

**AGENDA ITEM SUMMARY**  
**FORT COLLINS CITY COUNCIL**

**ITEM NUMBER: 8**

**DATE: June 1, 2004**

**STAFF: Jim Hibbard**  
**Bob Smith**

**SUBJECT**

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Second Reading of Ordinance No. 057, 2004, Amending Chapter 26 of the City Code to Reflect the Adoption of Updated Master Drainage Plans and to Revise the Official Repository of Plan Documents.

**RECOMMENDATION**

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Staff recommends adoption of the Ordinance on Second Reading.

**EXECUTIVE SUMMARY**

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This Ordinance, which was unanimously adopted on First Reading on April 6, 2004, modifies City Code Section 26-543(b), in order to adopt updated drainage master plans. The Ordinance also provides that the drainage master plans and updates to those plans will be maintained on file in the office of the Utilities, rather than the office of the City Clerk. This change was made to improve the efficiency and effectiveness of the use and maintenance of those records.

ORDINANCE NO. 057, 2004  
OF THE COUNCIL OF THE CITY OF FORT COLLINS  
AMENDING CHAPTER 26 OF THE CITY CODE TO  
REFLECT THE ADOPTION OF UPDATED MASTER DRAINAGE PLANS  
AND TO REVISE THE OFFICIAL REPOSITORY OF PLAN DOCUMENTS

WHEREAS, Section 26-543 of the Code of the City of Fort Collins adopted by reference and declared a part of the City Code a master drainage plan for each of eleven areas of the city, for use as the basis for City storm drainage capital improvements planning and determinations related to storm drainage impacts and requirements for developments in the city; and

WHEREAS, City staff has developed updated master drainage plans analyzing storm drainage in the various basins of the city (the "Updated Plans"), which Updated Plans are on file and available for public inspection at Utilities; and

WHEREAS, staff has summarized and outlined the conclusions of each of the Updated Plans in a "Stormwater Master Plan Executive Summary Report", dated September 2003 (the "Executive Summary"), which is on file in the office of the City Clerk and available for public inspection; and

WHEREAS, the Updated Plans and Executive Summary have been reviewed by the City's Water Board, Parks and Recreation Board, Affordable Housing Board, Landmark Preservation Commission, Natural Resources Advisory Board, and Planning and Zoning Board, and comments received from these boards have been addressed in the final preparation of the Updated Plans and Executive Summary; and

WHEREAS, the City's Water Board, the Planning and Zoning Board and the Natural Resources Advisory Board took formal action and unanimously passed individual motions recommending adoption by City Council; and

WHEREAS, staff presented the Updated Plans and the Executive Summary to the City Council for Council review at its Study Session of January 13, 2004, and at that time received direction to present the same to the Council for approval; and

WHEREAS, the modification of City Code Section 26-543(a) so as to provide a current reference to the Updated Plans instead of the previously approved plans will assist the public in identifying the applicable storm drainage plans and requirements applicable in particular locations throughout the city; and

WHEREAS, for the foregoing reasons, the City Council wishes to amend the City Code in order to reflect the approval of the aforementioned Updated Plans, as generally described and summarized in the Executive Summary; and

WHEREAS, City Code Section 26-543(b) currently requires that master drainage plans be on file with the office of the City Clerk, but those records can be maintained more efficiently

and effectively by Utility Services, given Utilities' role in reviewing and implementing the plans; and

WHEREAS, in order to allow the master drainage plans and updates thereto to be maintained on file at Utilities, a modification of said Code language is necessary.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That Chapter 26 of the Code of the City of Fort Collins is hereby repeal and reenact Section 26-543(a), to read as follows:

**Sec. 26-543. Master drainage plans.**

- (a) Master drainage plans are hereby adopted by reference and declared to be a part of this Article for the following stormwater basins of the city:
- (1) McClellands Creek Master Drainage Plan Update, prepared by ICON Engineering, Inc., dated November 2000 and revised March 2003;
  - (2) East Harmony Portion of McClellands Creek Master Drainage Plan Update, prepared by ICON Engineering, Inc., dated August 1999 and revised July 2001;
  - (3) Foothills Basin, prepared by URS Corporation, Inc., dated April 2003;
  - (4) Dry Creek Master Plan, prepared by URS Corporation, Inc., dated December 2002;
  - (5) West Vine Master Plan, prepared by URS Corporation, Inc., dated November 2002;
  - (6) Spring Creek Basin Master Drainage Plan, prepared by Anderson Consulting Engineers, Inc., dated June 2003;
  - (7) Fossil Creek Drainage Basin Master Drainageway Planning Restudy, prepared by ICON Engineering, Inc., dated February 2003;
  - (8) Old Town Basin Master Drainage Plan, prepared by Anderson Engineering Consultants, Inc., dated September 2003;
  - (9) Fox Meadows Basin Drainage Master Plan Update, prepared by ICON Engineering, Inc., dated December 2002 and revised February 2003;
  - (10) Mail Creek Master Plan, prepared by URS Corporation, Inc., dated April 2003;

