

WESTMINSTER

Staff Report

TO: The Mayor and Members of the City Council

DATE: October 31, 2012

SUBJECT: Study Session Agenda for November 5, 2012

PREPARED BY: J. Brent McFall, City Manager

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

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

A light dinner will be served in the Council Family Room

6:00 P.M.

CITY COUNCIL REPORTS

- 1. Report from Mayor (5 minutes)
- 2. Reports from City Councillors (10 minutes)

PRESENTATIONS 6:30 P.M.

- 1. Proposed Councillor's Bill re: Amendments to the Westminster Municipal Code Concerning Storm Water Quality
- 2. 2012 Comprehensive Energy Report

EXECUTIVE SESSION

None at this time.

INFORMATION ONLY ITEMS

1. Name for the Westminster Station Transit Oriented Development Area

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

Respectfully submitted,

J. Brent McFall City Manager



Staff Report

City Council Study Session Meeting November 5, 2012







SUBJECT: Proposed Councillor's Bill re: Amendments to the Westminster Municipal

Code Concerning Storm Water Quality

PREPARED BY: Andrew Hawthorn, Senior Civil Engineer

Recommended City Council Action

Direct Staff to prepare an ordinance for City Council action prior to December 31, 2012 to revise Sections 8-11-3 through 8-11-8, 8-11-10, 8-11-11 and 11-6-5 and repealing Section 11-7-7 of the Westminster Municipal Code, all concerning storm water quality matters.

Summary Statement

- In 2003, the City was required by the federal Environmental Protection Agency (EPA) to apply for a National Pollutant Discharge Elimination System (NPDES) storm water permit through the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division. In 2013, the City will begin its second renewal of the NPDES storm water permit, each having a 5-year cycle.
- The City is required by the storm water permit to minimize the amount of pollutants that enter into its channels, streams and lakes.
- On October 15, 2012, City staff responded to a mandatory Storm Water Targeted Permit Questionnaire from the CDPHE Water Quality Control Division. Findings from this questionnaire showed that the City must update its Municipal Code to reflect more specifically the requirements of the storm water permit and water quality regulations.
- Most of the proposed revisions are related to the addition or modification of the existing code language to bring it in line with current storm water regulations. One new addition to the City Code will be a prohibition of the storage of construction and landscape materials within the public right of way. Another new addition is a provision for Post Construction Best Management Practices (BMP) installation and maintenance.
- The proposed ordinance will provide mechanisms to protect and enhance the quality of water discharged into the City of Westminster's storm drainage system. The code revisions discussed here must be adopted by the City Council before December 31, 2012 in order to meet mandatory permit requirements.

Expenditure Required: \$0

Source of Funds: n/a

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Policy Issue

Should the City of Westminster update the storm water quality portion of the code to bring it in line with the NPDES storm water permit and CDPHE regulatory requirements?

Alternative

City Council could elect to make additional revisions to the ordinance, but those identified by staff are the minimum necessary to meet current regulations by the required deadline of December 31, 2012.

Background Information

The 1972 amendments to the Clean Water Act provided the statutory basis for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants in storm water runoff to waters of the United States. The Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division administers this program. Since 2003, the City has been obligated to follow the requirements of the NPDES storm water permit. In 2013, the City will mark its second renewal of the permit, each having 5-year terms. A Targeted Permit Questionnaire was distributed by the CDPHE to most regulated cities and counties throughout the State. It was a mandatory requirement to respond to the questionnaire. The questionnaire served as a self-audit identifying items that need to be brought into alignment with permit and regulatory language thus necessitating revisions to the City code.

The following is a summary of proposed changes to the WMC:

- Most of the revisions are related to the addition of specific language to the code to bring it in line
 with current federal regulations. For example: "A Land Disturbance Permit is required for all new
 development or redevelopment for land disturbance equal to or greater than one acre..." Other
 revisions include the addition of definitions and an update of the list of discharges not considered
 illicit discharges.
- Proposed revisions will prohibit the stockpiling of landscape/construction materials and the placement of trash roll-offs in the public right of way. This prohibition is desired because landscape materials stored within the street can easily be washed into the City's storm sewer system. Furthermore, stockpiled materials and/or dumpsters within the street represent an undesirable traffic hazard.
- Post Construction Best Management Practices are mandatory additions to the code. Owners of commercial and residential sites will be required by Code to maintain their detention ponds. Most owners of commercial and residential sites already take good care of their ponds but this code revision will give the City the authority to pursue those sites whose detention ponds are in need of maintenance and repair. This regulation is applicable to ponds constructed after 2002.
- It is a mandatory permit requirement that these code revisions be adopted by the City Council before December 31, 2012.

If the City Council concurs with the proposed changes to the code, staff will move forward with finalizing an ordinance amending Sections 8-11-3 through 8-11-8, 8-11-10, 8-11-11, 11-6-5 and repealing 11-7-7 of the WMC. If authorized, this ordinance will be placed on the agenda of an upcoming meeting for official Council action. Appropriate City staff will attend the November 5th Study Session to answer questions from City Council.

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These proposed revisions to the Municipal Code supports the City Council Strategic Plan Goals including: Safe and Secure Community via effective storm water management, Vibrant Neighborhoods in One Livable Community taking responsibility for private infrastructure, and Beautiful and Environmentally Sensitive City.

Respectfully submitted,

J. Brent McFall City Manager

Attachment - Ordinance

BY AUTHORITY

	BI ACHIOMITI			
	ORDINANCE NO.	COUNCILLOR'S BILL NO.		
	SERIES OF 2012	INTRODUCED BY COUNCILLORS		
	A BILL			
	FOR AN ORDINANCE AMENDING SECTION 8-11-6, 8-11-7, 8-11-8, 8-11-10, 8-11-11 AND 11-6-5 AND R WESTMINSTER MUNICIPAL CODE CONCERNIN			
	THE CITY OF WESTMINSTER ORDAINS:			
	Section 1. Section 8-11-3, W.M.C., is hereby AME	ENDED as follows:		
	8-11-3: DEFINITIONS: (3391) The following words, terms shall have the following meanings unless the context clearly specifically indicates otherwise, the following terms and phrase following meanings:	y indicates otherwise Unless the context		
I	(A) "Applicant" shall means a landowner or agent of a landow	wner who has filed an application for a		Formatted: Font: Not Bold
	grading and erosion control permit.		//	Formatted: Bullets and Numbering
i	(B)"Best Management Practices (BMPs)" means hall mean	schedules of activities prohibitions of	_ \	Formatted: Font: Not Bold
ı	practices, maintenance procedures, and other management practi			Formatted: Bullets and Numbering
	the municipal separate storm sewer system (MS4). BMPs also is procedures and practices to control plant site runoff, spillage drainage from raw material storage.	include treatment requirements, operating		
l	(C)"Builder" meansshall mean a person who undertakes construction	ction activities.		Formatted: Bullets and Numbering
	(D)"Business Owner" meansshall mean a person who owns title	to a commercial property.	(Formatted: Bullets and Numbering
I	(E)"City Inspector" means shall mean the person or person(s) au	thorized by the City Manager to inspect a	——	Formatted: Bullets and Numbering
	site for the purpose of determining compliance with the provision	ns of this Chapter.	`	<u> </u>
Ì	(F) "City Manager" shall mean as used in this ordinance refe	ers to the City Manager of the City of		Formatted: Font: Not Bold
I	Westminster or the Manager's appointed designee.		7	Formatted: Bullets and Numbering
I	(G)"Compliance Date" means shall mean the final deadline by		(Formatted: Bullets and Numbering
	violation of a prohibition or limitation or to meet a stormw specified in a compliance schedule, industrial discharge per adopting an applicable stormwater quality standard.			
1	(H)"Compliance Order" meanshall mean an administrative ord	ler that directs a user to comply with the	——	Formatted: Bullets and Numbering
•	provisions of this Chapter, or of a permit or administrative order order may include a compliance schedule involving specific actiperiods.	issued hereunder, by a specific date. The	•	
I	(1)"Compliance Schedule or Schedule of Compliance" mea			Formatted: Bullets and Numbering
	specifying a date or dates by which user must comply with a st quality requirement or a prohibition or limitation and which achieve such compliance.			

(H) "Construction Activities" means shall mean clearing, grading, excavation, and other ground disturbance Formatted: Bullets and Numbering activities. Construction does not include routine maintenance performed by public agencies, or their agents to maintain original line grade, hydraulic capacity, or original purpose of facility. "Construction materials" shall mean any material intended for or used in the construction of structures or buildings, including, without limitation, concrete, concrete block, brick, cement, plastic, glass, asphalt, timber, lumber, wood, plywood, fiberboard, shingles, pipe, cable, wire, conduit, duct, insulation, drywall, tile, cabinetry, appliances, fixtures, or like materials. (K) "Construction Site Operator" means hall mean a person who has been designated by the developer to-Formatted: Font: Not Bold perform routine inspections of BMPs and who is responsible for ensuring that the structural integrity of Formatted: Bullets and Numbering the BMPs are maintained and that the BMPs perform as designed. (L)"Critical BMPs" means hall mean those BMPs such as, but not limited to, sediment ponds and Formatted: Font: Not Bold dewatering structures, silt fence, wattles, vehicle tracking pads, inlet filters, that are installed to keep Formatted: Bullets and Numbering sediment and pollutants from leaving a construction site and discharging into receiving waters of the Formatted: Font: Not Bold United States. (M) "Developer" means shall mean a person who undertakes land disturbance activities. Formatted: Font: Not Bold Formatted: Bullets and Numbering (N)"Development" means shall mean any activity, excavation or fill, alteration, subdivision, change in-Formatted: Font: Not Bold land use, or practice, undertaken by private or public entities that affect the discharge of stormwater Formatted: Bullets and Numbering runoff. The term "development" does not include the maintenance of stormwater runoff facilities. (O) "Disturbed Area" means shall mean that area of the land's surface disturbed by any work activity upon Formatted: Font: Not Bold the property by means including but not limited to grading; excavating; stockpiling soil, fill or other Formatted: Bullets and Numbering materials; clearing; vegetation removal; removal or deposit of any rock, soil, or other materials; or other activities which expose soil. Disturbed area does not include the tillage of land that is zoned agricultural or the tillage of a parcel zoned PUD (planned unit development) within the area identified for agricultural uses. (Waterway)" means hall mean a permanent or intermittent stream or other body of Formatted: Font: Not Bold water, either natural or man-made, which gathers or carries surface water. Formatted: Bullets and Numbering (W)"Final Stabilization" is reached when all ground surface disturbing activities at the site have been-Formatted: Font: Not Bold completed, and uniform vegetative cover has been established with an individual plant density of at least Formatted: Bullets and Numbering 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. (R)"Homeowners Association (HOA)" means the entity responsible for management and Formatted: Font: Not Bold maintenance of those elements of a residential subdivision owned in common by its homeowners. Formatted: Bullets and Numbering (S) "Illicit Discharge" means shall mean any discharge to a municipal separate storm sewer system (MS4) Formatted: Font: Not Bold that is not composed entirely of stormwater runoff, or the exceptions listed in section 8-11-8(A) of this Formatted: Bullets and Numbering Code. (T)"Land Disturbance Activity" means shall mean any activity, which changes the volume or peak flow-Formatted: Font: Not Bold discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, Formatted: Bullets and Numbering scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse. or beneficial owner of land, including those holding Formatted: Font: Not Bold

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land, or any other person holding proprietary rights in the land.

