormwater easements. It is clear from past experience and current conversations with property owners that most people are unlikely to annex unless:
    - The benefits of annexation are viewed as outweighing those of remaining in the county (financial, regulatory, services); and
    - There are financial incentives offered to make annexation more feasible.

    Funding for staff resources to pursue annexation of these properties will need to be addressed.

City staff is currently in preliminary annexation discussions with property owners on Old Tale Road. Several landowners contacted staff due to well contamination after the flood and requested information about annexation. Most of the properties are connected to city sewer, but not water. A proposed annexation package with preliminary cost estimates was sent to homeowners (including waiving annexation fees and development excise taxes similar to the Gapter Road annexation package) and an informational meeting was held on Nov. 19. Eight of the 29 property owners attended the meeting and raised several concerns. There is some interest in annexation but, at the current time, full participation of property owners along Old Tale Road is highly unlikely. The primary concerns involve the cost of annexation and lack of financing options. A number of questions were identified for follow-up and staff offered to compile

additional information and hold a second meeting in January. Property owners were primarily interested in discussing the benefits of annexation versus remaining in the county.

Options for Addressing Financial Disincentives

In neighborhoods where utility mains need to be constructed (Old Tale Road, Cherryvale Road, Githens Acres), participation from most or all of the property owners is needed to recover the upfront construction costs unless another financial source and financing is made available. The following are a few options:

1. **City upfronts construction costs with assurance of a minimum participation rate (Old Tale Road model).** Under this option, the city would upfront the costs of constructing the water and/or sewer mains in the street and resurfacing the road with the guarantee that enough residents along the road would annex, connect to utilities and pay-in-full once the utilities are installed. A preliminary package was presented to the Old Tale Road neighborhood that would require 75 percent participation in order to minimize the city's risk in carrying the costs of the capital outlay for non-participants. The city would cover annexation costs, and city services that utilize excise tax funding would lose this revenue. The letter sent to Old Tale property owners is included in **Attachment C**.

2. **City upfronts and offers financing of construction costs with assurance of a minimum participation rate (Gapter Road model).** The Gapter Road and Crestview East annexations are cases where the city upfronted the cost of the infrastructure construction and offered a 10-year financing package for individual shares of costs. In order to minimize the carrying costs to the city (in the case of Gapter Road), a minimum participation rate of 75 percent was set. The neighborhood was unable to meet that minimum threshold so Boulder County stepped in to help with the financing of the construction costs. At the time of the Gapter Road annexation, the city was in the financial position to carry some of the costs. No threshold was set for the number of participants that must pay-in-full. However, the city and the county are not in the same financial situation as five years ago.

3. **Local Improvement Districts.** Staff is exploring whether a Local Improvement District could help with financing costs for homeowners. While a local improvement district would be able to bond and enable costs to be financed over a number of years, it likely can only bond to pay back infrastructure costs, not fees. Additionally, the city or county would likely need to take on the costs for those who do not annex, again creating a financial challenge for the city and/or county.

Council Feedback

Council's initial feedback is requested on:

- The annexation options identified above and if a preferred option rises to the top;
- The proposed scope of the annexation effort, focusing primarily on property owners and neighborhoods with wells and on-site wastewater systems in Area II; and
- The prioritization of annexation efforts and funding and/or financing for flood impacted residents relative to other city needs.

Future Policy Issues
Other potential policy issues for council consideration include the following:

Floodplains & Mitigation
Mapping Studies: Historically, floodplain mapping studies and mitigation planning have been controversial. It has been fairly common for residents and business owners to oppose adoption of mapping that identifies their properties within a regulatory floodplain. The council plays an important role in balancing the interest of property owners to avoid being identified within a flood-prone area with the need to accurately map hazards, prioritize outreach and mitigation efforts, and implement protective regulations.

Property Acquisition: The Utilities Division allocates approximately $500,000 per year to acquire private properties at highest risk for flood impacts. Recent events may result in community interest in an increased level of property acquisition. City property agents are currently in discussion with a number of property owners in heavily impacted areas. In areas like Gregory Canyon Creek, the city does not have easements that would allow access for restoration or mitigation. Flood mitigation projects typically require a contiguous city property interest and are not feasible if the city is unable to obtain easements from all impacted property owners.

Regulations
Floodplain Regulations: City Council recently approved a "Critical Facilities" ordinance requiring certain land uses to meet higher regulatory standards for development in floodplains. This ordinance was the result of a multi-year process. Community involvement included advocacy by potentially regulated businesses seeking to limit additional regulation. The recent flooding may result in community interest in enhanced regulations. Council will play a key role in balancing the need for regulations with economic impacts.

Illicit Connections: A significant portion of the infiltration/inflow into the wastewater collection system may be related to non-wastewater discharges and other inflow and infiltration on private property. Illicit connections, for example, sump pumps connected to the sanitary sewer system, are not easily identified or remedied. The council may be asked to make a recommendation on measures to attempt to reduce illicit connections in the system.

City Infrastructure & Capital Improvement Program (CIP) Prioritization
Creek Restoration: There is no pre-existing federal, state, county or local plan for coordinated post-flood river management. Consequently, staff has been working with a variety of governmental agencies, both regulatory and advisory, in developing approaches to the near and long-term restoration of creeks that integrates a wide range of community services (e.g., off channel water delivery, aquatic and riparian habitat, flood conveyance, transportation, recreation as well as public health and safety). Staff will continue to seek involvement in general flood recovery conversations in order to integrate conservation goals and objectives in watershed and creek plans. Each of these projects will be assessed by staff in partnership with boards or City Council direction, as appropriate.

Transportation: Overall, existing transportation policy approaches have demonstrated their value. The Greenways Program, which serves multiple city goals, served its purpose well during the flood. The pavement repair program has allowed the city to better manage street conditions

through systematic maintenance. Well-maintained streets fared better in the flood. Recently overlaid streets such as Linden Avenue (at Twomile Creek) and 47th Street (at Fourmile Creek) were subject to heavy flood flows but had little pavement damage. Increasing the transportation operating reserve has provided greater flexibility to respond to this emergency, particularly related to debris removal. If significant additions to the transportation system occur through annexation, recent increases to funding would not adequately cover those increased infrastructure responsibilities.

Mitigation Work at City Buildings: FEMA will reimburse the cost of additional flood mitigation work up to 15 percent of the amount of damages. Additional reimbursement is dependent upon the city's ability to provide documentation of a history of flood damages. Further, the proposed mitigation would also need to demonstrate that it would protect against a 50-year event and for every dollar spent, would prevent between 4 to 5 dollars of damage. Currently, these criteria cannot be met. Additional facility investments for mitigation may be proposed for City Council review and consideration in a future CIP.

Climate Change/Resiliency: Most new city infrastructure is designed based on a storm event with a 1 percent probability of occurring in any given year based on historic data (the 100-year flood). As reflected in the City Council's key objectives, the community's experience with the recent flood event and the likelihood that similar events or larger events will occur in the future, may trigger a broader discussion of what scale of event the city should use for its design standards. As an example, current design standards for new stormwater collection systems on residential streets are based on up to 18" of flow depth at the gutter during a 100-year storm event. Design standards could be modified, but would result in increased costs and could decrease the resources available to upgrade or construct systems in areas that were built prior to current standards and may have significantly less capacity.

Livestock Fencing: OSMP intends to work to contain livestock in a manner consistent with pre-flood conditions to protect livestock, community members and private property. This means either repaired fences prior to scheduled movement of livestock onto a property, or modifying grazing schedules so that livestock are placed only on fields with satisfactory fencing.

Resource Allocation, Planning and Assistance

Competing Priorities for Resources: Even prior to the flood event, the city had an ambitious work plan including exploring a new energy future, implementing Boulder Junction, completing a vision for the Civic Area, launching a study for a comprehensive housing strategy and many other important projects as well as simply maintaining existing assets. Flood recovery activities have created a new, essential work plan item that could reveal additional priorities to compete for funding, staff time and other resources.

Community Involvement in Trail Planning: Community involvement in trail planning has been a hallmark of Open Space and Mountain Parks (OSMP). In cases where repairs will restore infrastructure to the pre-flood conditions or where changes that will be made are consistent with a council-approved plan, no special public process is proposed. The West Trail Study Area (TSA) Plan identified several areas were improvements were anticipated when opportunities arose but the plan provided no specific guidance about changes to be made. The flood has created an opportunity to address some of these situations and OSMP will follow a site-specific

planning process to involve community members in the development of new visitor access. Finally, where restoration to pre-flood condition is not practical, OSMP proposes to develop a public process to develop and review options before making recommendations as appropriate to the Open Space Board of Trustees (OSBT) or City Council.

Agricultural Lessees: OSMP staff has worked with agricultural lessees to help them identify opportunities for individual assistance to address flood impacts to their operations. Agricultural operators sometimes find they are not eligible for FEMA individual assistance for farm losses, although low interest loans may be available, funding through the US and Colorado departments of agriculture has been extremely limited. Recognizing the impacts and lack of corresponding assistance faced by agricultural producers, 2013 lease payments will be reduced for farmers and ranchers operating on OSMP lands.

Preview of Financial Issues

Due largely to the city's reserve policies and ability to flex repair dollars, the city is able to fund the emergency response and initial recovery investments (see **Attachment E** for fund-specific information). Through the budget process, longer term plans will need to include replenishing the portion of reserves that are not addressed by reimbursement. The city is striving to maximize reimbursement; however, the extent of FEMA, state and FHWA reimbursement is still to be determined.

It is anticipated that FEMA will reimburse the city for 75 percent of eligible costs to restore flood-damaged, publicly-maintained infrastructure to pre-flood conditions. The State of Colorado has indicated that it will provide an additional 12.5 percent toward eligible expenses. While this reimbursement will be a tremendous benefit to the city, not all costs are eligible and the city will still be required to pay for at least 12.5 percent of the costs, and any costs denied by FEMA or the state on eligible projects. Damaged private properties or infrastructure not maintained by the city prior to the flood is not eligible for FEMA reimbursement through the city. For example, most areas of Gregory Canyon Creek are on private property without easements for city maintenance. FEMA will not allow the city to accept easements and maintenance responsibility after the event as a means to obtain funding.

Initial indications are that FEMA reimbursements for items classified as initial debris removal and emergency work could be reimbursed within six to twelve months from the time submitted. The reimbursement timeline for all other classifications (the major portion of the work) could be as long as two years or more from the time submitted. The documentation effort is complex and must be completed to exact FEMA specifications. In contacting other governments that have been through the FEMA process, the city was encouraged to contract with FEMA consultants to help navigate the processes required, and ensure that maximum reimbursements are achieved. The consultant's costs are eligible for partial reimbursement from FEMA, similar to other flood costs.