- (11) Cache la Poudre River Master Drainageway Plan, prepared by Ayres Associates, Inc., dated August 2001;
- (12) Boxelder/Cooper Slough Basin, prepared by Anderson Consulting Engineers, Inc., dated December 2002 and revised November 2003; and
- (13) Canal Importation Master Drainage Plan, prepared by Anderson Consulting Engineers, dated April 2001.

Section 2. That City Code Section 26-543(b) is hereby amended to read as follows:

(b) The General Manager shall maintain the above master drainage plans on file in the office of the Utilities. The General Manager may adopt additional master drainage plans by reference and declare them to be a part of this Article and copies of such master drainage plans shall be on file in the office of the Utilities. Any such plan may be modified by the General Manager, for the sole purpose of enhancing such plan, provided that such enhancement does not diminish the general purpose and specific objectives of the adopted plan and does not diminish the ability of the plan to address the disposition of stormwater runoff in the applicable basin, and if modified, the modification shall be filed in the office of Utility Services.

Introduced and considered favorably on first reading and ordered published this 6th day of April, A.D. 2004, and to be presented for final passage on the 1st day of June, A.D. 2004.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Passed and adopted on final reading this 1st day of June, A.D. 2004.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**AGENDA ITEM SUMMARY  
FORT COLLINS CITY COUNCIL**

**ITEM NUMBER: 16**

**DATE: April 6, 2004**

**STAFF: Jim Hibbard  
Bob Smith**

**SUBJECT**

First Reading of Ordinance No. 057, 2004, Amending Chapter 26 of the City Code to Reflect the Adoption of Updated Master Drainage Plans And to Revise the Official Repository of Plan Documents.

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**RECOMMENDATION**

Staff recommends adoption of the Ordinance on First Reading. The Water Board, Natural Resources Advisory Board and the Planning and Zoning Board recommend adoption of the Ordinance.

**FINANCIAL IMPACT**

Staff believes the recommended \$132 million in City funded flood control projects is achievable under the current funding plan in approximately 25 years. This funding plan calls for 6 percent increases in rates for each of the next four years, then level for the next twenty years. City Council sets stormwater rates as a part of the budget process, which in turn determines the length of time required to build out the master plans.

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**EXECUTIVE SUMMARY**

The Ordinance updates current City Code references to the master drainage plans for the various basins in the city by repealing and reenacting Code Section 26-543(a). A number of the master drainage plans have been updated or revised since the related Code language was modified. This is in part due to the fact that in 1999, the City Council adopted a higher rainfall standard based upon a technical analysis of rainfall statistics, which resulted in modifications to the master plans. In addition, updated topographic information, changes in conditions, and better technical data and methods has resulted in other improvements from the previously listed plans. Staff has prepared a Stormwater Master Plan Executive Summary Report that summarizes citywide information and presents brief summaries of the master plan for each basin. The summarized basin master plans strive to design projects that provide cost-effective flood protection for a 100-year rainfall event. The basin master plans recommend a number of flood control and other types of improvements.

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In addition, the Ordinance modifies City Code Section 26-543(b), so as to provide that the master drainage plans and updates to those plans will be maintained on file in the office of the Utilities,

rather than the office of the City Clerk. This change is to improve the efficiency and effectiveness of the use and maintenance of those records.

## BACKGROUND

The Master Plan Executive Summary takes a detailed look at the flooding and water quality problems in each basin and provides the general direction for stormwater management in those basins. The stormwater basin master plans include:

1. Recommended projects to reduce flood damage to homes and businesses, the potential for loss of life, as well as reduce flooding of roads,
2. guidance for new development in the basin,
3. guidance for enhancements to the riparian habitat along stream corridors to improve water quality, and
4. guidance for stabilizing streams where necessary.

The stormwater master plans strive to design projects that provide cost-effective flood protection for a 100-year rainfall event.

The Master Plan Executive summary outlines plan-recommended projects to solve existing flooding problems on both structures and infrastructure. In some cases, projects do reduce the floodplain on undeveloped land inadvertently. This usually occurs when the problem is downstream of undeveloped land and the solution is upstream. Since water on undeveloped land does not constitute a public problem, reduction of the floodplain on undeveloped land is not a goal of the master plan. New development in a floodplain is required to adhere to the floodplain regulations.