(W) "Land Disturbance Permit" meanshall mean a permit issued by the City to conduct any land-

disturbance activity equal to or greater than one acre, earthwork involving moving more than two hundred

(200) cubic yards or if grading occurs on a property that has a slope in excess of eight percent (8%).

"Landowner" shall mean the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land. This term includes banks or lending institutions that have obtained control of land as a result of foreclosure, receivership, bankruptcy or like actions.

"Landscape Materials" shall mean any material used in or derived from the landscape or improvements to the landscape of real property, including, without limitation, trees, branches, shrubs, plants, vegetation, brush, yard trimmings, leaves, side, dead plant material, soil, or dirt, sand, gravel, rock, stone, boulders, mulch, fencing, paving materials, or like materials.

(W)"MS4" meansshall mean a municipal separate storm sewer system.

(X) "Municipal Separate Storm Sewer System" means a conveyance or system of conveyances (including but not limited to, roads with drainage system, municipal streets, inlets/catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (1) Owned or operated by a state, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the Clean Water Act that discharges to sState waters;
 - (2) Designed or used for collecting or conveying stormwater;
 - (3) Which is not a combined sewer; and
 - (4) Which is not part of a Publicly Owned Treatment Works (POTW).

(Y) "Non-critical BMPs" means shall mean those BMPs such as, but not limited to, silt fence, wattles, diversions, vehicle tracking pads, or inlet filters, that are installed to minimize the impacts of construction by nonstructural and structural devices within the subject construction site.

(Z) "Official Development Plan (ODP)" means the planning document, approved by the Westminster City Council, that identifies improvements and other responsibilities associated with the development and/or redevelopment of parcel(s) of land.

(AA) "Permanent BMPs" meanshall mean those BMPs such as, but not limited to, a vegetated swale, wetland, water quality structure, to be installed and regularly maintained in order to ensure long term water quality benefits.

"Post Construction BMP" shall mean any structural or non-structural permanent BMP that maintains or restores hydraulic conditions to minimize the discharge of pollutants.

"Public Property"shall mean any public street, right-of-way, road, highway, place, alley, sidewalk, easement, park, square, median, parkway, boulevard or plaza within the City limits that is dedicated to public use, or owned or maintained by the City.

(BB) "Receiving Waters" means shall mean a river, lake, stream, drainage ditch or other watercourse.

(CC) "Sediment/Erosion Control Plan" means a plan that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

(DD) "Stop Work Order" means shall mean an order issued by the City which requires that all construction activity on a site be stopped.

(EE) "Stormwater" means shall mean precipitation-induced surface runoff.

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(FF)"Stormwater Construction Permit" means a permit issued by the Colorado Department of Public Health & Environment Water Quality Control Division. This program is referred to as the Colorado Discharge Permit System, or CDPS, and regulates stormwater discharges from construction activities under the CDPS general permit for stormwater discharges associated with construction activities.

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(GG) "Stormwater Runoff" meanshall mean that part of snowfall, rainfall or other precipitation that is note. absorbed, transpired, evaporated, or left in surface depressions, and which then flows controlled or uncontrolled into a watercourse or body of water.

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(HII) "Surety" meanshall mean a Letter of Credit or cash in the amount of 115% of the cost of constructing or installing all items associated with the Land Disturbance Permit. The surety will guarantee the completion of all terms and conditions of the Land Disturbance Permit as well as payment of any fines and interest assessed due to non-compliance with any section of the Land Disturbance Permit or this

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"Temporary BMPs" means shall mean those temporary BMPs such as, but not limited to, silt fence, wattles, vehicle tracking pads, inlet filters, diversions, sediment ponds and dewatering structures, to be installed and regularly maintained until the site is sufficiently stabilized.

(JJ) "Urban Drainage and Flood Control District" or "UDFCD" means shall mean the District created by **Section** 32-11-101, et seq., C.R.S.

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ordinance.

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"Vegetative Cover" means shall mean grasses, shrubs, bushes, trees, ground cover and other plants.

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"Watercourse" shall mean the natural or human-made channel, ditch, conveyance, or the standing body of water into which stormwater is discharged.

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Section 2. Section 8-11-4, W.M.C., is hereby AMENDED as follows:

8-11-4: ADOPTION OF STORMWATER QUALITY GUIDELINES: (2335 3391) The City hereby requires the implementation of structural or non-structural measures to reduce or maintain the quality of stormwater on a temporary or permanent basis. Such measures will be designed and installed based on guidelines presented in VOLUME 3 - BEST MANAGEMENT PRACTICES, URBAN STORM DRAINAGE CRITERIA manual, most recent addition, published by the Urban Drainage and Flood Control District.

Section 3. Section 8-11-5, W.M.C., is hereby AMENDED as follows:

8-11-5: LAND DISTURBANCE PERMIT REQUIREMENTS: (3391 3564)

A Land Disturbance Permit shall be required prior to conducting any land disturbance activity Formatted: Font: Not Bold that: (1) Covers an area equal to or greater than one (1) acre, or,

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(2) Covers an area less than an acre if the site is part of a larger common plan of development, or

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(3) Involves earthwork affectinginvolving more than two hundred (200) cubic yards of material, or

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Involves environmentally sensitive areas, as determined by the City Manager, or

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Involves grading on any property that possesses physical characteristics or features that increase the potential for erosion, such as highly erodible soils, natural drainage channels or swales, or has a slopes in excess of eight percent (8%).

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- (B) ____The Land Disturbance Permit application and the specific criteria therefor areis available from the Engineering Division in the Department of Community Development. See Section 11.7.7 of the Westminster Municipal Code for specific regulations. Applicants shall file a complete application and pay the application fee specified in Section 11-1-6, W.M.C., which fee is non-refundable.
- (C) If the permit is granted, prior to its issuance the landowner shall enter into a land disturbance agreement with the City and provide a financial guarantee, unless one or both of these requirements is waived by the City Engineer for good cause.
- Surety must also be provided before a Land Disturbance Permit will be issued.

Section 4. Section 8-11-6, W.M.C., is hereby AMENDED as follows:

8-11-6: STORMWATER MANAGEMENT PLAN: (2335 3391)

- (A) __Every development, redevelopment or construction project that receivesquires a land disturbance permit requires the preparation of a stormwater management plan (SWMP) to include temporary and permanent Best Management Practices (BMP-s) designed to reduce the pollutant loading on the stormwater system. Any stormwater management plan prepared for a property in the City pursuant to the laws and regulations of the State of Colorado shall be prepared in accordance with the standards and specifications contained in the City of Westminster Storm Drainage Design and Technical Criteria Manual and submitted to the City for its review and approval.
- (B) Upon approval of a SWMP, the landowner, or its agent designated in writing, is responsible for performing all inspections in compliance with the regulations of the State of Colorado Water Quality Control Division.
- (C) Both during and after completion of every development, redevelopment or construction project that has received approval of a SWMP, the landowner, its successors, heirs or assigns shall be responsible for maintaining and repairing any and all temporary and permanent drainage improvements provided for in the approved SWMP and as provided below in Section 8-11-7.

Section 5. Section 8-11-7, W.M.C., is hereby AMENDED as follows:

- **8-11-7:** MAINTENANCE REQUIREMENTS: (3391 3564) Developers, builders, business owners, homeowners' associations and landowners, respectively, shall be responsible for ensuring that all Best Management Practices (BMP) identified on a project'sthe approved construction drawings, its Official Development Plan, and its the Land Disturbance Permit and its Stormwater Management Plan (SWMP) application are properly installed, repaired, perpetually maintained and are in good working order as hereafter provided.
- (A) <u>Landowners and/or their d</u>-evelopers shall be responsible for ensuring that:
- (1) Any temporary and/or permanent <u>post-construction</u> BMPs <u>that were</u> installed are being properly maintained and are in good working order;
 - (2) The site is fully developed and final stabilization has been reached;
- (3) Any deficiencies noted by the City prior to the expiration of the warranty period for public improvements have been corrected;
- (4) When individual lots have been sold to a <u>bBuilder</u>, the <u>landowner and/or dDeveloper shall</u> <u>disclose and explain, if necessary</u>, the stormwater runoff quality requirements <u>of the SWMP</u> with the <u>bBuilder prior to or</u> at time of closing.
- (B) Builders shall be responsible for ensuring that:
- (1) Any temporary and/or permanent <u>post-construction</u> BMPs <u>that were</u> installed prior to lot purchase from developer and/or <u>landowner</u> are being properly maintained and are in good working order;

- (2) Final stabilization as completed by the Developer is maintained or repaired if damaged by the Builder;
- (3) Any temporary and/or permanent <u>post-construction</u> BMPs necessary for the building site(s) have been properly installed, maintained and remain in good working order <u>up to and</u> until the property has been sold, <u>unless builder has a signed agreement with the landowner wherein the landowner accepts the complete maintenance responsibility until the land is sold to a business, land or landowner; and</u>
- (4) Stormwater runoff quality requirements of the SWMP for-of individual site(s) are disclosed and explained to the purchaser at time of closing, unless builder has a signed agreement with the landowner wherein the landowner accepts this disclosure responsibility.
- (C) Business owners, homeowners' associations and landowners shall be responsible for ensuring that:
- (1) Any temporary BMPs installed prior to lot purchase from developer, owner, and/or builder are properly maintained and remain in good working order until the lot is stabilized;
 - (2) Final stabilization has been achieved and maintained;
- (3) If not installed prior to individual lot purchase, temporary and/or permanent BMPs will be installed within ten (10) days from date of purchase at the base of all gutter downspouts and around the perimeter of the site where needed to prevent sediment from moving off-site and maintained until final stabilization has been achieved on the property; and
- (4) Permanent <u>post-construction</u> stormwater runoff quality measures constructed or installed on their property as shown on the approved <u>SWMP</u>, the Official Development Plan and/or construction plans are properly maintained <u>in perpetuity</u>.
- (D) All temporary stormwater runoff quality control measures shall be removed within fourteen (14): calendar days after final stabilization has been achieved and the temporary measures are no longer needed.

(E) Should any developer, builder, business owner, homeowners association or landowner fail to adequately maintain the permanent post-construction stormwater runoff quality control measures or fail to remove the temporary measures, the City Manager or his representative may summarily cause the necessary work to be performed at the expense of such responsible party, and the cost of such abatement shall be a first and prior lien on the property as provided by Title I, Chapter 31 of this Code, and may be assessed and collected pursuant to Section 8-4-5 of this Code.