To assist in the flood recovery efforts and in an effort to reduce costs, staff is utilizing volunteers and exploring grant opportunities. However, grant funding to restore affected facilities to better than pre-flood conditions are highly competitive. The city is currently investigating grant funding opportunities for mitigation projects. There is a need to coordinate the grant writing process across the city. The workload is not something that can be absorbed by current staff. To

ensure that the city has the greatest opportunity of knowing what grants are available and in being successful with submitted grant proposals, a position will be added who will coordinate and lead the grant writing efforts for flood recovery.

The city is already beginning to see cost escalation and shortages in construction materials and available labor due to the regional nature of the flood disaster. This will impact flood-related work as well as unrelated CIP work that rely on similar resources. Staff anticipates returning to council in 2014 for supplemental appropriations to the budget as the flood recovery work progresses.

The upcoming work on the comprehensive financial strategy (CFS) update may be influenced by damage that occurred during the flood. The next phase of CFS will consider capital and associated operating needs in the city for new, replacement and improvements in infrastructure. Staff is beginning to evaluate how flood related damage may impact the current capital improvement program.

Preview of Capital Improvement Program (CIP) Issues

Based on the damage assessment to date, it is anticipated that the 2014-2019 Capital Improvement Program (CIP) will be re-evaluated. In some cases it may cause a reprioritization of proposed projects or advance projects in the priority array. This information will be brought forth to council during 2014. The exact timeline will be determined in the near future and will be brought to council for discussion. Provided below are initial capital considerations.

Public Works

Floodplain mapping studies to identify hazards and support mitigation efforts generally involve a multi-year study and process prior to submittal to FEMA for review and adoption. Building community consensus on mitigation approaches, securing property interests and completing construction can take many additional years to complete. Current CIP funding levels and work programs are based on a long-term approach with several of the city's major drainageways in some stage of study or mitigation at any point in time. As examples, Two Mile Creek/Upper Goose is currently being restudied, a mapping study of Boulder Creek is currently in review by FEMA, mitigation planning for South Boulder Creek is ongoing, and a mitigation project on Wonderland Creek, upstream of the Kings Ridge neighborhood, had been designed and slated for construction prior to the flood.

The flood has resulted in significant data that can be used to calibrate floodplain models to better predict future events. It has also resulted in requests from multiple neighborhoods to add or expedite flood management-related efforts and public concerns about the adequacy of local drainage systems. The extensive inspection required to assess any flood-related damage may also identify other system issues that will need to be addressed through the CIP.

The city has separate wastewater and stormwater collection systems. The recent flood event may highlight the need for additional investment improvements to reduce system vulnerability via rehabilitation or enhancements. The extensive system inspection being conducted to identify and address flood-related damages may also uncover additional issues such as pipe conditions or hydraulic capacity, which may result in reprioritization.

Some examples of Utilities, Transportation and FAM projects that could be considered in the CIP include –

- *Expedited construction of a pipeline from Carter Lake to Boulder Reservoir*. Left Hand Water District (a partner in the proposed project that was severely impacted) is supportive of an expedited schedule, and is investigating potential flood-related grant funding options.
- *Generator installation at Boulder Reservoir Water Treatment Facility*. The facility currently has a single electric feed, no-backup power supply and no infrastructure in place to connect a trailer mounted generator. This would be a significant investment since the Boulder Reservoir Treatment Facility pumps untreated water uphill from the reservoir and treated water into the distribution system.
- *Distribution system investment evaluation and upgrade*. This investment would allow the city to be served exclusively from the Boulder Reservoir Water Treatment Facility during an emergency.
- *Reinforcing critical infrastructure* such as water transmission facilities to improve the ability for existing structures to withstand flooding.
- *Greenways System build out*. Continued, and perhaps accelerated, systematic approach to building out the Greenways flood conveyance improvements that advance other city goals and objectives at the same time.
- *Replacement of smaller timber bridges*. This event highlighted the need for replacement of some of the city's smaller timber bridges in north Boulder over Fourmile Canyon Creek that will require coordination with the stormwater & flood management utility.
- *Groundwater collection and pump system at the South Boulder Recreation Center*. Elevated water table levels coupled with the facility being adjacent to Viele Lake has been problematic to the flooring system. A collection system would prevent groundwater from entering the lower areas of the facility.
- *City facility flood assessments*. Additional flood assessments for city facilities in 100-year and 500-year flood zones with follow-on flood mitigation work.

Parks and Recreation

Many damaged parks and recreation sites and facilities were in established flood zones. As recovery efforts continue and future CIP projects are identified, consideration of project type and size should be considered and possibly relocated out of established floodplains.

As analysis continues, the 2013 and 2014 CIP as well as projects identified using bond proceeds may need to be revised and reallocated to accommodate the costs and timing of the scheduled repairs. Many repairs will include flood mitigation work to ensure this level of damage does not occur in the future.

Based on the current assessment of necessary repairs, no major revisions or changes to the department CIP are anticipated, except for potential delay of projects due to funding availability. However, once insurance or FEMA reimbursement is received, the projects will proceed as planned.

Additionally, applications for Great Outdoors Colorado and Colorado Parks and Wildlife grant funds to aid in the funding of repairs to important recreation and restoration sites is anticipated.

The department will continue to work closely with the community during these projects to ensure satisfaction and volunteer opportunities are met.

Open Space and Mountain Parks
Replacement costs for nine miles of fencing will exceed the typical annual maintenance expenditures included in the 2014 recommended budget. If approved, a portion of $1 million of OSMP 2013 supplemental appropriation for flood expenses will be used to address fencing needs. It is likely that staff will return in 2014 with a request for supplemental appropriation to continue repairs. It is anticipated that the bulk of fence replacement expenditures will be reimbursed through FEMAs public assistance program.

Similarly, flood impacts to bridges in the OSMP system were not anticipated in the 2014 recommended budget, the 2013 supplemental appropriation is not expected to address the full suite of bridge replacement or repair projects.

Trail and other infrastructure projects that could be considered in the CIP include:

- Repairs to Sanitas Valley Trail, Chapman Drive and Gregory Canyon access road;
- Bridges crossing the Mesa Trail at Bluebell and Bear Canyon creeks and South Boulder Creek at South Boulder Road;
- Timely repairs to the OSMP land system are likely to require extensive contracted services;
- Repairs to Eggleston #1 and #4 ditches (damaged ditches wholly in city ownership); and
- Repairs to the spillways at Flatirons Vista Lake and KOA Lake.

Applications for funding have been submitted to the Colorado Water Conservation Board for repair to the raw water delivery infrastructure. Replacement of structures used to create and manage aquatic habitat (fish passage structures, log and boulder in-stream habitat features, water level control devices, etc.) could be considered in the CIP.

NEXT STEPS:
The Dec. 3, 2013 council meeting is an opportunity to discuss the impacts of the September 2013 flood and "preview" potential policy, financial, and CIP issues that council will be considering in the future. The Dec. 10 City Council Study Session will include a discussion of the long-term community sustainability and resiliency following the flood and the context it sets for council priorities and capacity within the staff work plan. Council will receive an update on Boulder's Energy Future on Dec. 17. These meetings are intended to provide a foundation for discussions to follow at the January retreat as City Council reflects on its vision for the community, establishes goals to support the vision in the context of resiliency and sustainability, and partners with staff to adopt a work plan for implementation.

ATTACHMENTS:

- **Attachment A –** Council Approved Key Objectives for Near-term Recovery and Long-term Resiliency
- **Attachment B –** Draft City Priorities and Goals to Implement Key Objectives
- **Attachment C –** Summary of Flood Impacts to the Community
- **Attachment D –** Annexation Background and Options for Council Consideration
- **Attachment E –** Financial Fund-Specific Background

RESPONDING TO THE 2013 FLOOD: COUNCIL APPROVED KEY OBJECTIVES FOR NEAR-TERM RECOVERY AND LONG-TERM RESILIENCY

October 15, 2013

September 2013 brought unprecedented rainfall to our region, causing significant flooding, loss of life, and widespread damage. The Boulder community is quickly getting back on its feet. But while many are back to normal routines, others will be dealing with the floods' impacts for months and years to come. As a community, adequate care and support should be ensured for those most affected, in Boulder and surrounding areas, while focusing on the important work of reconstruction and other priorities. The flood has caused harm, but has also created an opportunity: to think critically about our future, and to work together like never before in support of long-term community sustainability and resiliency.

Our key objectives for the near-term recovery and long-term resiliency are:

1. **Help people get assistance**. Facilitate access to individual assistance for affected homeowners, renters and businesses to support their recovery from flood impacts and strengthen long-term resilience.

2. **Restore and enhance our infrastructure**. Invest in projects to restore services and to rebuild and enhance infrastructure, as appropriate, in the interests of public health and safety, community quality of life, and long-term resilience.

3. **Assist business recovery.** Work with the Boulder business community and key partners to connect affected businesses with resources, recover quickly from flood impacts, and support long-term economic vitality.

4. **Pursue and focus resources to support recovery efforts**. Work in partnership with volunteers, governmental and other agencies to maximize financial resources and efficiencies for recovery.

5. **Learn together and plan for the future**. Engage the Boulder community in assessing neighborhood impacts, refining and rethinking community design options, prioritizing actions and opportunities that mitigate hazards before rebuilding and support long-term community resilience and sustainability. In doing so, we build a city both greater and more beautiful than we were before.

CITY PRIORITIES AND GOALS TO IMPLEMENT KEY OBJECTIVES
DRAFT – November 27, 2013

In response to the September 2013 flood, City Council approved key objectives for the near-term recovery and long-term resiliency on Oct. 15, 2013. Based on initial discussions across the city organization, draft priorities and goals for each of the key objectives are listed below. Additional analysis and assessment are needed in order to more consistently provide for specific and measureable goals.

1. **Help people get assistance**. **Facilitate access to individual assistance for affected homeowners, renters and businesses to support their recovery from flood impacts and strengthen long-term resilience.**
   - Support displaced and impacted residents in stabilizing living situations and meeting basic health and human service needs.
   - Coordinate planning and resource deployment with other community partners and resources.
   - Implement and fund a housing rehabilitation partnership with Habitat for Humanity.
   - Continue to monitor the changing needs for assistance, identify gaps, and connect people to available resources.
   - Continue outreach and communications to impacted residences and businesses about flood repair, remediation, and reconstruction needed to ensure the health and safety of buildings and occupants.