In 1999, Council adopted a higher rainfall standard based upon a technical analysis of rainfall statistics. Higher rainfall resulted in higher runoff and larger floodplains. This required an update to all master plans to reflect the higher rainfall and reevaluate the needed capital improvements.

In 2001, Council adopted a revised Canal Importation Basin Master Plan.

In 2001, Council approved a plan to fund \$120 million in stormwater improvements over the next 25 years on a pay-as-you-go basis. Monthly fees for a typical residential customer in 2004 are \$14.26. By 2008, monthly fees for the typical residential customer will be \$18.35. Monthly fees will return to maintenance levels in approximately 25 years. New development pays a storm drainage impact fee. Revision to the impact fee will be brought to Council after adoption of the new master plan.

Colorado and Federal laws require the city to regulate to the 100-year storm event. This means the 100-year storm is used to map the regulatory floodplain and enforce floodplain regulations. The City, through Storm Drainage Design Criteria and Construction Standards, also requires developers to use the 100-year storm for the design of new drainage facilities. Current City policy is master plans should recommend improvements that provide 100-year protection when the benefits of projects outweigh their costs. In 2001 Council requested staff to include in future master planning efforts an analysis of providing flood protection for events less severe than the 100-year flood event.

### Existing Conditions Damage Statistics

All basins have been analyzed based on the higher rainfall, resulting in higher runoff flows, and deeper and wider floodplains. The studies show significant flooding problems in a variety of locations around the city with the following results:

1. damage could occur to more than 2,600 structures during a 100-year storm,
2. the estimated damage from a single 100-year storm would be approximately \$142 million, and
3. if nothing is done to the existing drainage system, flood damages over the next 50-years are estimated to be over \$353 million.

### The 2003 Stormwater Master Plan Executive Summary

In general, the recommended projects include construction or enlargement of detention ponds, construction of open channels and storm sewers, and enlargement of road culverts. Because master plans are conceptual in nature, the projects proposed may change based upon actual field conditions at the time of final design. The attached Stormwater Master Plan Executive Summary Report (September 2003) provides an overview of the technical process and recommendations of the master plans from all basins. The first several pages contain a summary of citywide information. This is followed by one or two page summaries of each basin. The basin master plans strive to design projects that provide cost-effective flood protection for a 100-year rainfall event. The master plans recommend:

1. \$164 million in flood control projects, \$132 million in the City and \$32 million funded by the County and others,
2. \$42 million in projects funded by partners (development, grants, etc.) as opportunities arise for water quality enhancements, and localized drainage improvements,
3. standardized development criteria to reduce peak flow leaving newly developed sites to 2-years historic or equivalent (many basins already had this requirement),
4. regional water quality treatment opportunities to improve the quality of stormwater runoff and,
5. expanded wetlands and improved riparian habitat opportunities along natural channels to improve the quality of stormwater runoff.

Overall, the basin master plans reduce or eliminate the majority of structural damages caused by flooding in the city. Staff estimates flood damage will be eliminated on approximately 2,200 structures, almost 85% of the total number of damaged structures. The following table summarizes the benefits of the recommended master plans.

Benefit of \$164 Million in Flood Control Projects		
	Before	After
Property Damage Over the Next 50-Years	\$353 million	\$63 million
Number of Structures Damaged by 100-Year Storm	2,600	400

In addition to the above tangible benefits of reduced damages to structures, the following intangible benefits are not included in the estimates:

1. reduced damages to vehicles and public infrastructure,
2. reduced emergency response, evacuation, clean-up, temporary housing costs,
3. streets are open during flooding events for emergency response vehicles,
4. improved water quality, environmental enhancement, and providing a feeling of safety and security for citizens, and
5. reduced risk of injury and/or loss of life.

To the extent possible, the proposed flood control projects provide opportunities to enhance and expand wetlands and natural habitat areas to improve the quality of storm runoff. Recommendations to retain and improve existing riparian habitat along the natural channels are also included.

Staff believes the completion of \$132 million in City funded flood control projects is achievable under the approved funding plan in approximately 26 years.

The proposed Boxelder/Cooper Slough Master Plan currently recommends improvements in Boxelder/Cooper Slough basin to solve flood damage problems in the Mulberry/I-25 area. However, this basin does have a large amount of undeveloped land in the floodplain as well as a large amount of land in the Mountain Vista Subarea that does not have an adequate drainage outfall. Additional study by both the City and the County has begun in order to determine development guidance and identify possible solutions to stormwater issues in these areas. Staff will return to Council with the results of this additional study if necessary.