(F) Every person owning property through which a watercourse passes, ander such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Section 8-11-8, W.M.C., is hereby AMENDED as follows:

8-11-8: ILLICIT DISCHARGES: (3391 3564)

(A) Prohibition of Illegal Discharges ROHIBITION OF ILLEGAL DISCHARGES: It is unlawfuland constitutes a public nuisance for any person to discharge or cause to be discharged or spilled any substance other than naturally occurring stormwater runoff into the City's stormwater drainage system. Except for: return flows from irrigation, de-chlorinated water from swimming pools, water from fire hydrants including water used for fire fighting, discharges from potable water sources, air conditioning Formatted: Tab stops: 0.5", Left + Not at 0.38"

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uncontaminated groundwater and other water determined by the City Manager or designed to be non-contaminated and acceptable for return to the storm drainage system and receiving waters. Discharges from the following activities will not be considered a source of pollutants to Formatted: Tab stops: 0.5", Left + 1", Left + the stormwater system and to waters of the United States when properly managed to ensure that no potential pollutants are present; and, therefore, they shall not be considered illegal discharges unless determined to cause a violation of the Clean Water Act or this Chapter: Potable water line flushing; Formatted: Indent: Left: 0.38", First line: (a) 0.63", Outline numbered + Level: 5 + Uncontaminated pumped groundwater and other discharges from potable water Numbering Style: a, b, c, ... + Start at: 1 + sources; Alignment: Left + Aligned at: 1" + Tab after: Landscape irrigation and lawn watering; (c) 1.25" + Indent at: 1.25", Tab stops: 0.38", List tab + Not at 1.25" Diverted stream flows; (d) Rising groundwater; (e) Formatted: Bullets and Numbering (f) Groundwater infiltration to the stormwater drain system; Uncontaminated foundation and footing drains; (g) Uncontaminated water from crawlspace pumps; (h) Air conditioning condensation; <u>(i)</u> Natural springs; (i) <u>(k)</u> Individual residential car washing; Flows from naturally existing riparian habitats and wetlands; (1) Dechlorinated swimming pool discharges; Water incidental to street sweeping (including associated sidewalks and medians) (n) not associated with construction; and (o) Discharges necessary to protect public health and safety such as flows from Formatted: Bullets and Numbering emergency firefighting activities. Waiver: The City Manager may exempt occasional, incidental non-stormwater Formatted: Don't adjust space between Latin and Asian text, Tab stops: 0.5", Left + 1", Left discharges that the Manager determines to be uncontaminated and acceptable for return to the stormwater + Not at 0.38 drain system and the receiving waters. Formatted: Underline This prohibition shall not apply to any non-stormwater discharge permitted under an-Formatted: Tab stops: 0.5", Left + 1", Left + NPDES or CDPS permit or under a CDPHE-issued low risk discharge policy or guidance letter, provided Not at 0.381 that the discharge is in full compliance with all requirements of the permit, waiver, order and/or other applicable laws and regulations. (A)(B) Nothing contained herein shall be construed to relieve any person discharging or causing to be Formatted: Tab stops: 0.5", Left + Not at discharged or allowing to be discharged water into the storm drainage system from any liability for damage caused by the volume or quality of water thus discharged. Formatted: Bullets and Numbering (B)(C) Prohibition of Illicit Connections-ROHIBITION OF ILLICIT CONNECTIONS: Formatted: Tab stops: 0.5", Left + Not at The construction, use, maintenance or continued existence of illicit connections to the (1) Formatted: Bullets and Numbering storm drain system is prohibited. Formatted: Indent: First line: 0.5", Tab stops: 1", Left + Not at 0.75" This prohibition expressly includes, without limitation, illicit connections made in the Formatted: Indent: First line: 0.5", Tab stops: past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. A person is considered to be in violation of this ordinance if the person connects a line Formatted: Indent: First line: 0.5", Tab stops: conveying sewage to the MS4, or allows such a connection to continue. It shall be unlawful for any person to place, store, maintain, allow to accumulate, or permit any Formatted: Tab stops: 0.5", Left + Not at other person to place, store, maintain, or allow to accumulate on any public property or right-of-way any stockpile, pile, storage, accumulation of construction materials and/or landscape materials, or any roll-off dumpster, unless such person is an employee, official, or contractor of the City acting within the scope of his or her municipal functions.

(C)(E) EnforcementENFORCEMENT: In addition to any other remedies provided in this Chapter, should any person discharge or cause to be discharged or spilled or maintain a condition upon any property that may result in the discharge of any substance other than naturally occurring stormwater runoff into the City's stormwater drainage system, except for the exceptions listed in section 8-11-8 (A) above, the City Manager or his representative may—enjoin the illicit discharge immediately and summarily cause allthe necessary cleanup work to be performed at the expense of such responsible party, and the cost of such abatement shall be a first and prior lien on the property as provided by Title I, Chapter 31 of this Code, and may be assessed and collected pursuant to Section 8-4-5 of this Code. Alternatively, the City may make a demand on the surety to pay for these expenses.

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Section 107. Section 8-11-10, W.M.C., is hereby AMENDED as follows:

8-11-10: ADMINISTRATIVE ENFORCEMENT REMEDIES: (3391)

(A) Notification of ViolationNOTIFICATION OF VIOLATION: When the City Manager finds that a user has violated, or continues to violate, any provision of this Chapterordinance, a land disturbance permit or order issued hereunder, or any other stormwater quality standard or requirement, the City Manager may serve upon that user a written or electronic Notice of Violation. The Notice of Violation may include specific required actions and may require the user to submit an explanation of the violation and a plan for the satisfactory correction and prevention thereof. Submission of this plan in no way relieves the user of liability for any violations occurring before or after receipt of the Notice of Violation. Where the violation is an illicit discharge, the discharge must be immediately corrected. Nothing in this Section shall limit the authority of the City Manager to take any action, including emergency actions or any other enforcement action, without first issuing a Notice of Violation.

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(B) Consent Orders CONSENT ORDERS: The City Manager may enter into Consent Orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for noncompliance. Such documents will include specific action to be taken by the user to correct the noncompliance within a time period specified by the document. Such documents shall have the same force and effect as the administrative orders issued pursuant to Sections 8-11-10(D) and 8-11-10(E) of this ordinance and shall be judicially enforceable.

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(C) Show Cause HearingSHOW CAUSE HEARING: The City Manager may order a user who has violated, or continues to violate, any provision of this Chapterordinance, a land disturbance permit or order issued hereunder, or any other stormwater quality standard or requirement, to appear before the City Manager or designated representative and show cause why the proposed enforcement action should not be taken. Notice shall be served on the user specifying the time and place for the meeting, the proposed enforcement action, the reasons for such action, and a request that the user show cause why the proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least fourteen (14) days prior to the hearing. A show cause hearing shall not be a bar against, or prerequisite for, taking any other action against the user.

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(D) Compliance OrdersCOMPLIANCE ORDERS: When The City Manager finds that a user has violated, or continues to violate, any provision of this Chapter ordinance, a land disturbance permit or order issued hereunder, or any other stormwater quality standard or requirement, the City Manager may issue an order to the user responsible for the discharge, directing that the user come into compliance within a specified time. If the user does not come into compliance within the time provided, storm sewer service may be discontinued unless adequate Best Management Practices are installed and properly maintained. Compliance orders also may contain other requirements to address the noncompliance, including additional self-monitoring and best management practices designed to minimize the amount of pollutants discharged to the storm sewer. Issuance of a compliance order shall not be a bar against, or a prerequisite for, taking any other action against the user.

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(E) Cease and Desist OrdersCEASE AND DESIST ORDERS: When the City Manager finds that a user has violated, or continues to violate, any provision of this ordinance, a land disturbance permit or

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order issued hereunder, or any other stormwater quality standard or requirement, or that the user's past violations are likely to recur, the City Manager may issue an order, including a stop work order, to the user directing it to cease and desist all such violations and directing the user to:

(1) Immediately comply with all requirements; and

(2) Take such appropriate remedial or preventive action as may be needed to properly-address a continuing or threatened violation, including halting operations and/or terminating the discharge. Issuance of a cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the user.

(F) Administrative Fines ADMINISTRATIVE FINES:

- (1) When the City Manager finds that a user has violated, or continues to violate, any provision of this ordinance, a land disturbance permit or order issued hereunder, or any other stormwater quality standard or requirement, the City Manager may fine such user in an amount not to exceed \$1000.00 per violation per day.
- (2) Unpaid charges, fines, and penalties shall be assessed and accrue interest in accordance with the provisions of Chapter 8 of Title I, Westminster Municipal Code, entitled "Penalties and Interest," as it may be amended from time to time. The City may also collect unpaid fines and interest by placing a demand on the surety provided with the Land Disturbance Permit.
- (3) Users desiring to dispute such fines must file a written request for the City Manager toreconsider the fine along with full payment of the fine amount within thirty (30) days of being notified of
 the fine. Where a request has merit, the City Manager may convene a hearing on the matter. In the event
 the user's appeal is successful, the payment, together with any interest accruing thereto, shall be returned
 to the user. The City Manager may add the costs of preparing administrative enforcement actions, such as
 notices and orders, to the fine.
- (4) Issuance of an administrative fine shall not be a bar against, or a prerequisite for, taking any other action against the user.
- (G) Emergency SuspensionsEMERGENCY SUSPENSIONS: The City Manager may immediately suspend a user's discharge, after informal notice to the user, whenever such suspension is necessary to stop an actual or threatened discharge, which reasonably appears to present, or cause an imminent or substantial endangerment to the health or welfare of persons, or which presents, or may present, an endangerment to the environment.
- (1) Any user notified of a suspension of its discharge shall immediately stop or eliminate its contribution. In the event of a user's failure to immediately comply voluntarily with the suspension order, the City Manager may take such steps as deemed necessary, including immediate severance of the storm sewer connection, to prevent or minimize damage to the receiving waters, or endangerment to any individuals. The City Manager may allow the user to recommence its discharge when the user has demonstrated to the satisfaction of the City Manager that the period of endangerment has passed.
- (2) A user that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, to the City Manager prior to the date of any show cause or termination hearing under Sections 8-11-10(C) of this Chapterede.
- (H) Nothing in this Section shall be interpreted as requiring a hearing prior to any Emergency-Suspension under this Section.

Section 448. Section 8-11-11, subsections (A) and (B) W.M.C., are hereby AMENDED as follows:

8-11-11: JUDICIAL ENFORCEMENT REMEDIES: (3391 3564)

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Formatted: Indent: Left: 0", First line: 0.5", Don't adjust space between Latin and Asian text, Tab stops: Not at 0.38" (A) INJUNCTIVE RELIEF: When the City Manager finds that a user has violated, or continues to-violate, any provision of this Chapterordinance, a land disturbance permit, or order issued hereunder, or any other stormwater quality standard or requirement, the City Manager may petition the District Court through the City's Attorney for the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the land disturbance permit, order, or other requirement imposed by this ordinance on activities of the user. The City Manager may also seek such other action as is appropriate for legal and/or equitable relief, including a requirement for the user to conduct environmental remediation. A petition for injunctive relief shall not be a bar against, or a prerequisite for, taking any other action against a user.