2. **Restore and enhance our infrastructure**. **Invest in projects to restore services and to rebuild and enhance infrastructure, as appropriate, in the interests of public health and safety, community quality of life, and long-term resilience.**

   - Repair remaining elements of the water system and wastewater treatment facility by spring 2014.
   - Wastewater collection system:
     - Phase I
       - Inspect and clean approximately 100,000 feet of 8” to 15” pipe (approximately 5 percent of the collection system) by February 2014.
       - Inspect and clean large diameter sewers, such as the main interceptor leading to the Wastewater Treatment Facility by the end of 2014.
     - Phase II – Complete additional assessment and repair based on Phase I and complete by end of 2014 (dependent on extent of issues identified).
   - Publicly Owned and Maintained Major Drainageway System:
     - Phase I – Remove debris and sediment to restore minimal conveyance by spring 2014.
     - Phase II – Remove debris and sediment to restore a significant conveyance and restore some areas to pre-flood conditions by the end of 2014.
     - Phase III – Restore a majority of areas to pre-flood conditions by the end of 2015.

  - Ongoing – Monitor and remove sediment from certain drainageways that continue to erode, especially those whose source is the highly erodible mountainous areas west of Boulder (Boulder, Fourmile Canyon Twomile Canyon, Gregory, Bluebell and Bear), for several years.
- Restore critical elements of the stormwater collection system by spring 2014.
- Complete permanent repair and debris removal for residential and lower volume streets and adjacent culverts, as well as the remaining multi-use paths and underpasses by spring 2014.
- Leverage flood restoration projects to enhance the resiliency of other public and private infrastructure.
- Complete damage repairs at most city facilities and incorporate flood mitigation work, as feasible, by the spring 2014.
- Complete damage assessments for Widland Fire Cache and FlatIrons Event Center by spring 2014.
- Long-term goal to improve/upgrade emergency radio infrastructure to insure communication capability and interoperability.
- Continue to review and change as needed emergency operations planning, continuity of operations planning, and evacuation planning.
- Though no damage has been evident based on system performance, complete an assessment of fiber optic infrastructure in flood zones to identify potential undetected impacts.
- Complete a review of network redundancy and fiber network disaster mitigation practices based on the assessment results.
- Acquire additional point-to-point wireless communication technology to provide temporary voice and data connectivity to serve future field operations and disaster assistance centers.
- Completely restore and open trails, trailheads and access points. To date 91 percent of all formal trailheads are open to the public, and 133 miles or 90 percent are currently open.
- Restore water delivery infrastructure (head gates and ditches) in time for the 2014 irrigation season.
- Repair and replace fencing needed for safe grazing of livestock on Open Space and Mountain Park (OSMP) properties in time for scheduled use of pastures.
- Identify and implement restoration of riparian, aquatic and other habitats damaged by floods.
- Restore Chapman Drive, an emergency access route made impassable by the flood.
- Restore or re-route the Royal Arch Trail. The trail was the most severely damaged in the OSMP system and solutions remain elusive. Staff, members of the climbing community and an experienced trail construction expert has reviewed the damage. OSMP continues to explore alternatives.
- Restore or re-route the Saddle Rock Trail. An almost vertical wall of debris in excess of ten feet high presents an unusual problem.
- Restore the Gregory Canyon Road. The Gregory Canyon asphalt road was almost completely destroyed. The most likely option is to remove all or most of the asphalt and replace it with road base similar to other OSMP parking areas.

- Restore the remaining areas that are still closed to the public, including: Knollwood Tennis Court and Elks Park which had recently begun construction before the flooding, and the pedestrian bridge at Bear Creek Park which was damaged and still un-usable.
- Begin repair to high profile park and recreation facilities including:
    - North Boulder Recreation Center (Gymnastics / Gymnasium)
    - Flatirons Golf Course (Events Center and course damage)
    - Boulder Reservoir
    - Eben G. Fine Park
    - North Boulder Park
    - Elks Park
    - Municipal Campus and Central Park
    - Boulder Creek Corridor
    - Bear Creek Park
- Continue recovery efforts that are underway within several parks and recreation facilities to allow access and program delivery as soon as possible. Most notably, reconstruct portions of the gymnastics studio and gymnasium at the North Boulder Recreation Center that were damaged by the flood.

3. **Assist business recovery. Work with the Boulder business community and key partners to connect affected businesses with resources, recover quickly from flood impacts, and support long-term economic vitality.**

    - Support community non-profits in providing services assisting residents impacted by the flood through coordination of community resources for human services and housing.
    - Support OSMP agricultural lessees to offset losses caused by the flood through a reduction in annual lease payments.
    - Support marketing and messaging for "buying local" and "open for business" to encourage shopping in, dining in, and visiting Boulder (to support local businesses and generate sales tax revenue).
    - Continue to work closely with local businesses that sustained flood damage, including assistance with Federal Emergency Management Agency (FEMA) and Small Business Association (SBA) applications/processes.

4. **Pursue and focus resources to support recovery efforts**. **Work in partnership with volunteers, governmental and other agencies to maximize financial resources and efficiencies for recovery.**

    - Serve on county-wide coordinating committee and sub-committees of the community Long Term Recovery Group (LTRG) to develop and implement long-term recovery structure for human service, housing and community services.
    - Determine what additional city resources are needed to support resident recovery after assessment of all community resources available and unmet needs.

- Work with community partners to provide service and resources to restore impacted households and avoid permanent loss of economic and social stability.
- Identify funding for water delivery infrastructure repairs which may not be covered by FEMA, and apply for grants, and encouraged ditch companies that saw significant or severe damage from the flood to seek grants and no/low interest loans.
- Leverage community interest and support for flood recovery by recruiting volunteers for flood recovery projects. OSMP has engaged with the community on 35 restoration projects involving more than 700 volunteers and 3.600 person hours. Additional volunteer projects are scheduled for the remainder of 2013 and will continue into 2014.
- Use the city's experience in managing the Capital Bond project assessment and implementation process to build internal support teams to oversee flood-related projects and issues, in conjunction with the Capital Improvement Program (CIP).
- Continue utilizing volunteers to help clean up parks, OSMP trails and multiuse paths beginning again in the spring 2014.
- Identify parks and recreation grants to help offset costs.

5. **Learn together and plan for the future**. **Engage the Boulder community in assessing neighborhood impacts, refining and rethinking community design options, prioritizing actions and opportunities that mitigate hazards before rebuilding and support long-term community resilience and sustainability. In doing so, we build a city both greater and more beautiful than we were before.**

    - *Specific goals will be developed following council's discussion of long-term resiliency and sustainability at the Dec. 10 council meeting.*

SUMMARY OF FLOOD IMPACTS TO THE COMMUNITY

Private Property and Individuals – Flood Impacts

The flood resulted in widespread impacts to private property and to individuals throughout the city. The majority of impacts were located outside of regulatory floodplains due primarily to groundwater and sewage backups. Many families, individuals, employers and employees were displaced from their homes or businesses; some were short-term displacements, and others are still displaced. For some of the more vulnerable individuals in the community, they have lost their place to live, personal property and/or job security.

Individual Assistance

Within the City of Boulder, there are 7,060 addresses tied to requests for individual assistance from FEMA as of November 14, 2013. This number does not translate to individuals, just unique locations. The data includes requests from residential owners, renters, business owners, tenants, and homeless individuals. 98% of applicants are in residential areas of the city, 1.5% are in non-residential areas of the city, and 0.5% of applicants reported their damaged location as not in a residential or non-residential unit (ie: Under Bridge at Broadway and Canyon), and are therefore assumed to have been homeless.

The latest preliminary data analyzed by the FEMA Modeling Task Force (MOTF) is from Oct. 31, 2013. That data indicates approximately 14% of Boulder's households experienced loss in this disaster. This loss ratio is the third highest in the state, following Jamestown (~34%) and Lyons (~29%), and is closely followed by unincorporated Boulder County (~13%). Of all the households damaged statewide in this disaster, just over one-third are within the city of Boulder.

Approximately 5,800 households and 7,562 individuals in Boulder as of the end of October have applied for FEMA individual assistance, totaling $11.3 million dollars in verified loss. The majority of those households (4,100) experienced some damage to the structure and contents, but the home is still habitable. However, approximately 1,400 households experienced damage and the home was uninhabitable at the time of the FEMA inspection, but may be made habitable in a short period of time with repairs. 280 households experienced major damage that included substantial failure to structural elements or damage that will take more than 30 days to repair. As of Oct. 31, no homes were considered destroyed (total loss of structure, not economically feasible to repair) by FEMA within the city.

Business Assistance

City staff partnered with local, state, and federal agencies to provide flood recovery services to Boulder businesses including outreach and education, business assistance, and financial assistance. Impacts to Boulder businesses ranged from severe (e.g. complete demolition of a building with multiple business tenants at 100 Arapahoe and extensive damage to A Spice of Life catering/Flatiron Events Center) to moderate damage to businesses that were repaired in a few weeks. Many community groups held weekly or monthly meetings at the city-owned Flatirons Events Center building and these groups needed to find alternative space.

In many cases, businesses that did not own their buildings experienced prompt assistance with flood remediation and reconstruction by their landlords. Businesses filed with FEMA and applied for SBA physical damage loans (filing deadline extended to Dec. 2, 2013) and SBA economic injury loans (filing deadline extended to June 16, 2014). Throughout the initial recovery period, city staff worked closely with the businesses that sustained damage and, with local business partners, contacted over 100 businesses to assess damage and offer assistance and resources to the businesses and their employees. Over 50 people attended the Sept. 24 business flood information workshops at the Boulder Chamber (with presentations by City Manager Jane Brautigam and Building Services Manager Dave Thacker).

Longer term economic impacts to businesses and the community will be assessed. Varied perceptions of whether Boulder was "open for business" impacted local business. Many retail, service, and restaurant businesses experienced a reduction in foot traffic and sales which may affect city tax revenue. Downtown Boulder Inc. continues to receive calls with the question "can I get to Boulder because of the floods?" As of late November, the Small Business Development Center (SBDC) received regular new inquiries from Boulder businesses about financial assistance and flood relief. Also, the city is partnering with Downtown Boulder Inc. and Twenty Ninth Street to run "Buy into Boulder" ads in late November and December to remind holiday shoppers that for every $100 spent in Boulder, $3.41 goes to community services and programs.

Human Services and Housing Long Term Recovery

A county-wide community Long Term Flood Recovery Group (LTFRG) was formed through extensive community public and private sector volunteers to develop and implement a long term recovery plan for the human services and housing sectors. This group is building upon the existing public-private partnerships and relationships that already exist, and assists in insuring communities have a mechanism for coordinating and receiving all available funding and services, especially from FEMA and deploying national service organization volunteers to help people. LTFRG Subcommittees have been formed (including needs assessment and case management, housing, community wellness, volunteer care, and unmet needs) to address specific needs and recovery coordination issues among multiple local and national service agencies. LTRG work anticipated through 2015 to identify, assess and address long-term social impacts of the flood.

Additionally, staff is working to allocate funding through Yamagata Sister donation ($11,000) to community child care providers impacted by the flood to be able to continue to provide services and replace children's items destroyed in flood; allowing working families impacted by the flood to continue access to child care. Staff continues to serve on the Foothills United Way Flood Relief Fund committee, allocating financial assistance to communities and non-profits impacted by and serving residents impacted by the flood (Over $1 M allocated and $2.7 M raised).