**Reduced Level of Protection Analysis**

The recommended plan of improvements is based upon providing a 100-year level of flood protection whenever it is cost effective. In 2001, Council asked staff to look at the costs and benefits of providing a reduced level of protection in future master planning efforts. Staff looked at a 50-year level of protection for this analysis. Under this scenario, the regulatory floodplain is still mapped using the 100-year storm and property and structures remaining in the floodplain after projects are built are subject to flood damages and floodplain regulations.



The following table shows the costs and benefits of the 50-year level of protection plan and provides a comparison with the recommended 100-year level-of-protection plan.

Reduced Level of Protection Analysis		
	100-Year Level of Protection	50-Year Level of Protection
Cost of Flood Control Projects	\$ 164 million	\$ 141 million
Property Damage Reduced	\$ 290 million	\$ 146 million
Number of Structures Damages Eliminated	2,200	500

Although the cost of the 100-year plan is high, the favorable benefit to cost ratio shows the effectiveness of the plan. Compared to the lower level of protection plan, an additional \$20 million in projects will result in \$144 million in damage reduction on 700 structures. This extra investment also represents a significant reduction in risk to the citizens.

At the January 13, 2004 Study Session, City Council supported the 100-year level of protection.

### Public Outreach

The process of informing property owners in the City's 12 stormwater basins of upcoming changes to both the master plans and floodplain regulations began in early 2002 and continued until late 2003. A variety of communication tools such as customer mailings, web pages, press releases and media interviews, public meetings and open houses, and outreach to both internal and external groups potentially affected were used.

In 2002, customers most affected by floodplain boundaries and proposed regulations were identified as the primary focus of initial outreach. Because a significant number of those within the mapped floodplains are Larimer County residents, City and County staff collaborated on public outreach.

Eight public open houses were held to provide an opportunity for customers and staff to discuss the information included in the mailings as well as the master planning process. Customers received mailed invitations and open houses were advertised in the Fort Collins Coloradoan and North Forty News. At the same time, web pages were developed on the Utilities Web site to provide additional information. Over 4,000 packets were mailed and 250 people attended the 8 open houses held during the year.

In 2003, public outreach was expanded to include all property owners and renters in the City's stormwater drainage basins, not just those within the mapped floodplains. At a kickoff open house held in February, property owners and renters were invited to learn more about the City's stormwater drainage basins, floodplains and regulations, safety and flood protections, and the regional weather patterns that can result in flash flooding.

Following the kickoff, nine additional public open houses were held. Information presented at the open houses consisted of basin-specific information as well as information about the citywide planning process, including:

1. flooding histories for each basin,
2. maps showing identified basin problems,
3. maps showing proposed solutions,
4. proposed floodplain regulations,
5. stormwater project funding, and
6. the process for adoption of master planning and floodplain regulations.

Over 62,000 pieces of mail were sent including informational packets, basin-wide kickoff invitations, open house invitations and letters to 24 community organizations. Publicity for the outreach campaign included media releases and briefings, and advertising in local media.

The nine open houses were attended by 470 people. Of the 24 community organizations contacted, seven asked for presentations or more information. Presentations were made to six City Boards, including the Water Board, the Natural Resources Advisory Board, the Planning and Zoning Board, the Affordable Housing Board, Landmark Preservation Board and Parks and Recreation Board.

Comment forms were available at the open houses and on the Utilities Web site. Thirty-three comment forms were submitted. Although most of those who attended open houses did not comment formally on either the proposed master plans or floodplain regulations, almost everyone got a chance to express their views to staff.

Comments received on master plan issues can generally be summarized as follows:

1. support for specific projects, build as soon as possible,
2. support for master planning as a whole, it seems reasonable,
3. questions about local drainage issues,
4. make sure water quality is an integral part of capital projects,
5. concern projects don't encourage mosquitoes,
6. support for the 100-year level of protection,
7. do more to protect citizens,
8. implementation of the master plans is too expensive, flooding is rare,
9. balance habitat protection with recreational users,
10. keep streams natural, not structural,
11. questions about impact of recent nearby development,
12. concern that projects remove vacant land from the floodplain, which allows development, and
13. would like to see funding changed back to basin by basin, floodplain properties should pay more.

In March of 2004, about 10,000 post cards were mailed to customers who live or have property in floodplains, informing them that the updated basin master plans would be considered by City Council on April 6.

**ATTACHMENTS**

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Stormwater Master Plan Executive Summary Report  
Stormwater Master Plan Summary Table  
Flooding History in Fort Collins  
Recommendation from Water Board  
Recommendation from Natural Resources Board  
Recommendation from Planning and Zoning Board  
January 13, 2004 Study Session Summary

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