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(B) CIVIL PENALTIES:

(1) A user who has violated, or continues to violate, any provision of this ordinance, a land-disturbance permit, or order issued hereunder, or any other stormwater quality standard or requirement shall be liable to the City for a maximum civil penalty of \$1000 per violation, per day. In the case of an illicit discharge or a monthly or other long-term average discharge limit, penalties shall accrue for each day during the period of the violation.

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(2) The City may recover reasonable attorneys' fees, court costs, and other expenses associated with enforcement activities, including sampling and monitoring expenses, and the cost of any actual damages incurred by the City.

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(3) In determining the amount of civil liability, the Court shall take into account all relevant-circumstances, including, but not limited to, the extent of harm caused by the violation, the magnitude and duration of the violation, any economic benefit gained through the user's violation, corrective actions by the user, the compliance history of the user, and any other factor as justice requires.

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(4) Filing a suit for civil penalties shall not be a bar against, or a prerequisite for, taking any other action against a user.

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- Section 9. Section 11-6-5, subsections (A), (B) and (E), W.M.C., are hereby AMENDED to read as follows:
- (A) STANDARDS: The City Manager or his designee is hereby authorized and directed to develop, promulgate, and determine the applicability of, enforce, and from time to time to amend the following design and construction standards: Standards and Specifications for the Design and Construction of Public Improvements (Standards and Specifications), the City of Westminster Drainage Criteria Manual (Drainage Criteria)Storm Drainage Design and Technical Criteria Manual (SDDTCM), and the City of Westminster Landscape RegulationsSitework Specifications (Sitework Specifications) for public and private landscaping.

(B) PREPARATION AND APPROVAL OF PLANS FOR PUBLIC IMPROVEMENTS:

(1) All construction plans, specifications, and associated engineering reports requiredpursuant to this Code shall be prepared by, or under the direct supervision of, a professional engineer duly
registered and licensed to practice engineering in the State of Colorado and shall bear the seal of said
engineer.

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- (2) All construction plans, specifications, and associated engineering reports required pursuant to this Code shall be prepared in compliance with the City of Westminster Standards and Specifications for the Design and Construction of Public Improvements and, the City of Westminster Drainage Criteria Manual Storm Drainage Design and Technical Criteria Manual (SDDTCM), and the City of Westminster Sitework Specifications.
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- (3) The approval by the City of any construction plan, specification, or report shall indicate only that the plan, specification, or report appears to be in conformance with the City's submittal requirements and that standard engineering principles and practices appear to have been followed. Any

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such approval shall not be deemed as an indication that any assumption, calculation, or conclusion contained therein has been verified by the City. The professional engineer submitting the plans, specifications, and reports shall, at all times, be solely responsible for their accuracy and validity. If during the construction process, or at any time within one year following the acceptance by the City of the completed improvements, any deficiencies or errors are discovered in the plans, specifications, reports, or in the actual improvements as built, the City shall have the right to require any and all corrections which may be deemed necessary by the City. The costs associated with any such corrections shall be the sole responsibility of the developer.

(4) If the review and approval of any construction plan, specification, or report by the Cityhas occurred more than twelve (12) months prior to execution of the public improvements agreement or commencement of construction activities, or if construction activities have been abandoned for a period of 12 months and the improvements are not substantially complete, the City shall have the right to require the submittal of such new or supplemental plans, specifications, and reports to insure compliance with the City's current standards and design criteria.

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(5) If, after approval of the construction drawings by the City but prior to substantial-completion of the public improvements, a court order, change in Colorado of federal law, or similar legal requirement occurs requiring the previously approved design to be changed, the City shall have the right to re-evaluate the plans and require that any such change be completed. The cost for such change shall be the sole responsibility of the developer.

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(E) CONSTRUCTION OF IMPROVEMENTS:-

(1) No construction of any public improvement shall commence until the City has issued a written notice to proceed.

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(2) The construction of all public and private improvements in areas of common ownershipshall be completed in accordance with the approved construction drawings and specifications, the City of Westminster Standards and Specifications for the Design and Construction of Public Improvements, the City of Westminster Drainage Criteria Manual Storm Drainage Design and Technical Criteria Manual (SDDTCM), and the City of Westminster Landscape Regulations and the City of Westminster Sitework Specifications

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<u>Section 10</u>. Section 11-7-7, W.M.C. "<u>Soil Erosion and Sediment Control Regulations</u>" is herebyer REPEALED IN ITS ENTIRETY.

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 $\underline{Section\ 11}.\ This\ ordinance\ shall\ take\ effect\ upon\ its\ passage\ after\ second\ reading.$

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Section 12. The title and purpose of this ordinance shall be published prior to its consideration on second reading. The full text of this ordinance shall be published within ten (10) days after its enactment after second reading.

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INTRODUCED, PASSED ON FIRST READING, AND TITLE AND PURPOSE ORDERED PUBLISHED this day of , 2012.

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PASSED, ENACTED ON SECOND READING, AND FULL TEXT ORDERED PUBLISHED this day of , 2012.

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ATTEST: APPROVED AS TO LEGAL FORM:

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City Clerk

City Attorney's Office



Staff Report

City Council Study Session Meeting November 5, 2012



SUBJECT: 2012 Comprehensive Energy Report

PREPARED BY: Thomas Ochtera, Energy / Facilities Projects Coordinator

Jerry Cinkosky, Facilities Manager

Recommended City Council Action

No action is required by City Council at this time. Staff will be in attendance to make a presentation and to answer City Council's questions.

Summary Statement

One aspect of City Council's Strategic plan for 2012-2017 includes having energy efficient and environmentally sensitive City operations. The 2012 Comprehensive Energy Report (CER) brings together data and information from all departments, including enterprise-funded departments, on the fuels, electricity, water, and natural gas used for operations citywide. This is the first time that this information has been brought together in a comprehensive manner citywide.

Expenditure Required: \$0

Source of Funds: N/A

Staff Report – 2012 Comprehensive Energy Report November 5, 2012 Page 2

Background Information

The City Council approved the Energy Efficiency Conservation Strategy (EECS) in June 2009, which was approved by the U.S. Department of Energy in September 2009. Subsequently, American Recovery and Reinvestment Act (ARRA) funds were granted for a number of programs and projects through the Energy Efficiency and Conservation Block Grant (EECBG) allocated to the City. One of these activities was the hiring of an Energy and Capital Improvement Projects (CIP) Coordinator to promote energy conservation, efficiency and affect the CIP design process toward energy efficiency.

This is the first Comprehensive Energy Report and will be regularly updated to include new technologies, programs, and continued outreach. The focus of this report is on the energy used internally in City operations by showing the costs and use of energy in the past three years. It also conveys several of the projects and programs that the City is planning on undertaking in the next three years.

The 2012 Comprehensive Energy Plan serves three purposes which are:

- to verify that the City is meeting the strategic goal of reducing energy consumption citywide;
- to demonstrate the myriad of ways in which City staff contributes to energy conservation and energy efficiency through processes and programs used on a daily basis; and,
- to serve as an internal and external tool to communicate this stewardship to boost awareness and enhance continued efforts.

This report supports City Council's Strategic Goal of Beautiful and Environmentally Sensitive City by making City staff and the community aware of the progress we have made toward the goal of having energy efficiency and environmentally sensitive City operations.

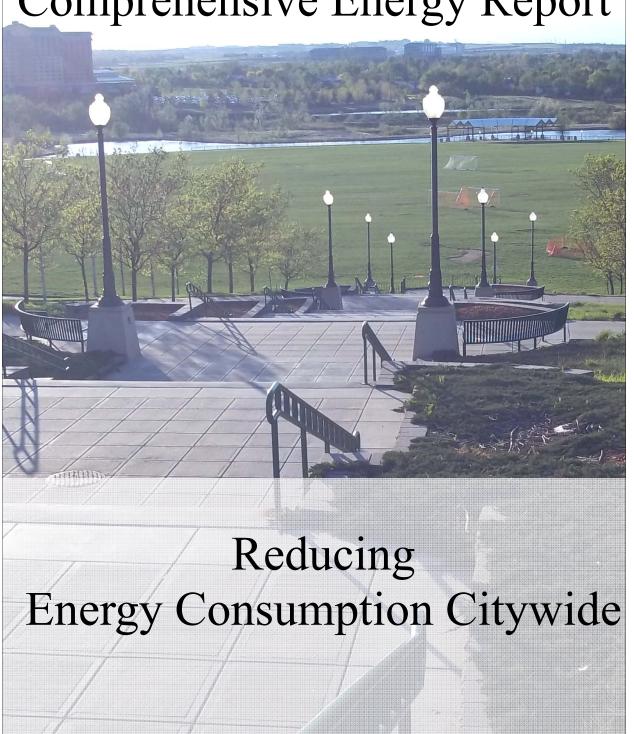
Respectfully submitted.

J. Brent McFall City Manager

Attachment

City of Westminster 2012

Comprehensive Energy Report



Summary:



On the news nearly everyday, there are reports of energy price changes, threats to energy security, changes in technologies, efficiencies, as well as renewable energy. This focus on energy and energy prices underscores the importance of the mindful design and use of our municipal utilities, fleet, building construction and operations. City staff understand the need for careful stewardship and are working to reduce our energy costs and consumption everyday.

This 2012 Comprehensive Energy Report (CER) highlights several ways staff is

working to manage the energy used to provide businesses and residents the high quality of services they have come to expect. In addition, it illustrates the use, costs, and savings for these services over the last three years. Every department in Westminster is a partner in operational energy conservation. This report focuses on our water, wastewater, facility and vehicle operations and provides the first biannual picture of energy. Our ability to comprehensively measure and analyze energy use in operations increases each year. Future comprehensive energy reports will offer more detailed data including more specific savings and energy reductions.

The real savings however, do not come from more detailed data—it comes from the daily



decisions of employees who, in a culture of stewardship of taxpayer dollars, mindfully utilize their own energy consumption in the performance of their duties. Some of these stories are captured here. This is not an exhaustive list of all of the behavior changes and facilities improvements made by staff. Instead, we have attempted to cover a broad swath of efforts in a wide context of situations to demonstrate our culture of conservation shared by many employees. In the City of Westminster, every employee is in one way or other, an energy manager.

Comprehensive Energy Report—October 2012



Acknowledgements

A comprehensive energy report is a collaborative effort. The contributors, editors, and managers listed below took the time to gather and analyze the data presented in an effort to best explain the energy picture for City operations.