Neighborhood Meetings & online communication

Following the initial flooding, the city hosted flood recovery meetings to share and collect information about flood impact assessments; neighborhood opportunities and challenges; and flood recovery information and resources offered by the city. Approximately 750 people signed in at eight flood recovery open houses (including the open space flood event and an invitation to utilities to meet with Kings Ridge/Wonderland Creek). **BoulderFloodInfo.net** identifies the locations and includes the meeting summaries. Key messages from the open houses included:

- A lot of feedback on flood assessment maps to confirm or refine the work done by staff and consultants to document where flooding occurred. Mapped comments will soon be available and posted to the website.
- Support from community members to do flood mitigation infrastructure improvements and accelerate timing of when those improvements occur.
- Questions about how neighborhoods and property owners can work together (with the city in some cases) to clean up and make improvements to prevent future flooding.
- Questions about how to protect personal property from future flooding.
- Questions about when open space trails would be open and how volunteers can participate in accelerating repairs and openings.
- Desire to see future follow-up meetings with information about proactive planning.
- People are now starting to ask more questions about sources for personal assistance and funding, now that FEMA and other programs have not met the full gap.
- A number of people had general questions related to Energy Smart and building improvements, but they did not leave written comments.

Additionally, city social media played a key role in disseminating emergency, recovery and response information to people (local, regional and national) seeking flood-event content online. For context (in the 2nd Qtr of 2013) the city Facebook account eclipsed 1 million-user impressions for the first time. The below stats are applicable for the month-long period of Sept. 11 to Oct. 12, 2013:

- The city Facebook page had over 19 million impressions (any content seen associated with city Facebook page).
- The city Twitter account gained 1,704 followers.
- There were almost 9,000 plays of flood-related videos on the city's Vimeo page and users watched almost 9,000 minutes of content on You Tube.

Through Nov. 7, BoulderFloodInfo.net has had almost 77,000 page views (all visitors, including returning IP addresses) and almost 59,000 unique page views (unique IP addresses to visit the site).

City staff and various agencies are still working to assess and provide assistance to those that are displaced, not in a position to repair their homes, or have other human services or housing needs.

City Infrastructure – Flood Impacts

The September 2013 flooding caused extensive damage to city infrastructure, including all utility systems (water, wastewater, stormwater, and major drainageways), roads, multiuse paths, trails, and facilities. Critical services have been restored. Full recovery will likely take years; some work is temporary in nature with more permanent work to follow.

Public Works

The city's domestic water system was significantly impacted by the flood, but remained operational throughout the event. Key impacts included loss of use of the canal from Carter Lake to Boulder Reservoir, loss of ability to treat water from Boulder Reservoir due to high turbidity, loss of power to both the Betasso and Boulder Reservoir Water Treatment Facilities, loss of vehicular access to Betasso Water Treatment Facility, damage to transmission facilities in Boulder Canyon, loss of access to treated water storage facilities, and other related issues.

The city's wastewater treatment facility and wastewater collection system experienced severe operational issues and damage during and after the flood event. The wastewater treatment facility is protected by a flood berm and remained operational throughout the event. The facility suffered damage to a number of key components including the headworks and an anaerobic digester cover. Several sections of the wastewater collection system were exposed or destroyed by floodwaters. The 17.24 inches of rain that fell in the Boulder area over an eight day period resulted in infiltration and inflow from numerous sources as well as the entry of significant sediment and debris into the collection system. Many property owners experienced sewage backups into their buildings.

Flooding occurred on Boulder Creek, its 14 tributaries, and as a result of rainfall in localized areas not directly impacted by creeks. Significant sediment and debris removal will be required to restore capacity of both local and major drainage systems. Significant longer term efforts will be required to restore habitat and features such as drop structures and sediment traps. In general, properties in areas where the city has been able to complete flood mitigation projects were significantly less impacted than other areas.

The city's transportation system damages occurred primarily at major drainage crossings throughout the city. A significant issue impacting transportation is sediment and debris covering the streets and the path system. A significant recovery expense was to remove the debris and sweep the fine dust which will both likely continue into next year.

Most of the busier streets that are collectors and arterials were not significantly damaged and were re-opened soon after the flooding subsided. There are two drainageway pipe crossings that washed out on minor residential roadways at Pennsylvania (6^{th}-7^{th}), and Cypress (west of 55^{th}). These repairs are pending. The drainageway pipe crossing of 47^{th} Street (Collector classification) at Fourmile Canyon Creek was washed out, but has since been repaired and restored to service.

While in stable, safe condition for winter months, there also are more permanent and final repairs that are pending for certain segments of streets and pathways that will occur in spring 2014. Fortunately, all bridges, or major structures, remained intact throughout the event and only sustained minor damage.

Overall, 49 city facilities were impacted by the flood and heavy rains. The most severe impacts were from floodwaters impacting five facilities – Flatirons Event Center, West Senior Center, Reynolds Library and the Wildland Cache – all of which were closed for a significant amount of time. Although not as severe, costly repairs are required at the South Boulder Recreation Center and the North Boulder Recreation Center due to damaged wood floors in the gymnasiums.

Parks & Recreation

Initially, staff reported 13 full park closures and 10 partial park closures, as well as full closure of the Flatirons Golf Course and Boulder Reservoir. On September 25, 2013, the 15^{th} day since major flooding, staff reported 5 full park closures and only a handful of partial closures. Park closures currently include: Knollwood Tennis Court and Elks Park which had recently begun construction before the flooding. The pedestrian bridge at Bear Creek Park is also damaged and still un-usable.

Currently, staff has assessed all parks and facilities within the city and has identified damage at seven recreation facilities and 47 parks. The damage ranges in severity and is categorized based on a high, medium or low impact dependent upon the threat to health/safety and program viability. Most sites have debris piles and sedimentation as well as some areas of structural damage to sidewalks, park amenities and infrastructure. Notable parks and recreation facilities that are high priorities for recovery include:

- North Boulder Recreation Center (Gymnastics / Gymnasium)
- Flatirons Golf Course (Events Center and course damage)
- Boulder Reservoir
- Eben G. Fine Park
- North Boulder Park
- Elks Park
- Municipal Campus and Central Park
- Boulder Creek Corridor
- Bear Creek Park

Currently, recovery efforts are underway within several parks and recreation facilities to allow access and program delivery as soon as possible. Most notably, the North Boulder Recreation Center is reconstructing portions of the gymnastics studio and gymnasium that were damaged.

Open Space and Mountain Parks

Most of the trails in the mountain backdrop suffered extensive and severe damage from the flood. Impacts were caused by debris deposited on trails from landslides and creeks as well as erosion by floodwaters. Several trails will require contracted services to address engineering and equipment needs beyond the department's in house capacity. In some instances, it will be necessary to re-route trails so the trail can be both physically and ecologically sustainable. Severe impacts to bridges along Open Space and Mountain Parks (OSMP) trails from the flood were commonplace.

Trails on the plains suffered widespread loss of surface material, and many of those in the vicinity of drainages were obliterated. Those trails constructed more recently and to professional trail standards, or on flatter terrain away from drainages suffered the least damage.

Generally OSMP trailheads and access points fared well. There was severe damage to the Chapman Drive, East Boulder, Gregory Canyon and South Mesa Trailheads, and to access points at South Boulder Creek-South Boulder Road, Contact Corner, Crown Rock (Flagstaff Mt), McClintock Trail (Bellevue Ave) and Buckingham Park (Lefthand Canyon).

The majority of the water delivery infrastructure on OSMP is used to support agricultural operations. During the flood, significant damage was incurred by much of OSMP's irrigation infrastructure. Impacts included the destruction of diversion structures, sedimentation of ditch channels, and erosion of ditch berms and banks.

Water delivery infrastructure is typically owned and maintained by private ditch companies with the proportion of City ownership varying from ditch to ditch. OSMP staff is working with other city departments who manage water rights and private ditch companies to determine how best to

recoup costs incurred by the city for the repair of ditches in a manner consistent with FEMA requirements.

Two reservoirs on OSMP were damaged by the flood. During the flood, state dam safety inspectors from the Division of Water Resources determined that the Flatirons Vista reservoir needed to be partially drained and the spillway reconstructed. This work has already been completed. A portion of the spillway at KOA Lake (Valmont Road and 57th Street) failed and will need to be repaired.

Unlike other facilities or city property, ecological systems are well-adapted to respond to natural events such as floods. However, OSMP has made significant investments in the restoration and management of ecosystems, including, creeks and riparian areas that have been affected by the flood.

Staff's assessment has revealed widespread and extensive changes to ecological resources, including high quality habitat for a diversity of plant and animal species. Much of this impact was concentrated in low-lying areas where volume, velocity and depth of floodwater were highest. Many of OSMP's creeks and riparian associated wetlands were scoured or filled with debris. While not all of these impacts were detrimental to the ecological functioning of the system, there are numerous examples of where the ecological functioning of the system has been compromised. Habitat for the federally threatened Preble's meadow jumping mouse and Ute ladies-tresses orchid was impacted and in some areas no long suitable for these species. Populations of black-tailed prairie dogs, a species of local concern were drowned or displaced. Aquatic habitat in South Boulder Creek, Boulder Creek and other OSMP streams has been degraded where abandon gravel pits adjacent to steams have captured the flow and original stream channels have been abandon and dewatered. Riparian wetlands have been filled with debris and sediment which has reduced their ability to store floodwaters, filter pollutants and support wetland dependent species.

Staff anticipates the development of extensive weed infestations in areas where landslides and waterborne sediments have buried existing vegetation and where erosion has exposed bare surfaces along drainages and in landslide scars.

All agricultural operations on Open Space and Mountain Parks lands are managed by lease holders (lessees) who are provided access to OSMP lands, and use of city-owned water in exchange for a commitment to manage the land in a particular manner and payments of an annual lease fee. The city typically supports agricultural operations by managing and funding major repairs and reconstruction to fences, buildings, water delivery infrastructure and other facilities. The lessees own and manage livestock, and perform day to day repairs to ensure ongoing functioning of their operations. The partnership has been evolving on city open space since the late 1960's and is generally considered to be a successful model.

Staff contacted OSMP lessees after the floods to gauge the level of impact to their operations and found that while there were no direct losses of livestock on OSMP lands, 16,500 tons (or 3,300,000 pounds) of hay was destroyed. Hay is used by lessees to support cattle operations or for offered for sale, largely to horse owners. The estimated value of the lost hay crop is approximately $230,000. OSMP has recently made modifications in its agricultural program to

encourage local organic farmers. The flood came at an especially unfortunate time for organic farmers as much of their produce was ready for harvest. Much of the above ground production (e.g., peppers, tomatoes, late season greens) not washed away by the floodwaters could not be sold because of concerns over possible contamination by direct contact with floodwaters.