Westminster City Council

City Council

Nancy McNally Mayor

Faith Winter Mayor Pro Tem Herb Atchison Councillor Councillor **Bob Briggs** Mark L. Kaiser Councillor Mary Lindsay Councillor Scott Major Councillor

City Manager's Office

City Manager's Office:

J. Brent McFall City Manager **Steve Smithers** Deputy City Manager Barbara Opie Assistant City Manager Aric Otzelberger Assistant to the City Manager Ben Goldstein

Management Analyst

Contributors

Debbie Mitchell General Services Director **Energy and Facilities Projects** Thomas Ochterski

Coordinator

Rachel Harlow-Schalk Senior Projects Officer Jerry Cinkosky Facilities Manager Jeff Bowman Fleet Manager

Phil Jones **Utilities Operations Manager**

Matt Booco Fleet Specialist

Westminster Green Team:

City Manager's Office Kristi Delynko City Attorney's Office Jane Greenfield

Community Development Stephanie Carroll, Heather

Cronenberg, Glenn Mathewson, Dave Murray

Finance Cindy Wiesley

Fire Department Gary Pedigo, Quint Friesell General Services Carey Jensen, Carla Koeltzow



Information Technology Brian Shuyler Parks, Recreation & Libraries Brandy Cordova, Rod Larsen, Diana Smeltzer, Jane Tucker, Sarah Washburn Police Department Linda Brown Public Works & Utilities Stu Feinglas

Message from Tom:



WESTMINSTER

Weather is a substantial contributor to the use and cost of energy. No discussion of energy utilization can occur without some understanding of the relative weather conditions and its correlation with energy use.

Second to weather are rates that utility providers and energy brokers assign to various commodities. These price adjustments affect the overall cost of energy. As such, a more accurate measure of energy is consumption values rather than dollar values.



The City has reduced its energy consumption over the past three years. However, due to the weather conditions and rate increases, it is not accurate to say that we have reduced our <u>costs</u> year to year. Without taking the steps we have, the past three years would have cost Westminster considerably more.

The first part of this 2012 Comprehensive Energy Report (CER) shows the actual costs of our energy consumption in 2009, 2010, and 2011. Within that data, many examples demonstrate the ways in which each department contributes to energy saving efforts. Examples include:

- Energy Performance Contract
- Energy Efficiency Conservation Block Grant (EECBG) Funds
- Support by City Manager for increased energy consideration in capital projects
- Numerous behavior changes by City staff

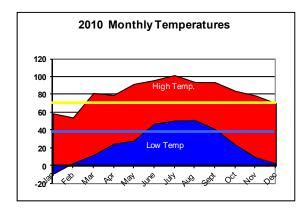
The second part of this report discusses future plans and makes several recommendations on ways in which we can further manage our energy portfolio in years to come.

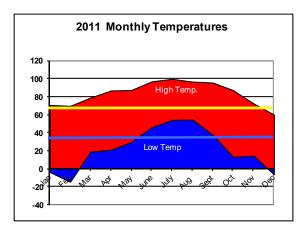
Although our records show positive change in energy management, room remains for improvement. The City has reduced its overall energy consumption, but some areas have reduced more than others. This 2012 CER focuses primarily on the positive steps toward energy stewardship that have helped reduce use, while keeping an eye toward future measures and strategies that may be undertaken to go even further. With the help of administration and City Council, staff will be further encouraged to develop these measures with the very specific goal of reducing costs in the decades to come.

Tom Ochtera Energy and Facilities Projects Coordinator Tochtera@cityofwestminster.us (303) 658-2551

"...every employee is in one way or other, an energy manager."







Indicates 5 year average high temperature

Indicates 5 year average low temperature

The Weather Report

In general, the weather history for the past three years (2009, 2010, and 2011) illustrates what climatologists have been saying for years: the weather events, while decreasing in number, have been getting stronger and more intense. The temperature highs will be higher and the lows will be lower. The rain will come in heavy doses, though less frequently and with more cloudless weeks between them

At the same time, average temperatures in this part of the country are very slowly continuing to climb. This amounts to more days of air conditioning in a climate zone that has traditionally been better known for its white winters and cold months. The charts—show weather temperatures for the past three years. Westminster is increasingly moving away from the averages we have experienced in the past.

In general, outside air temperatures chart closely with inside energy costs. The colder it gets, the more heating runs. Additionally, heaters, pumps, fans, and other elements that move and condition the air inside facilities use more energy.

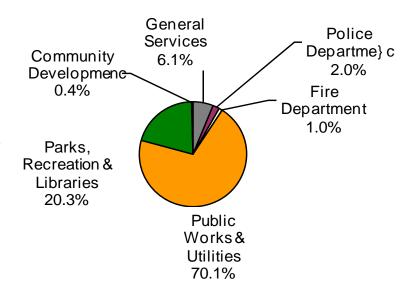
In the summer, parks and pools are used by the community. This means more watering, more mowing, more pumps running, and more work for air conditioning systems. More energy is also used by water treatment facilities to provide this water.

The hotter it gets in a year, the more energy is consumed. If it is colder than average, more energy is used as well. Thus, changing temperatures are an important consideration in understanding energy costs.

Total Percentages of Costs in Fuel and Utilities for 2011

This pie chart illustrates the overall energy picture for all City operations in 2011. Although this chart shows only the most recent year, the percentages shown do not change significantly year to year.

For the purposes of this report, water utility is only included as an energy cost on the production side. This is to simplify the information. Reporting in future years will include water costs both directly (production) and indirectly (consumed in City operations).



Total Energy Costs by Department					
	2009	2010	2011		
General Services	\$325,014	\$320,262	\$262,268		
Police	\$99,564	\$112,275	\$97,061		
Fire	\$68,362	\$71,816	\$61,046		
Public Works & Utilities	\$3,203,549	\$3,544,212	\$3,334,259		
Parks, Recreation & Libraries	\$906,888	\$1,074,212	\$958,750		
Community Development	\$24,655	\$25,097	\$22,436		
Total	\$4,628,032	\$5,147,903	\$4,735,820		

A number of factors contribute to the annual fluctuations in each of these years in all Divisions. Looking at these numbers, it may be hard to believe that energy consumption went down during these same years once the numbers are adjusted for weather and utility rates. Minor adjustments can make a tremendous difference in budgetary impacts to departments listed in the chart above. Part of the task of managing the energy is to buffer the City from these fluctuations.

In future years, better data capture methods will allow us to document energy use in significantly greater detail. This will allow us to analyze the consumption and cost data in multiple ways. Through this analysis, we will be able to create a roadmap that will prioritize energy efficiency and retro-commissioning programs for the least efficient facilities and operational practices. The rest of this report explains the energy reductions achieved and how these advances were made.



Utility Rate Increases

Challenge Utility Budgets

And Reduce Savings

THE DENVER POST

August 27, 2010

Xcel socks Denver with nation's 2nd-highest electric-rate increase.

Denver had the second-highest increase in electric rates in the country in the first half of this year — 21.4 percent, according to the U.S. Bureau of Labor Statistics.

The average rate hike for metropolitan areas with more than 1.5 million people was 0.3 percent. The jump in Xcel Energy bills was driven by two rate increases awarded by the Colorado Public Utilities Commission: \$112 million in May 2009 and \$128 million last December. . .



Energy As Capital Investment

Rising energy prices significantly impact utility budgets. In the past three years, increases in energy unit-costs have been partially offset by decreases in energy units consumed by City operations.

In order to hold the line on utility budgets, continued efforts are needed that will further reduce energy consumption. This requires a commitment to:

- Improve equipment and systems efficiencies
- Scrutinize electrical time-of-use
- Seek out alternative energy generation
- Take personal responsibility for consumption in the work place
- Careful design and selection of energy systems in major capital improvement renovations

These efforts will also require continued investments in new equipment and better insulation. What is saved in utility bills reduces the costs to deliver services to residents and businesses.

History suggests that energy increases in cost by 3-6% per year on average. Even with aggressive efficiency efforts, the rise in unit costs for energy will likely require additional budget increases in the future.

EECBG: Energy Efficiency Conservation Block Grant

In 2009, the City was granted \$952,800 in American Recovery and Reinvestment Act (ARRA) funding for projects related to the <u>COW Energy Efficiency and Conservation Strategy</u> adopted in the June of 2009. This funding provided planning, education, outreach to residential and small business, opportunities toward energy conservation and efficiency benefiting the entire Westminster community. Projects completed include:

- Completing a Citywide Bicycle Master Plan
- Offering a GEO Residential Energy Rebate Program
- Offering a Small Business Efficiency Program (page 12)
- Completing an Energy Performance Contract
- Completing a Public Education recycling campaign
- Hiring an Energy Coordinator (3 years)
- Funding US 36 Commuting Solutions commuter program
- Educating on the 2009 Energy Code Updates
- Retrofitting City Hall Parking Lot lighting (page 27)

Preventative Maintenance

Conducting preventative maintenance on equipment reduces emergencies and downtime related to equipment failure. In addition, by regularly reviewing the equipment's operating efficiency, staff can insure that energy savings through efficiency can be maintained.

The Building Operations and Maintenance (BO&M) Division maintains most of the buildings and area lighting around facilities that are operated by the City. This provides a unique opportunity to affect the efficiency of heating, cooling, and lighting systems in these facilities.



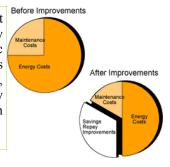
Russ McNeff-HVAC Specialist, and energy manager

Because of the implementation of the EPC, staff have the time required to do preventative maintenance on HVAC equipment Some of the and lighting. regularly scheduled tasks involved in preventative maintenance include changing air filters. tightening belts, checking bearings, and overall systems for proper operating efficiencies.



Energy Performance Contract Phase II

Definition: An Energy Performance Contract (EPC) is an agreement between an Energy Service Company (ESCO) and public organization for the provision of energy services which energy systems are installed, maintained, or renovated to improve the energy efficiency of, or produce energy for, a facility in exchange for a portion of the energy savings.



The City's first EPC was successfully completed in 2007, achieving an estimated annual savings of \$187,385. Over the past three years, BO&M completed a second Energy Performance Contract. The upgrades are financed over a ten year period with the payments coming from savings generated by the upgrades. Below is a chart highlighting some of the upgrades made during the course of the second EPC:

Facility	Scope of work	Estimated savings /year
Various locations	Outside lighting retrofits	\$44,093
Various locations	Water conservation	\$439
Parks	Irrigation Upgrades	\$227,539
ROW and Medians	Irrigation Upgrades	\$0
Countryside Rec Center	Pump Motor	\$51
Parks buildings	Vending misers	\$1,636
Parks and Golf Courses	Ice machine optimization	\$323
City Hall	Control valve	\$1,440
City Hall	Heat exchanger	\$0
City Hall	3-way valve	\$0
Parks Operations	Heater interlock	\$158
Parks Operations	Programable thermostat	\$0
Swim and Fit	Liquid Pool Cover	\$4,283
Heritage and Legacy	Golf Cart Charging	\$8,627
Heritage and Legacy	Evap fan optimization	\$820
Legacy Golf Course	Refrigerated merchandise	\$1,075
Public Safety	Building automation	\$0
City Hall	Building automation	\$0
Total Savings	S. 1970 197	\$388 484

Using federal stimulus money through the Energy Efficient Conservation Block Grant program (EECBG) secured by the City in the Fall of 2009, additional facility improvement measures were added to the Siemens second EPC project:

Facility	Scope of Work	Estimated savings /year	
Municipal Court	Boiler replacement	\$1,451	
City Hall	Boiler replacement	\$816	
City Hall	Pump motor replacement	\$557	
City Hall	Destratification fans	\$282	
City Hall	Heating in void space	\$410	
Various facilities	Utility tracking software	\$0	
Municipal Court	Refrigeration conditioner	\$127	
Public Safety Center	Wiring for BAS	\$0	
City Hall	Wiring for BAS	\$0	
T	- C	20.040	

Total Savings EECBG

The combined savings and associated cost savings for the two EPCs is guaranteed to be \$303,000 annually. All improvement measures have been completed and the City is benefitting from reduced energy and water use today. A Measurement and Verification program is in place to insure we continue to meet these savings guarantees.



Stewardship Fund

Much of the time, the initial purchase of more efficient equipment and systems is more expensive than less efficient alternatives. "Better" often costs a bit more.

When considering the stewardship of the taxpaying public, that additional cost can be justified if the long term savings benefits are greater than the initial costs.

But what if a Capital Improvement Program (CIP) project simply does not have enough funds to pay for the extra cost to be more efficient?

Answer: Stewardship Fund

In 2011, the City Managers Office established a fund that allows CIP Project Managers to pay for the additional cost that efficiency can bring. It is specifically designed to get projects over that initial hump in first-costs.

It is called the Stewardship Fund, because we believe that it is better stewardship to the taxpayers if we keep future costs as low as possible. Specific criteria must be met to tap this Stewardship Fund.

City Manager's Office: <u>Lifecycle Cost Analysis</u>

Beginning in the Spring of 2012, the City Manager's Office (CMO) included requirements for an evaluation of Lifecycle Cost Analysis in contract language for any CIP Contract whose construction will ultimately include on-going energy and water consumption.

"Lifecycle cost" means the cost of owning and operating a piece of equipment or an equipment system over its expected lifetime.

When two or more alternative design lifecycle costs are compared, the full cost of each project is considered. This comparison is Lifecycle Cost Analysis (LCA).

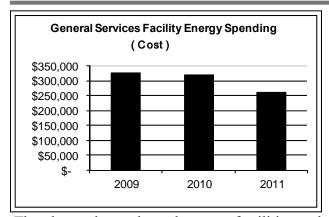
Conducting a LCA for capital improvement projects asks for the efficiency, or the "miles per gallon" of the project's design. Requiring this analysis will add little or no cost to the design of the project, but the LCA information will drive more cost effective decisions reducing the ongoing costs of operating facilities within the City's operations. This will make significant reductions in the energy used to operate facilities now and decades into the future.

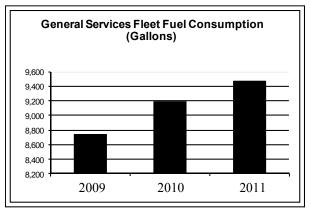
Several departments have implemented LCA since 2010 to help inform their design decisions. For an example of one LCA used for Westminster City Hall, turn to page 27.



Comprehensive Energy Report—October 2012







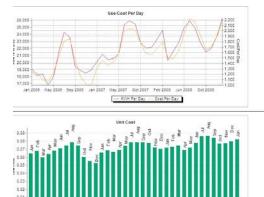
The charts above show the cost of utilities and consumption of fuels from 2009 to 2011 for the Department of General Services. For the purposes of this report, utilities <u>cost</u> and fuel <u>consumption</u> are shown on separate graphs.

In 2010, the weather graphs on page 5, showed a significant deviation from the average temperatures amounting to higher energy costs. That, in addition to the Xcel rate hikes in 2009 and 2010, should have shown a spike in costs for 2010. Instead, the General Services facilities (primarily City Hall, Municipal Services Center, and Municipal Court) reduced their costs during that same period. This is due in part to the success of the first Energy Performance Contract allowing the staff to perform the necessary preventative maintenance, and the installation of building automation systems. The affects of those control systems can be better seen in 2011.

Fuel use appears to be on the rise. This could be, in part, due to the increased travel associated with better service and preventative maintenance tasks. Staff is investigating to better understand the reasons for the increases.

Utility Tracking Software: EnergyCAP

In the past, City electric and natural gas bills were paid by individual departments with funding based on prior year's consumption and rates. While this procedure was effective at insuring timely payments, there was limited analysis and tracking of bills to assess the efficiency of



Example graphs from the new software

buildings. To remedy this, the City implemented utility tracking software in 2011. By utilizing this software, staff will have enhanced auditing, reporting, analyzing, and budgeting of utility bills. By increasing the awareness of the energy consumed in our facilities, staff will be empowered to reduce energy consumption. Some of the features of this new software include:

- 50 audit checks prior to approval and payment of bills
- Enhanced reporting and tracking by department, facility, or meter
- Month-to-month and year-to-year analysis
- Weather normalized reporting and analysis (for more accurate comparisons)
- Comprehensive energy tracking citywide
- EnergySTAR rating opportunities through the federal database Portfolio Manager

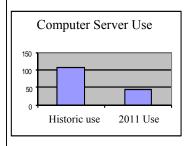


Information Technology: Small Changes Add Up to Big Savings

Information technology is powered by electricity – a lot of electricity. In the City, the Information Technology Department has tackled the issue of power consumption from all directions. New energy-efficient LCD monitors have replaced almost all of the old, power-hungry CRT monitors. New desktop PCs utilize smaller internal "power supplies" to reduce the energy demand of each PC. With approximately 1,000 PCs in use by the City, even small savings add up quickly.

City Server Room
Uses Less Energy

The City's computer server room consumes electricity 24 hours per day. Using the latest server virtualization software allows the City to run more "virtual" computer systems while reducing the number of physical servers from 108 down to just 43.



Even making small adjustments to the temperature in the server room can save energy. Recently the temperature in the server room was set 4 degrees higher to reduce cooling costs.

	17 inch CRT	19 inch LCD	Savings
Wattage:	100	45	55
Hours:	8	8	0
Items:	900	192	708
Cost Per Day:	\$84.93	\$38.22	\$46.71
Cost Per Month:	\$2,547.94	\$1,146.57	\$1,401.37
Cost Per Year:	\$30,999.89	\$13,949.95	\$17,049.94

Not all green initiatives involve electricity. Printers are now set to print on both sides of the sheet of paper by default. Information Technology enables "telecommuting", allowing City staff to occasionally work from home without having to travel to the office. And after 5 years of use, the City's old PCs are donated to a non-profit organization to live a second life.

City Attorney's Offices

Some work area and offices are on the perimeter of City Hall and the natural light from the windows is more than sufficient for most tasks. In the City Attorney's Office, Judy Warhola and Jane Greenfield removed the light bulbs from the fixtures closest to the windows.

This action saved bulbs, electricity and money for the City.



Judy Warhola, City Attorney's Office Administrative Coordinator and an energy manager.





West View Recreation Center

Innovation:

West View Lighting Pilot Project

Following input from guests regarding insufficient lighting in gym, Staff identified the need to add supplemental lighting. Looking to make more efficient and sustainable choices while increasing light levels, LED lighting was chosen. West View Recreation Center will be the test facility for this technology in the City. After testing showed positive cost savings and good light levels, LED lighting has been implemented across the entire gymnasium and Racquetballl Courts. LED lights are about 30% more efficient than the florescent lights they will replace. Additional controls brings the savings to 50%.

Focus On Small Business:

Melt: Bath and Skincare at the Orchard Town Center

Aimee Dorman has been the proprietor of Melt Bath and Skincare at the Orchard Town Center in Westminster for almost three years. She, like seventeen other business owners in

Westminster, took advantage of the Small Business Efficiency Program (SBEP), a partnership between the City's Economic Development Division and the Governor's Energy Office, utilizing EECBG Funds.

Aimee Dorman, proprietor, Melt Bath and Skincare, Inc. and an energy manager.

Aimee received three checks through this program totaling \$2,386. Her first check (from an on-site energy audit) helped pay for an upgrade to her lighting system.

Then she used the lighting rebate check received to help pay for a third phase of improvements (window tinting, occupancy sensors, and tank-less water heater).

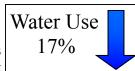
Aimee used the rebate check from one energy efficiency project to fund the next one.
Then, she did it again.





Golf Courses: Energy and Water Savings

Golf Superintendent Lance Johnson and the Golf Course Maintenance team has decreased the annual average water consumption for both courses over the past three years to 230 acre feet per year, per course, compared to the 10 year average of 275 acre feet—a 17% reduction. Staff did this through a series of steps:



- refinement of evapo-transpiration based computerized watering
- replacement of irrigation heads with more efficient gear driven heads
- annual nozzle replacement
- conversion of non-play areas to native grass
- use of wetting agents and increased hand watering of "hot spot" areas
- use of deep and infrequent watering schedules
- addition of irrigation heads to increase application efficiency

VFD's are Variable
Frequency Drives and
work like dimmer
switches for motors.
Using only what is
needed saves money.

Golf Courses: Pump Changes

In addition to water savings, the standard irrigation pumps have been replaced with pumps that run on variable frequency drives (VFD's) and booster pumps to increase efficiency and equipment life while reducing the demand charges related to frequent on/off cycles.

Courses are charged not only on how much electricity is used, but also by what time of day it is used. Pumps are scheduled to run during the night to

further reduce demand charges. Pressure maintained by the booster pump allows for less use of the main pumps during hand "hot spot' watering. Changes like this reduce the Demand charges on our electricity bills.

Focus on the Municipal Services Center:

The Municipal Services Center (MSC) houses Fleet Maintenance, Streets Operations, Building Operations and Maintenance, and Utilities Operations. With a wide variety of needs, the MSC offers a host of operating and equipment installations that serve as a model and laboratory for new ideas. Additionally, the MSC models a culture of stewardship of resources through energy management activities and cultural norms including:

- Vehicle no-idling policy (when appropriate)
- Room Occupancy Sensors- reducing the use of energy during off hours
- Common Area Reduced Lighting- in hallways and fovers
- Roof Photovoltaic Installation
- Building Temperature Schedule Based On Operations—resets the temperature of the building during low activity





Finance: Going paperless

The Sales Tax Division is going paperless for businesses to file their sales tax returns with the City. Part of the motivation for this was budget reductions and looking at ways to cut costs. With technology changes and on-line commerce, most people are accustomed to using the internet. The Finance team decided to make the leap for 2012. Many years ago, the Sales Tax Division implemented the option of on-line filing of returns with electronic payment of these returns. Over the years, Staff has seen a slow, steady increase in electronic filing, ending 2011 with 16% of accounts using electronic filing. Going paperless means no longer printing and mailing returns to the taxpayers. Saving paper, printing, envelopes and an energy manager and postage totaling about \$5,100 this year. On-line filing also means better



Cindy Wiesley -Sales Tax Auditor

accuracy, no lost payments in the mail, and less staff time needed to process the returns. Less paper consumption, so less energy used.