Three city-owned residences, two office buildings and one storage facility experienced minor flood damage due to water infiltration of lower levels or leaking roofs. All electrical and HVAC systems have been inspected for damage. None was found. Total impacts to buildings are estimated at less than $1,000.

The majority of fence damage was along the major water drainages and along Dry Creek, where water from South Boulder Creek was diverted during the storm. In parts of the system, wet, loose soil from extensive rainfall caused the fences to fall over. . Fence impacts include areas where debris accumulation threatens the collapse of fences, and where floodwaters washed fences away. Approximately six miles (33,000 feet) of fence was significantly damaged, and nearly nine miles (46,000 feet) of fence was completely destroyed. Fence replacement and repair costs between two and four dollars per foot. Staff estimates the cost for fence repair at approximately $250,000.

Impacts to roads associated with visitor access are addressed in the Visitor Infrastructure section. While there was significant debris accumulation on farm and emergency access roads maintained by OSMP, there were relatively few significant effects of the flood.

In addition to bridges on OSMP trails and roads that provide visitor access, there are also bridges used primarily for OSMP land managers, agricultural lessees and on city owned properties closed to public access as a condition of the purchase agreement (e.g., life estates). OSMP has identified ten bridges with significant or severe impacts from the flood. No estimates have been developed regarding the cost to repair these facilities.

ANNEXATION – BACKGROUND AND OPTIONS FOR COUNCIL CONSIDERATION

After the September flood, the city was contacted by several property owners in Area II and a few property owners in Area III of the Boulder Valley Comprehensive Plan (BVCP) with concerns about their wells and on-site wastewater systems (OWS), and interest in connecting to the city's water and/or wastewater systems. Staff has been evaluating how the city could help address immediate and long-term public and environmental health concerns related to individual well, and OWS by facilitating annexation and connection to city utilities. The current focus is on residential properties in Area II with wells or OWS.

Area II of the BVCP is the area now under county jurisdiction, where annexation to the city can be considered. The city's policy concerning the provision of urban services to Area II properties is that annexation will be required before adequate facilities and services are furnished. There are approximately 5,713 residential and non-residential properties in Area II. A map showing the Area II properties is enclosed.

Enclaves
116 of the Area II properties are enclaves (96 residential, 20 non-residential) in that they are completely surrounded by the city. Of the 116 enclave properties:

- 17 have both city water and sewer;
- 36 have city sewer, but not city water;
- 3 have city water, but no city sewer; and
- 49 have no city water or sewer.

Approximately 35 enclave properties do not have access to water and sewer infrastructure, which would need to be installed in the roads before property owners could connect to utilities. These 35 parcels are almost all located in Githens Acres.

Non-enclave Area II properties
There are approximately 5,597 non-enclave Area II properties located primarily east of the city. 5,406 of these non-enclave Area II properties are currently on city water and sewer service under out-of-city utility agreements issued several decades ago in the anticipation that these properties would annex when eligible (e.g. Gunbarrel, Hoover Hills, the Reserve, Palo Park, Orange Orchard). The remaining 202 parcels in Area II have varied services and are scattered in neighborhoods along the west and east sides of the city. These neighborhoods include Cherryvale Road, Old Tale Road and Gould Subdivision at Jay Road and Highway 36. Of these parcels:

- 49 have water and sewer;
- 40 have sewer only;
- 16 have water only; and
- 96 have no city utilities.

There are approximately 80 non-residential properties in Area II. 20 of these properties are enclaves and the remaining are located in the East Arapahoe industrial area and north Boulder.

Objective/Scope
Staff's current objective is to help address immediate and long-term public and environmental health concerns related to individual well and OWS on developed residential properties in Area II by facilitating annexation and connection to city utilities. Staff is currently focusing on helping property owners in Area II with wells or OWS that have been impacted by the flood.

A number of key issues affect the ability of the city to expeditiously annex Area II properties:

1. **The status and condition of Area II wells and OWS is unclear and variable.** The nature and extent of the flood impacts to well and OWS is not fully known. While some homeowners have tested their wells and found contamination, their neighbors may not have experienced the same problems. In some cases, problems may have existed prior to the flood, but were only indentified after the flood lead residents to pursue testing. Interest and motivation to connect into city services varies.

2. **Access to utility infrastructure varies.** Most enclave properties and properties along the western edge of Area II have access to existing water and sewer mains in the street, somewhat simplifying the cost and process of annexation. However, some areas do not, increasing costs. Githens Acres is the only enclave area with incomplete utility infrastructure. In areas east of the city however, the status of city infrastructure varies. Old Tale Road properties currently have access to sewer but not water mains. Parts of Cherryvale Road have complete access to mains but other portions of the road lack adequate services. Gould Subdivision lacks water, sewer and adequate road infrastructure.

3. **Annexation and utility construction is costly.** The cost of annexation can be difficult for some property owners to afford and prohibitive for others. While annexation costs have always been challenging, both city and property owner ability to fund these costs has been significantly impacted by the flood. Many of the property owners with well and/ or septic system issues have flood damage to their homes and property**.** Costs can include water, wastewater and stormwater plant investment fees, tap and inspection fees, annexation administrative fees and fees for joining the Northern Colorado Water Conservancy District. For property owners without utility infrastructure in their roads, costs also include engineering design, utility construction and road resurfacing. Depending on the individual property situation (e.g. access to utilities, size of house or lot), the overall costs can range anywhere from $10,000 to $120,000 to annex and connect to utilities. The average cost to annex for an individual homeowner along Gapter Road in 2010 was approximately $55,000. Since that annexation, however, plant investment fee rates have increased considerably.

   In the past, the city has helped neighborhoods by covering certain annexation costs (e.g. administrative fees, excise taxes, project management) with city funding. The bulk of the overall annexation cost is in the utility main construction and connection to existing infrastructure systems (plant investment fees) which is problematic to have existing utility customers bear. The city has also in the past offered financing packages for certain neighborhood annexations (e.g. Gapter Road, Crestview East), however, the ability for

the city to do this is dependent upon current budget conditions. A key policy issue is how the city prioritizes funding for annexation efforts relative to other current (and future) projects. In addition, the city will be taking on maintenance costs for the roadways that will be annexed.

4. **Annexation efforts are resource intensive.** In the recent past, group or neighborhood annexations have been long, resource intensive and often controversial. Much effort is typically spent in developing incentives for people to annex and negotiating over fees and other city requirements such as easement dedications. While the city can unilaterally annex enclaves, the city is limited in its ability to impose conditions through the unilateral annexation process such as requiring the dedication of stormwater easements. It is clear from past experience and current conversations with property owners that most people are unlikely to annex unless:
    - They see that the benefits of annexation outweigh those of remaining in the county (financial, regulatory, services); and
    - There are financial incentives offered to make annexation more feasible.

    Funding for staff resources to pursue annexation of these properties will need to be identified.

    Staff's experience over the years with annexations is that there is never 100 percent incentive to annex among property owners in any one neighborhood. Disincentives among property owners include costs of annexation and condition and age of well and OWS. High collective participation rates, however, are most important where neighbors need to share the cost of new utility infrastructure construction.

City staff is currently in preliminary discussions with some of the Old Tale Road property owners about annexation. Several homeowners contacted staff about their problems with well contamination after the flood and requested information about annexation. Most of the Old Tale Road properties are connected up to city sewer but not water. The water main would have to be constructed along the entire length of the street.

Staff sent an annexation package (see enclosed letter) and preliminary cost estimates to homeowners and held an informational meeting at the East Boulder Senior Center on November 19, 2013. Eight homeowners attended the meeting and raised several concerns. Overall, homeowners indicated that there is some interest in annexing to the city but, at the current time, full participation of homeowners is not likely. The primary concerns raised by homeowners involved the cost of annexation and lack of financing options. Participants raised several questions for follow-up and staff offered to compile more information for the neighborhood and hold a second meeting in January 2014. Homeowners were primarily interested in a discussion of the benefits of annexation versus remaining in the county.

Annexation - Options for Addressing Financial Disincentives

In neighborhoods where utility mains need to be constructed (Old Tale Road, Cherryvale Road, Githens Acres), participation from most or all of the property owners is needed to recover the

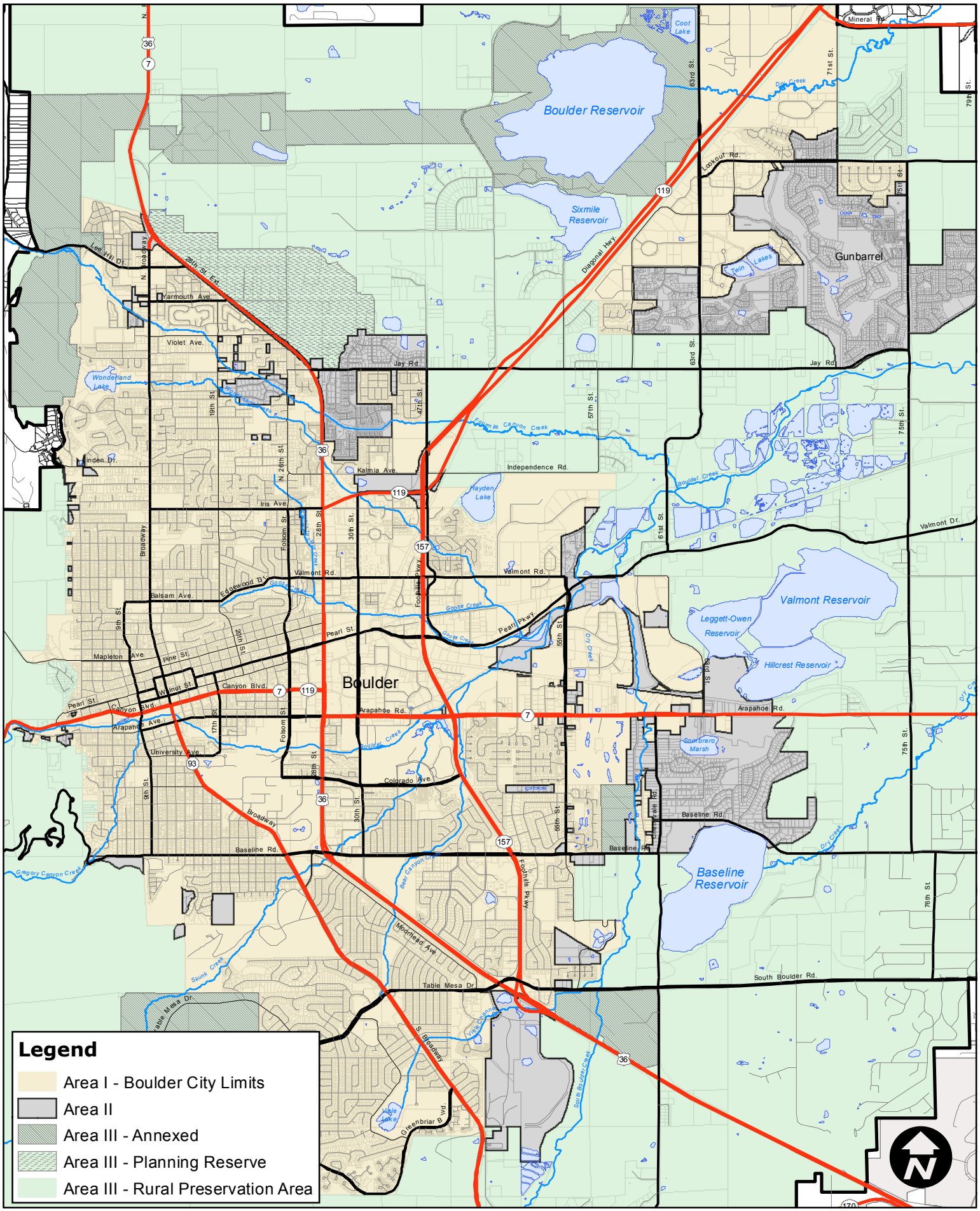
upfront construction costs unless another financial source and financing is made available. The following are a few options:

1. **City upfronts construction costs with assurance of a minimum participation rate (Old Tale Road model).** Under this option, the city would upfront the costs of constructing the water and/or sewer mains in the street and resurfacing the road with the guarantee that enough residents along the road would annex, connect to utilities and pay-in-full once the utilities are installed. A preliminary package was presented to the Old Tale Road neighborhood that would require 75 percent participation in order to minimize the city's risk in carrying the costs of the capital outlay for non-participants. The city would cover annexation costs, and city services that utilize excise tax funding would lose this revenue. The letter sent to Old Tale property owners is enclosed.

2. **City upfronts and offers financing of construction costs with assurance of a minimum participation rate (Gapter Road model).** The Gapter Road and Crestview East annexations are cases where the city upfronted the cost of the infrastructure construction and offered a 10-year financing package for individual shares of costs. In order to minimize the carrying costs to the city (in the case of Gapter Road), a minimum participation rate of 75 percent was set. The neighborhood was unable to meet that minimum threshold so Boulder County stepped in to help with the financing of the construction costs. At the time of the Gapter Road annexation, the city was in the financial position to carry some of the costs. No threshold was set for the number of participants that must pay-in-full. However, the city and the county are not in the same financial situation as five years ago.

3. **Local Improvement Districts.** Staff is exploring whether a Local Improvement District could help with financing costs for homeowners. While a local improvement district would be able to bond and enable costs to be financed over a number of years, it likely can only bond to pay back infrastructure costs, not fees. Additionally, the city or county would likely need to take on the costs for those who do not annex, again creating a financial challenge for the city and/or county.

Area II - Areas Eligible for Annexation



City of Boulder
Department of Community Planning and Sustainability

1739 Broadway, Third Floor
P.O. Box 791
Boulder, Colorado 80306
Phone: 303.441.1880 Fax: 303.441.3241

November 13, 2013

Dear Old Tale Road Homeowner,

Several homeowners along Old Tale Road have contacted city staff about the possibility of annexing to the city. Annexation of the neighborhood would make it possible to construct water mains in your road and give homeowners the opportunity to connect to city water and/or wastewater services.

The purpose of this letter is to let you know about a neighborhood meeting City of Boulder staff will hold on November 19, 2013 from 4:30 to 6:00 p.m. in the Flagstaff Room of the East Boulder Senior Center, to provide information about potential annexation of your neighborhood.

Attached to this letter are a description of the basic annexation package and process, a **preliminary** cost estimate of annexation by property, and responses to frequently asked questions.

The City understands that the flood has had significant financial and other impacts to many residents throughout the county. The city is supportive of extending water and other utilities to eligible properties outside the city concurrent with annexation to address the public and environmental health issues.

We understand that annexation has cost impacts to property owners and the city is proposing to provide support and assistance to the neighborhood by dedicating staff to facilitate the process and by waiving some costs of annexation including the annexation fee and all excise taxes. The remaining costs outlined in the attached chart are consistent with the costs of utility service extension for any new construction or annexation. **Please keep in mind that the costs outlined in the chart, particularly the costs of the utility mains, are preliminary and will likely change.** If the neighborhood decides to move forward with an annexation petition, the City will work with a contractor to develop engineering plans and solicit construction bids.

For the annexation and utility main construction to be feasible, the City would request that at least 75 percent of the 28 homeowners along Old Tale Road participate in the annexation, hook up to utilities and pay-in-full upon completion of utility main installation. It is important to note that the same costs and incentives likely will not be available to homeowners who choose to annex individually in the future.

Thank you for your attention to this issue. We look forward to meeting with you and your neighbors about this important issue and responding to any questions or concerns you may have.

Sincerely,

Bev Johnson
City of Boulder, Department of Community Planning and Sustainability
Annexation Project Manager
johnsonb@bouldercolorado.gov

Old Tale Road Annexation Package

I. Basic Annexation Package

A. Annexation and initial zoning designation of Rural Residential - Established (RR-E).
B. Property owners will reimburse the city for their individual share of the cost of public improvements at the time of application for connection to the water and sewer mains.
C. In order to provide an incentive for property owners to annex, the city will waive the annexation application fee of $21,580 (for the group) that is generally collected at the time of annexation or connection to the city's utility system for those applicants which annex.
D. The City will install the necessary infrastructure in the roads and resurface the road according to rural residential street standards excluding sidewalks, storm drains and street lights.
E. Each landowner's proportionate share of the public improvement costs will be the actual costs incurred by the city for constructing the improvements divided by 28, which is the number of lots along Old Tale Road that will be served by the improvements. (Adjustments will be made to the final costs for individual homeowners based on current connection status).
E. Property owners along South Boulder Creek will dedicate flood easements (60 feet from either side of creek centerline) to the city for the purpose of conveying flood waters and storm runoff, preserving an open creek corridor, and maintaining conveyance capacity. The city would have the right, but not the obligation, to perform maintenance.
F. Once homeowners are connected to the city's water system, the city will allow continued use of existing wells for irrigation purposes, however, cross-connections are prohibited.
G. All properties will be subject to the Boulder Revised Code except for those items outlined in this document.

II. Annexation Package Participation Requirements

In order for the City to be able to assist the neighborhood in the construction of the public improvements, at least 75 percent of the 28 property owners (or 26 property owners) along Old Tale Road must agree to annex and hook up to utilities upon completion of utility installation. Costs of water and sewer service lines will be paid in full at time of application to connect.

III. Steps Prior to First Reading of the Annexation Ordinance

A. At least 75 percent of homeowners along Old Tale Road submit annexation petition, survey, and annexation maps.
B. Property owners with ditch rights enter into a right of first refusal agreement to allow the city to purchase any interests in water or water rights associated with or appurtenant to the property.

C. All property owners file an application and pay the applicable fees for inclusion of the property in the Boulder Municipal Subdistrict and the Northern Colorado Water Conservancy District. (City staff will help facilitate this.)
D. All property owners provide the City with title work current to within 30 days of signing this agreement.
E. Property owners along South Boulder Creek sign a flood maintenance easement agreement.

IV. Annexation / Initial Zoning Application Requirements (CITY STAFF WILL ASSIST THE NEIGHBORHOOD IN THE COMPLETION OF THESE DOCUMENTS)

A. A complete **Land Use Review Application Form**, including signatures by or the written consent of the owners of all property to be included in the development.
B. A completed **Sign Posting Requirements Acknowledgment form** (attached).
C. Three (3) copies of an **improvement survey** or improvement location certificate by a registered surveyor, of the subject property.
D. One (1) copy of a **legal description** of the subject property, printed clearly on an 8 ½" x 11" sheet.
E. Fifteen (15) copies of a **vicinity map** (8 ½" x 11") indicating the site and adjacent streets. If the site is less than one acre, the map must be drawn at a minimum scale of 1":200'.
F. Fifteen (15) copies of a **written statement** which describes the proposal and addresses how the annexation meets the Boulder Valley Comprehensive Plan policies related to annexation (see attached list of policies).
G. Fifteen (15) prints of an **annexation map** prepared by a registered surveyor.
H. **Annexation petition** (1 original and 1 copy) signed by the property owners (form is attached).
I. Fifteen (15) prints (18”x24” or 24"x36") folded to 9"x12", of a **utility plan or utility connection plan**, depending on whether public improvements are required (see Design and Construction Standards).
J. Fifteen (15) copies of a completed **Land Use Review Project Fact Sheet** (attached).
K. Two (2) copies of a **current title insurance commitment** or attorney memorandum based on an abstract of title.
L. Any other information that the applicant wishes to submit.

V. Steps Following Annexation

Within 30 days of completion of utility main construction, the property owner will do the following:

A. Submit water and sewer service applications.
B. Pay all applicable city fees and charges associated with water and sewer service line connection (including plant investment fees).
C. Pay property owner’s proportionate share of the public improvement costs.

Within 90 days after the city has issued the property owner's permit to connect, the property owner will complete construction of service lines and obtain the city's approval of the connection to the city water and sewer mains. Once the house is connected to the city system, the existing OWS tank must be pumped and filled in.

VI. Frequently Asked Questions

A. Why is there a need to annex to the city as a neighborhood?

The City of Boulder and Boulder County agree that the best long-term solution to well and On-site Wastewater System (OWS) issues in Area II is the provision of city water and sewer services through annexation to the city. According to city policy, annexation is required before adequate facilities and services may be furnished. Although the properties along the west side of Old Tale Road are currently eligible for annexation, most of the properties along the east side are not eligible (not adjacent to the city) and unable to annex individually without west side participation. Moreover, most of the residents along Old Tale Road do not have access to a water main. A water main must be constructed along the entire road before residents have access to city water services. The City's Public Works Department-Utilities Division has offered to facilitate the construction of a water main, road resurfacing and bridge upgrades in early 2014 under the condition that at least 75 percent of the homeowners agree to annex, hook-up to utilities and pay the cost in full. The purpose of the minimum threshold for participation is to minimize the long term carrying cost of the improvements to the city.

B. Can the city require me to annex?

The city can not require a landowner to annex unless the property is completely surrounded by the city. None of the properties along Old Tale Road are currently surrounded by the city.

C. What will happen if the neighborhood does not annex at this time?

The city will be unable to assist the neighborhood in addressing any well, OWS or road issues along Old Tale Road. As the conditions of annexation may change in the future, it is uncertain if the city will be financially able to make a similar offer in terms of facilitating near term construction of the utility infrastructure and waiving certain fees and taxes. In addition, all fees, taxes and costs of utility construction will likely continue to rise in the future.