Other Paperless Items

City Council agendas are no longer printed and are instead provided electronically to City Council and Staff- a reduction of 22 packets no longer being created. Additionally, the City Clerk's Office has implemented electronic copies of packets to the Special Permits and Licensing Board and is combining business license renewal documentation for one corporation (who may have multiple licenses and locations in the City) into one packet reducing postage and delivery by the post office.

General Services: Reduce Energy, Reuse Energy, Recycle Energy

Reducing energy consumption in City operations means more than reducing electrical use on site. By reducing use of paper, water, and making better use of the waste stream, General Services is reducing the overall impact of City operations. Examples of these Citywide activities are:



- City Hall has reduced the amount of trash from offices by upsizing the recycle bin and downsizing the trash can. The result has been increased education on what can be recycled from desks and a significant reduction in trash accumulation in offices.
- The coffee bar now has gone green including a compost bin that is shared as a larger composting program within all of City Hall. Actual flatware and cups instead of disposable is used, and individual bags for coffee are composted instead of individual cups that had to be placed in the trash.



Turning off: At the end of every evening, staff turn off monitors and shut down lights before leaving offices. Staff also purchased duplex copiers and printers when replacing old ones. All toner cartridges are recycled through a centralized program at City Hall.



Zero Waste: The Employee Recognition and Appreciation Team (ERAT) has implemented zero waste (85% or greater waste diversion) at all events they hold for employees.

Although the actual savings is difficult to quantify at this level, there is little doubt that these measures reduce the impact our City operations make on the environment.



Photovoltaic Panels Generating Money at Four Facilities

In 2009-2010, photovoltaic panels (PV) systems were installed on four City facilities around Westminster.

- **Public Safety Center**
- City Park Recreation Center
- West View Recreation Center
- Municipal Services Center

The systems amount to a 270 kWh photovoltaic system. There was no up-front cost for this project, as it was acquired through a Power Purchase Agreement (PPA). With a PPA, the City does not own the panels but leases space on facilities' roofs for panels owned by others. They pay the City rent for the roof in the form of cheaper electricity.

The City pays \$0.058 (a nickel) a kilowatt for the power the panels create compared to \$0.08-\$0.12 (a dime) a kilowatt paid to Xcel Energy. For one installation at the MSC, the City saves about \$13,000 a year in electrical costs. Multiplied by four locations, the cost savings from supporting Power Purchase Agreements are evident

In addition, these savings dramatically increase to an estimated \$65,000 per year through utility bill reductions if the City chooses to purchase the panels from Main Street Power. The acquisition of Jerry Cinkosky – Facilities Manager these panels will be investigated in 2013-2014.





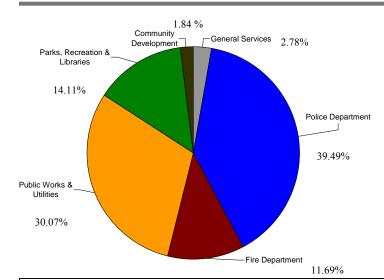
and an energy manager



Photovoltaic system (PV) installed on Municipal Services Complex in 2009-2010.

Municipal Fleet





Fleet Operations conduct preventative maintenance and repair work on every vehicle, including fire and police, in the City's fleet. Automated tracking systems collect precise data measuring fuel consumption and every vehicle and small equipment is tracked by vehicle and user.

This pie chart depicts fuel consumption for all City departments in 2011.

A **Fleet Optimization Study**, concluded in 2011, provided valuable information about vehicle use.

This study highlighted energy use, vehicle sharing, total miles driven, and vehicle downsizing. Based on this study, fourteen vehicles were eliminated from the fleet inventory. Fleet Maintenance continues to partner with other City departments to research and implement more energy savings opportunities. Some of these recommendations are found in the future considerations, starting on Page 28 of this report.



2010

Fuel Consumed Per Department in Gallons

Taken as a whole, total gallons consumed dropped by 12,500 gallons in 2010 and increased by 4000 gallons in 2011. However, this net difference in consumption was less than 2% both years and 2011 ended below 2009's consumption.

	2009	2010	2011
General Services	8,740	9,183	9,468
Police	128,813	127,163	134,455
Fire	38,772	38,333	39,822
Public Works & Utilities	115,397	106,975	102,346
Parks, Recreation & Libraries	50,383	47,989	48,055
Community Development	7,013	6,971	6,286
Totals	349,118	336,614	340,432
Net		-12,504	+3,818

Custom Fuel Reports

Fleet Maintenance fuel tracking capabilities are very accurate. To put this resource to better use, in 2010 staff invested in a custom report that takes prior year fuel use – by vehicle – and it compares with current year. The goal was to create a report to be produced and shared with managers. With this accurate, repeatable data, managers can track fuel use by vehicle and have the ability to help plan trips and reduce fuel consumption from year to year.



Downsizing Vehicles, where possible, was the recommendation from the Fleet Optimization Study. In three separate instances, vehicles were recommended for downsizing in the future. In addition, four hybrids are scheduled to replace larger vehicles in 2012, adding to the current hybrid fleet of 14.

<u>Maintaining Vehicle Replacement Schedules</u> means that older, less fuel efficient vehicles will be replaced on schedule, rather than deferring the replacement for financial reasons. Capital investments are difficult, but the City has established a fund to continue vehicle replacement. More fuel efficient vehicles will continue to rotate into the fleet, resulting in gradual, but consistent increases in fuel efficiency.

<u>Vehicle Sharing and Reducing Hold-Over Vehicles</u>: In the current fleet, three trucks are held-over during summer months for seasonal usage in Parks, Recreation and Libraries, and one van utilized by Fleet as a "loaner" for staff when vehicles are in for maintenance or repair. In addition, five vehicles have been designated for shared uses. This reduces the number of vehicles and the fuel budget associated with them is reduced.

Reducing Take-Home Vehicles ensures appropriate vehicle availability. A limited number of vehicles are approved on a case by case basis to ensure staff availability and access to specialized equipment or gear. More research will be done in 2012 regarding this issue.

<u>Motorcycles</u> are noted on the U.S. Department of Energy website as the most fuel efficient of all on-road vehicles. The City has nine Police motorcycles used for traffic control and patrol. The motorcycles are operated year-around depending on weather.

<u>Increasing E-10 Fuel for 10% Less Dependence on Oil</u>

This Product Contains 10% Ethanol

E-10, better known as 10% Ethanol and 90% gasoline, is a common energy strategy along the Colorado Front Range and is the standard fuel used in City vehicles. Although fuel consumption increases slightly with an ethanol blended fuel, the fuel is comprised of a renewable resource, i.e. 10% less dependency on non-renewable oil.

Interest in E-85 Vehicles

Flexible fuel vehicles (FFVs) are capable of operating on gasoline and E85 (85% ethanol 15% gasoline), or a mixture of both. Much like the nearly 8 million flexible fuel vehicle owners in the U.S. today, many City FFV operators do not know their vehicle is capable of operating on the 85% renewable fuel source. All Police cars purchased since 2009 are FFV. There are currently 59 E-85 compliant vehicles in the City's fleet. Although there is no on-site infrastructure to support E-85 fueling, Fleet Maintenance has been researching possible grant funding sources to make this a reality in the future.

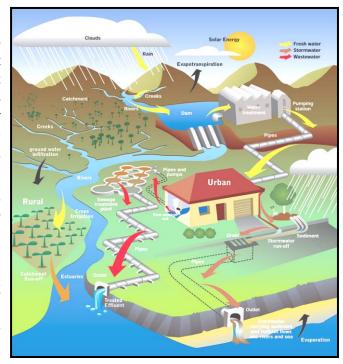




Water and Wastewater Treatment and Distribution

Westminster's water supply system covers lakes, streams and ditches that extend up to the continental divide. A crucial element in the City's ability to ensure excellent water quality is data from water samples drawn from all parts of the raw water system. More data allows the City to pinpoint problem areas and respond quickly to events.

Not long ago, each water sample required a Water Quality specialist to drive to remote locations for collection. As the City's need for more data increased, the City invested in automated water samplers that transmit data to locations minimizing sample collection trips. The result is maintaining high water quality with reduced fuel use.



Water must be pumped to certain areas to

maintain adequate pressure because the City varies in elevation and terrain features. Lift stations must also be used in higher elevation areas to move sewage over hills to flow by gravity. These pumps and lift stations use electricity. With the implementation of more efficient pumps and motors, and installation of variable frequency drives (VFDs) where appropriate, the Utility is reducing its energy consumption, and saving rate payers money.

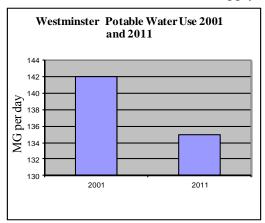
Water Conservation Efforts:

Water conservation is a portion of the water portfolio and is integral to all water demand and supply

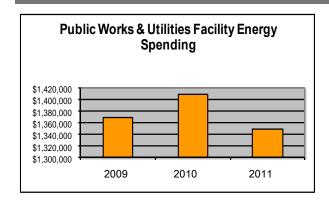
planning. The cost of saving water is typically less expensive than purchasing new water supplies.

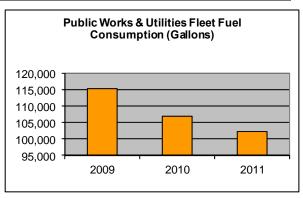
Programs such as toilet and appliance rebates have been used to bring customer demands for water down lessening the need to acquire additional water resources. Through City and customers efforts, water demands have fallen consistently over the past 10 years.

As water demands have fallen, electric use has fallen as well. The City's water conservation efforts will continue to produce savings in water and energy use.









As is evident in the graph above, energy spending can be highly variable based on customer demand (over 50% is driven by weather and irrigation needs), electric and gas rate changes, and the use of technology and optimized operations to shave consumption where possible.

Fleet fuel consumption continues to decline as the utility works to streamline the fleet so that we have the most efficient vehicles in terms of fuel efficiency and job efficiency. Through the Citywide Optimization study, the utility worked to cull the fleet of vehicles that no longer performed needed functions or where other vehicles would perform the function more effectively. Staff also works to limit idling, curtail unnecessary trips, and use the right equipment for the right job. While demand for water plays a large part in electricity use for pumping, the utility continues to seek out methods for reducing energy need while maintaining high levels of service.

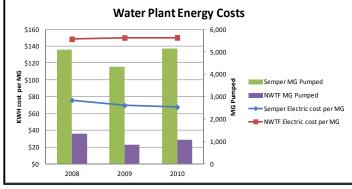
A Tale of Two Treatment Types

The City has two facilities that treat raw water into drinking water. Semper Water Treatment Plant is a traditional plant where water flows by gravity through the filters, then through the plant and on to a five million gallon well storage tank. The Northwest Water Treatment Facility (NWWTF) is a membrane filtration plant that pushes water at a high pressure through racks of filters with tubes smaller than a human hair. While this treatment process is extremely effective, it consumes much more energy per million gallons pumped compared to the traditional gravity fed system at Semper.