D. What will happen if I choose not to join the group and annex at this time?

If you choose not to annex and the rest of your neighborhood is able to meet the city's participation thresholds, you will remain in unincorporated Boulder County on your current well and/or OWS (the majority of properties along Old Tale Road are currently connected to city wastewater service). If you apply for annexation at a later date, you likely would be asked to pay for the full cost of annexation (including annexation fees

and taxes of an additional $10,000 and utility construction costs plus interest). Please keep in mind that annexation fees and taxes will likely increase in the future.

E. What are my building restrictions under the city's floodplain regulations? How would those affect me differently than those in the county?

Building restrictions under the city's floodplain regulations are somewhat different than under county regulations. City regulations are summarized as follows:

100-year Floodplain: A floodplain development permit is required for any development or construction in the 100-year floodplain or Zone AE. Where construction is permitted, it must conform to flood protection standards that require, at a minimum, the lowest floor of any residential building to be at least two feet above the base flood elevation. Significant additions and remodels (50 percent or greater), generally require that the entire structure be brought into conformance with applicable regulations. Non-residential buildings must be elevated to the same flood protection elevation or may be flood-proofed such that below the flood protection elevation, the structure is water tight with walls substantially impermeable to the passage of water. Any storage or processing of hazardous materials is prohibited below the flood protection elevation. The city of Boulder also prohibits the development of new automobile parking where flood depths exceed 18 inches.

Conveyance (Floodway) Zone: The conveyance zone is that portion of the floodplain required for passage (or conveyance) of the 100-year flood. In the conveyance zone or floodway, any development, encroachment, obstruction, or use that would result in any increase in the base flood elevation is prohibited. In addition to meeting requirements for the AE zone identified above, proposed new structures or additions in the conveyance zone must demonstrate that compensating flow area has been provided. Boulder County additionally prohibits the development of structures for human occupancy in the floodway.

High Hazard Zone: The high hazard zone is that portion of the 100-year floodplain where an unacceptably high hazard to human safety exists. In the high hazard zone, the construction, expansion, enlargement or significant remodel (50 percent of market value or greater) of any structure intended for human occupancy or establishment of a new parking lot is prohibited. In the high hazard zone, only interior remodels (no more than 50 percent of market value) are allowed provided that neither the building footprint nor the habitable area is enlarged. Additionally, any change in use of an existing structure intended for human occupancy from non-residential to residential is prohibited.

F. What are the county floodplain regulations?

100-year Floodplain: Areas within a mapped 100-year floodplain that are outside of a regulatory floodway are considered the flood fringe. In accordance with the Boulder County Land Use Code, it is possible to develop within the flood fringe as part of an application to the Boulder County Land Use Department and upon issuance of a building

permit and a floodplain development permit. Like the city's requirements, depending on the scope of work, buildings must be elevated or flood-proofed to the flood protection elevation, which is two feet above the 100-year water surface elevation.

Floodway: The County's regulatory floodway includes those portions of the 100-year floodplain (Zone AE) required for the passage or conveyance of flood waters in which waters will flow at significant depths or with significant velocities. It includes the channel of a river or creek and any adjacent floodplain areas that must be kept free of development and other encroachments so the 100-year flood can be conveyed without substantial increase in flood height. The Boulder County Land Use Code prohibits developments "in, on or over the floodway" which result in the occupation of permanent or temporary structures and the potential to contribute to solid debris being carried downstream. Improvements seeking to expand any structure in the floodway (including second story additions that do not increase a building's envelope) are prohibited. Interior renovations and improvements will remain permissible subject to the county's building permit procedures.

G. Why is the City of Boulder asking for a flood easement as part of the annexation? What impact does an easement have on the use and development of my property?

As part of the annexation agreement with the city, the landowners along South Boulder Creek would be required to dedicate a flood easement of 60 feet from either side of the creek centerline to the city for the purpose of conveying flood waters and storm runoff, preserving an open creek corridor, and maintaining conveyance capacity of the creek. An easement is an agreement between the city and the landowner on the use of that portion of the property. The flood easement included in this package is the standard easement agreement typically entered into with any landowner with portions of their properties in a conveyance or high hazard flood zone. The city's goal is to have maintenance access to all creek channels for the purpose of protecting the community from flood hazards.

Under a flood easement agreement, a landowner would still own that portion of his or her property; the easement, however, would prevent a landowner from placing any permanent structures or above-ground improvements in that easement. The easement would give the city the right, but not the obligation, to maintain the creek channel.

H. Why do the residents have to pay for the road and bridge upgrades? Why is the City of Boulder requiring an upgrade bridge on McSorley?

The resurfacing of the road and repair of the bridge over South Boulder Creek are integral to the construction of the utilities and the cost would be shared by the homeowners along Old Tale Road. Since the water main will be extended from Gapter Road and along McSorley, improvements to the bridge over South Boulder Creek will be necessary to repair damages from the construction and to bring it up to city standards.

The city would ask the residents along Old Tale Road to pay for the cost of resurfacing the road and repairing the bridge as part of the total cost of constructing the utility main. The city would require that the road to be resurfaced with six inches of full-depth asphalt covering the current road alignment and matching the existing drainage pattern.

The six inch asphalt base is not only a minimum city road standard, it will be the minimum necessary to provide a solid road base after the installation of the utilities. Simple resurfacing of the road with a "chip-seal" material would not provide enough solid surface after the utility installation to support long-term road use and likely would degrade in a short period of time.

Old Tale Road
Individual Property Annexation Costs

Address	Current	Water Tap Fee	Water PIF	Sewer Tap Fee	Wastewater PIF	Impervious Area	Stormwater PIF	Subtotal (Fees)	Utility Main	Connection to House	Annexation Map	Easement Survey	NCWCD	TOTAL (Preliminary)
1165 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00	$ -	$ -	5,066	$ 10,030.68	$ 27,173.91	$ 27,500.00	$ 4,000.00	$ 357.00		$ 929.55	$ 59,960.46
1193 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			8,854	$ 17,530.92	$ 34,674.15	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,120.67	$ 67,651.82
1221 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			6,539	$ 12,947.22	$ 30,090.45	$ 27,500.00	$ 4,000.00	$ 357.00		$ 750.24	$ 62,697.69
1228 Old Tale Rd.		$ 977.23	$ 16,166.00	$ 432.87	$ 4,301.00	10,458	$ 20,706.84	$ 42,583.94	$ 28,000.00	$ 4,000.00	$ 357.00	$ 300.00	$ 744.14	$ 75,985.08
1245 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			5,874	$ 11,630.52	$ 28,773.75	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,405.20	$ 62,035.95
1270 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			9,017	$ 17,853.66	$ 34,996.89	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 1,961.05	$ 69,114.94
1275 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			4,428	$ 8,767.44	$ 25,910.67	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,705.17	$ 59,472.84
1305 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			11,753	$ 23,270.94	$ 40,414.17	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,623.85	$ 73,895.02
1310 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			12,191	$ 24,138.18	$ 41,281.41	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 880.77	$ 74,319.18
1315 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			12,954	$ 25,648.92	$ 42,792.15	$ 27,500.00	$ 4,000.00	$ 357.00		$ 957.33	$ 75,606.48
1325 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			11,627	$ 23,021.46	$ 40,164.69	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,120.67	$ 73,142.36
1350 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			10,918	$ 21,617.64	$ 38,760.87	$ 27,500.00	$ 4,000.00	$ 357.00		$ 2,306.69	$ 72,924.56
1402 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			14,254	$ 28,222.92	$ 45,366.15	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 918.01	$ 78,441.16
1409 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			7,739	$ 15,323.22	$ 32,466.45	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,128.59	$ 65,452.04
1412 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			7,747	$ 15,339.06	$ 32,482.29	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 1,642.65	$ 66,281.94
1435 Old Tale Rd.		$ 977.23	$ 16,166.00	$ 432.87	$ 4,301.00	5,732	$ 15,339.06	$ 37,216.16	$ 28,000.00	$ 4,000.00	$ 357.00		$ 1,059.30	$ 70,632.46
1436 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			5,754	$ 11,392.92	$ 28,536.15	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 907.87	$ 61,601.02
1457 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			4,683	$ 9,272.34	$ 26,415.57	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,252.62	$ 59,525.19
1462 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			7,153	$ 14,162.94	$ 31,306.17	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 858.70	$ 64,321.87
1483 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			12,956	$ 25,652.88	$ 42,796.11	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,074.87	$ 75,727.98
1486 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			6,623	$ 13,113.54	$ 30,256.77	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 1,212.15	$ 63,625.92
1507 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			9,239	$ 18,293.22	$ 35,436.45	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,420.00	$ 68,713.45
1510 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			10,600	$ 20,988.00	$ 38,131.23	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,571.81	$ 71,560.04
1533 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			10,342	$ 20,477.16	$ 37,620.39	$ 27,500.00	$ 4,000.00	$ 357.00		$ 1,662.63	$ 71,140.02
1548 Old Tale Rd.		$ 977.23	$ 16,166.00	$ 432.87	$ 4,301.00	12,016	$ 23,791.68	$ 45,668.78	$ 28,000.00	$ 4,000.00	$ 357.00	$ 300.00	$ 741.81	$ 79,067.59
1555 Old Tale Rd.	Water/Sewer					9,733	$ 19,271.34	$ 19,271.34	$ 8,300.00		$ 357.00			$ 27,928.34
1566 Old Tale Rd.	Sewer	$ 977.23	$ 16,166.00			11,942	$ 23,645.16	$ 40,788.39	$ 27,500.00	$ 4,000.00	$ 357.00	$ 300.00	$ 1,247.70	$ 74,193.09
1585 Old Tale Rd.	Water/Sewer					3,977	$ 7,874.46	$ 7,874.46	$ 8,300.00		$ 357.00			$ 16,531.46

Attachment D
Background and Options

Chart Notes:

Water Tap Fee: Fees associated with individual connection to the city water system. Fees include permit fee, inspection fee, water meter fee and tap fee.

Water, Wastewater, Stormwater PIF: Plant Investment Fees (PIFs) are for water, wastewater, and stormwater utilities and are charged to utilize existing infrastructure systems. PIFs are paid prior to final inspection for new construction, or at the time of permit issuance for all other types of construction or connection. The fee rate in effect at the time of application applies.

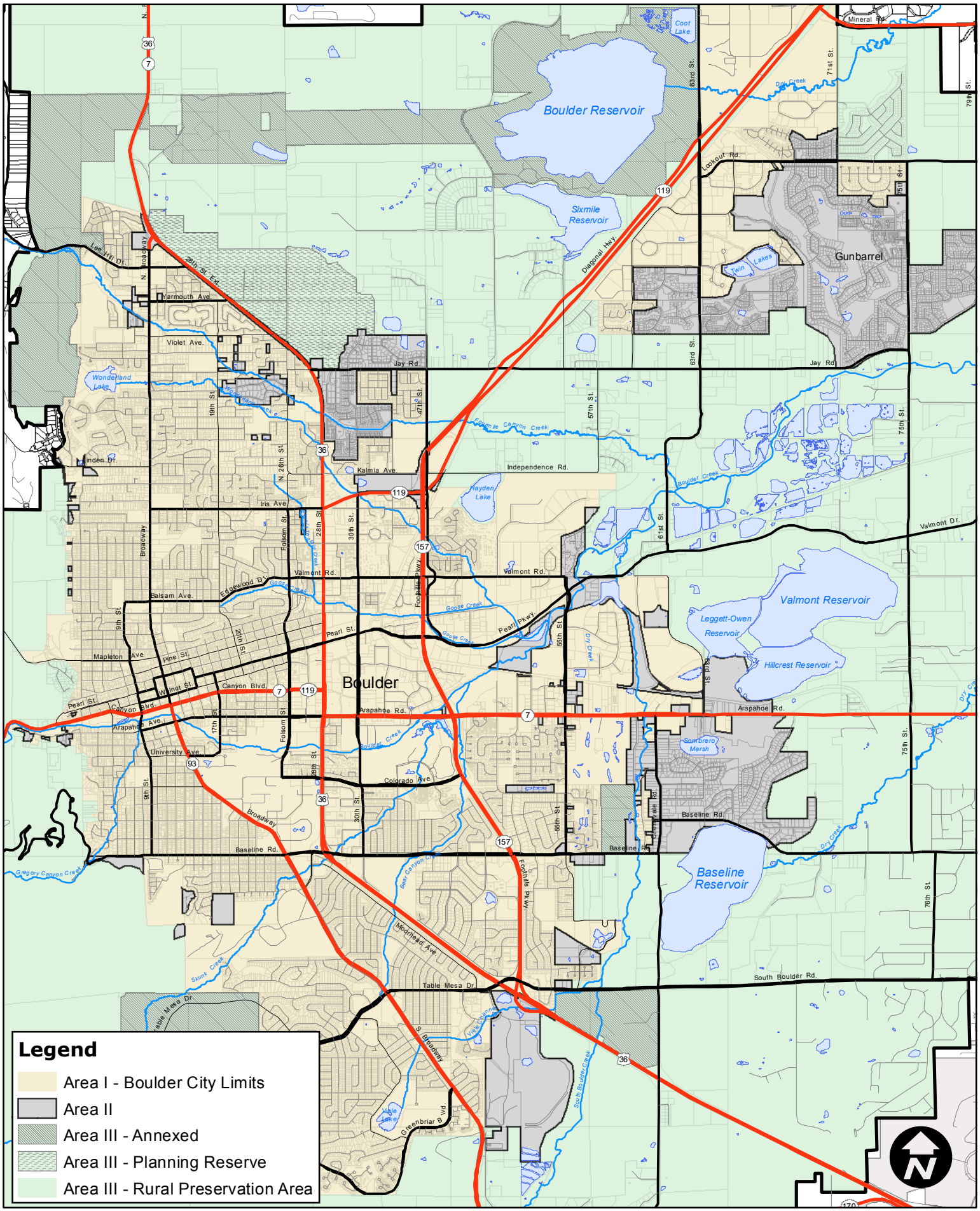
Sewer Tap Fee: Fees associated with individual connection to the city sewer system. Fees include permit fee, inspection fee, and tap fee.

Impervious Area: The hardscaped area on an individual property where stormwater does not penetrate into the ground. Impervious surface area is determined through the water budgeting process and used to calculate the Stormwater PIF at a rate of $1.98 per square foot of impervious area.

Utility Main: This is the estimated cost per household of the utility main construction, road resurfacing and McSorley bridge reconstruction. Please keep in mind that these costs are preliminary and would be finalized during the annexation process.

NCWCD: This is the applicable fees for inclusion of the property in the Boulder Municipal Subdistrict and the Northern Colorado Water Conservancy District.

Area II - Areas Eligible for Annexation



FINANCIAL FUND-SPECIFIC BACKGROUND

Public Works

Water Utility

The 2014 budget for the water fund includes approximately $14 million (54 percent) for operating costs and $12 million (46 percent) for capital/debt service. Major projects currently in the Capital Improvement Program (CIP) include rehabilitation of the Betasso Water Treatment Facility ($16 million in 2016), Barker Dam rehabilitation ($8 million in 2018), and Carter Lake Pipeline ($28.5 million in 2017/18). A one percent rate increase in the water fund generates approximately $215,000 in annual revenue. One million dollars in bond funding requires approximately $100,000 per year for 20 years.

Wastewater Utility

The 2014 budget for the wastewater fund includes approximately $10 million (63 percent) for operating and $6 million (37 percent) for capital/debt service. Many wastewater projects are funded over multiple years and the average annual wastewater CIP for 2014-2019 is $2.8 million. The 2014 CIP includes approximately $700,000 for rehabilitation, repair, and replacement of the collection system with most remaining funding committed to the Wastewater Treatment Facility. Current funding allows for rehabilitation of about 1 percent of the city's approximately 400 miles of wastewater collection system each year. A 1 percent rate increase in the wastewater fund generates approximately $135,000. One million dollars in bond funding requires approximately $100,000 per year for 20 years.

Stormwater & Flood Management Utility

The 2014 budget for the stormwater and flood management utility fund is approximately $3.7 million (27 percent) for operating and $10.2 million (73 percent) for capital/debt service. Many capital projects in this fund are budgeted over multiple years. The current, proposed CIP for 2014-2019 averages $4.6 million per year. Major near term CIP projects include $8 million for flood mitigation on Wonderland Creek and $5.5 million for a portion of the mitigation on South Boulder Creek (total mitigation costs are in the $30-40 million range). A 1 percent rate increase in the stormwater and flood management fund generates approximately $50,000 in additional annual revenue. As with the other utility funds, $1 million in bond funding requires approximately $100,000 per year for 20 years.

Transportation

The 2014 budget for the transportation fund includes approximately $18.9 million (60.18 percent) for operating costs and $10.71 million (34 percent) for capital construction, much of which is leveraged funding (state and federal funds) for specific projects. Most temporary and permanent flood repair expenses and debris removal and street sweeping will be covered by maintenance budgets in 2013 and 2014, Capital Improvement Bond funds for categories such as street reconstruction and overlay, allocations from any CIP project or annual program cost savings or reductions, and/or use of the Transportation Fund Operating Reserve. Boulder voters passed a transportation tax (.15 percent) in November of 2013 that begins in 2014. While the money has not yet been appropriated, the funds will help the Transportation Division catch up on deferred transportation maintenance. This additional funding will also help cover flood recovery

expenses in addition to replenishing the reserve funds that are currently needed to assist with recovery efforts. Also, as reimbursement dollars come from the Federal Emergency Management Agency (FEMA) and Federal Highway Administration (FHWA), the Transportation Division would be able to restore funding to catch up on multimodal system repairs that were deferred due to flood response and recovery.

Facilities and Asset Management (FAM)

The 2014 budget for the facilities fund includes approximately $3 million (52 percent) for operating costs and $2.8 million (48 percent) for major repair and capital improvements. Major projects currently in the 2014 CIP include flood protection of the Main Library ($400,000) and Reconstruction of the Main Library (North) Plaza ($147,000). Facility funding will cover insurance deductibles that totals $350,000 of which FEMA could potentially cover $262,500 (75 percent) and the state covering $43,750 (12.5 percent), which leaves the $43,750 (12.5 percent) to be covered by the General Fund.

Parks and Recreation

The Parks and Recreation Department utilizes various funds for its operating and capital expenditures. The 2014 operating budget is approximately $7.15 million for parks and planning and $9.96 million for recreation. The capital budget is approximately $7.15 million. Key initiatives in 2014 will be to continue the planning, design, and construction of $8 million in capital projects from the voter approved Capital Bond and the aquatic facility plan, pool replastering, and the flatiron golf course irrigation system replacement. In relation to flood recovery projects at the recreation centers, a majority of floor-repair costs will be provided by the FAM Facilities Renovation and Replacement fund and through insurance reimbursement. Some repairs (and costs incurred) will include mitigation projects to help ensure that this level of damage does not occur in the future. If there are any additional costs not covered by FAM or insurance, the 2013 and 2014 CIP as well as projects identified using bond proceeds may need to be altered to accommodate the costs of the repairs.

Open Space and Mountain Parks (OSMP)

The 2014 budget for the OSMP fund includes approximately $1.2 million for visitor infrastructure (trails and trailheads). The majority of this allocation was for implementation of projects in the West TSA plan. OSMP requested a supplemental appropriation of $1 million to address flood recovery issues, much of which is intended to address restoration of the trail system. Staff anticipates returning to council in 2014 for supplemental appropriations to the budget for other trail and trailhead related infrastructure repairs.

While repairs to untreated water delivery infrastructure that are wholly owned by the city are likely to be accounted for in the CIP, the costs for repairs to ditches where the city is one of several shareholders are likely to be passed on as increases in annual assessments. Increased ditch company assessments to address flood-related impacts are likely to total $1 million or more and will be spread over many years.

Staff has identified the ditch companies where the amount of flood-related damage and proportion of city ownership will result in significant costs for OSMP and has encouraged those companies to apply for public assistance, grant funding and low-interest loans. So far more than

$4 million (in no or low interest) loans and $100,000 in cash grants have been awarded to the city or ditch companies with high combined levels of city ownership and flood expenses.

The 2014 budget for the OSMP fund does not include funding for aquatic habitat improvements in the creeks that the city owns and manages. In past years, funding has been allocated to aquatic habitat improvements to implement recommendations in the Grassland Ecosystem Management Plan. Staff anticipates returning to council in 2014 for supplemental appropriation to repair structures used to create and manage aquatic habitats that were destroyed by flooding. In coming years, staff will seek funding from a variety of sources, potentially including special appropriations through the city budget process for surveys of exotic and sensitive species to determine the effects of the flood on the distribution and extent of habitat and populations on city open space.

With the approval and encouragement of the Open Space Board of Trustees, annual lease payments were reduced by 20 percent to offset some of the financial burden on agricultural lessees. This investment in the long-term sustainability of agricultural operations will reduce revenue to the Open Space Fund in 2013 by approximately $30,000.

While repairs to infrastructure used to manage the delivery of untreated water for municipal uses tend to be considered eligible for reimbursement by FEMA, the repair of facilities used to deliver water for agricultural uses are typically not. Staff is working with city consultants and FEMA staff to better understand the conditions under which repairs to water delivery infrastructure is considered to be eligible for reimbursement. Agricultural users may be eligible for funding from other sources.