Art Cornay, Plant Operator IV and an energy manager

This chart shows the difference in cost per million gallons treated/pumped by each plant. While the energy costs at the NWWTF are higher than those of Semper, the treatment processes are very different. Semper requires significantly more staffing certifications to operate. The majority of potable water is supplied by Semper (77%), and having different treatment systems and plants allows for better redundancy and more options during different raw water conditions and emergencies.





Reclaimed Water System and Raw Water Interconnect

Another important component of the City's water supply is the Reclaimed Water System. The system treats wastewater discharged from the City's treatment facility and redistributes it in a separate distribution system for use in irrigation at over 90 customer sites. When fully developed, the System will supply 3,500 acre feet of reclaimed water each year. This is enough

water to offset the total water needs of 8,140 homes per year.

In the past, the City could use the Reclaimed System to supply Westminster customers with irrigation water during the spring, summer and fall months. Traditionally, the early spring and late fall months saw a steep decline in irrigation water use, but enough use to require the running of the entire Reclaimed Water Treatment Plant. In these "shoulder" months, running the plant with the reduced demand was not efficient.

During these low demand months, the City now has the option to pump raw water into the reclaimed system through the use of a recently completed Raw Water Interconnect (RWI). The RWI uses less energy to supply reclaimed water to customers and eliminates the cost of keeping the plant in full operation.



Pump Considerations



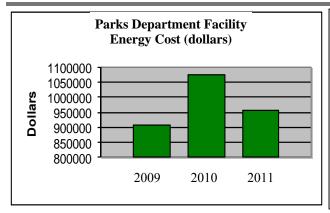
Much of the energy consumption in water and wastewater utilities comes from the use of pumps with large electric motors. Sometimes the utility only needs a fraction of the pump's capacity, rather than 100% of its ability.

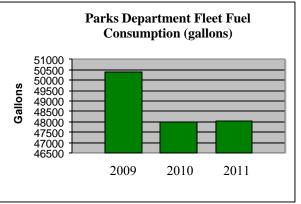
In order to reduce the output of a pump safely and efficiently, the Utility uses variable frequency drives (VFDs) on certain pumps. These drives allow staff to control the electricity going to the motor. VFDs also protect the electrical motors and pumps when the output is lower than capacity. The VFD on pumps allow the Utility to target its true need for pumping while greatly reducing energy consumption.

On pumps where the use of VFDs is not feasible, such as very large 400 horsepower pumps, staff at the water plant optimize pumping by selecting individual pumps to meet the customers' water demand for that day. For example, if staff needs to pump 6 million gallons (MG), they may select a 400 HP pump and a 200 HP pump on a VFD, whereas if they need to pump 3 MG, they may select just a 200 HP pump and adjust the speed to match the pumping need.

Parks, Recreation & Libraries







Holiday Display at City Hall:

Since 2006, the City has been actively replacing holiday light strings with LED lights. Previously, the power loads at City Hall alone demanded more energy than was available - adding lights without installation of a new transformer, at about a \$10,000 cost, was not an option. Energy consumption with the new LED lights is reduced and the lifespan of the new lights is longer.

Swim and Fitness Center Renovation

Completed in 2011, the Swim and Fitness Center renovation included replacement of the existing building's diffusers. The equipment upgrade makes air circulation within the building more efficient by evenly distributing heated or cooled air throughout, thereby reducing overall energy usage and costs.



Ripple Effects:

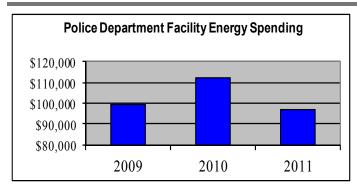
Summer Water Saving Saves Gasoline Too

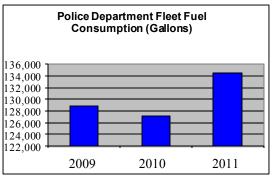
The Parks Services Division initiated the "Resource Management Program" for City parks in 2011. This tier system ranks park maintenance into levels of maintenance and watering schedules. A product of less watering at parks is subsequent reductions in gasoline consumption with less frequent mowing, fertilizing, and weed spraying at designated sites.

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Police Department







As noted on the other electric and gas charts, 2010 was a more expensive year. This was primarily due to an electricity rate increase mid-year. In 2011, the upgraded Building Automation System (BAS) was put on-line in the Public Safety Center, which is managed by the Police Department. The BAS system allows the City staff to "set-back" portions of the building that are not in use 24/7. Setting back the building slows the fans and allows the temperatures to naturally fluctuate. Areas such as 911 dispatch and their related servers rooms can be regulated separately from the rest of the building, accommodating their twenty-four hours a day operation.



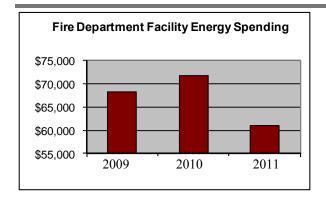
Officers Eric Knopinski and Dan Spinder are an inspiration to many police officers, staff, and residents in Westminster because they do most of their patrol duties on a bicycle. They are responsible for all parks, open space, trails, golf courses, libraries, recreation centers and other areas where patrol cars or motorcycles might cause a disturbance. They also handle all types of calls including traffic and DUIs, when needed. Bicycles save the cost of maintaining and fueling a vehicle full

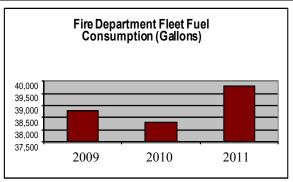


time. Maintenance is about \$600 a year and a new bike lasts 2-3 years. In December 2011 alone, Officer Knopinski logged 417 miles on his bike—good for the City and good for his health.

Fire Department







Over the past three years, the Fire Department's energy usage closely follows outside air temperatures and the electrical rate increases. The Fire Department's station utility (gas and electric) spending shown in the graphs above shows spending for just the six stations within the City.

The fuel consumption (gallons of fuel that were purchased) for the Department increased in 2011. This may be the result of increased presence in and involvement with the community. The increased consumption in 2011 may also be the result of better data gathering techniques implemented by the Fleet Division in 2011.

In the future, the Fire Department is putting together an energy management plan that incorporates the fire stations, response time through GIS Dispatch, and personal responsibility.

Station Upgrades: Lighting Project Reduces Response Time and Energy



For all six Fire Department stations, alerting systems were becoming less dependable as replacement parts for the equipment were no longer being produced. After years of stretching the life of the system, it became apparent that replacement was necessary.

Part of the replacement system included LED track lights down hallways. These hallway lights illuminate in varying colors to indicate the type of call providing low level red lights at night to assist in maintaining night vision for responding crews.

The Department also replaced all fluorescent lights within the hallways of all stations with LED lighting.

All of these lighting improvements resulted in a reduction in utility costs by approximately \$1,962 per year.



Three Year Look Ahead



The Power of Utility Bill Tracking

As mentioned earlier, the City now tracks utility bills through an automated import system. This powerful tool provides the capability to track and compare annual trends in utility bills within and between departments.

By the time the 2014 Comprehensive Energy Report is completed, more precise and clarifying data, reports, charts and graphs will be available from the automated system to illustrate successes and challenges of reducing energy consumption Citywide.



Sub Metering and Interval Metering

Fine tuning the facilities requires a good degree of measuring and tracking of equipment. In 2013, quasi-movable sub-meters will be stationed throughout the City to measure energy use in specific parts of buildings and at specific times of the day for tracking purposes also known as interval metering.

The utility tracking system will then incorporate interval metering into the system for further analysis and reporting. For example, after a few months of measurement, staff will be able to determine the use/cost of our parking lot lights at City Park Recreation Center, or the use/cost of the Computer Server Room in City Hall. This information will help to inform capital and operational replacement strategies.

<u>Increased Building Automation Systems (BAS)</u>



The comfort of building occupants, both Staff and visitors, is a top priority. In the past, temperatures inside buildings fluctuated greatly with the movement of the sun and other external and internal factors.

Today, Staff can monitor remotely building controls and effect interior conditions to maximize the comfort of individuals. Future plans call for additional buildings receiving BAS. By keeping a closer eye on temperatures remotely, control systems will allow for greater energy management, quicker response to issues and more precise scheduling of maintenance activities.

Thermal Imaging

The Building Operations and Maintenance Division purchased two thermal imaging cameras to see areas of cooling and/or heating loss on the building's outside envelope. The City's major facilities will be inventoried and studied for possible action.

"Seeing through the walls" includes electrical panels and circuitry. Staff can then use thermal imaging to identify overloaded or loose circuitry and equipment stresses before there is a problem.





THE DENVER POST

Xcel Electric Rates To Rise 5.5 Percent Over 3 Yrs

April 2, 2012

DENVER (AP) — Xcel Energy has reached a deal with regulators, consumer advocates and businesses for a \$114 million increase in electricity rates over three years.

The Denver Post reports that Minneapolis-based Xcel originally sought \$142 million for this year. Xcel in a statement issued Monday says the typical residential customer would see an increase of \$1.68 per month this year starting in May. Electricity rates next year would increase \$1.29, followed by 73 cents in 2014.

Over the three years, electricity rates will increase by about 5.53 percent.

...the deal must first be approved by the Public Utilities Commission...

<u>Investigating the Alternatives</u>

The City owns a good deal of property much of which is designated "open spaces." These spaces add immeasurable value to the quality of life in Westminster and would not be included in study of alternate energy sources. There are other, less pristine areas that could be utilized for energy generating projects such as solar photovoltaic installations and small wind generation. This will be a challenge in both funding and physical research. However, when lifecycle cost analysis is completed on renewable alternatives, projects may be less expensive than projected utility pricing.



A primary investment may be needed to further research the feasibility of alternative energy generation on City properties. It is not known the 'break-even' point yet—that is, the amount above which it makes sense to invest in Westminster properties for energy generation.

Staff is preparing a Request For Proposals (RFP) to complete this investigation. The first goal of this RFP will be to attract qualified consultants to determine the feasibility of renewable and other energy resources within all City buildings or lands. The second goal will be to analyze various financial mechanisms available to the City while minimizing investments required of the City.





LED Streetlights

Staff is evaluating the possibility transitioning some or all of the street lights to more efficient technologies, in an effort to reduce energy consumption and better manage



the nearly \$2.5 million a year spent on energy and maintenance for the operation of street lights in the City. LED technology is of particular interest.

Currently, the City has approximately 8,000 street lights; most of these are believed to be owned by Xcel Energy. These lights are primarily 150 – 200 watt high-pressure sodium bulbs, which require replacement every 2-3 years. LED lighting technology would use approximately 40% less energy and require replacement of the lights only every 10 years. This has the potential to significantly reduce the current costs of energy and maintenance for street lighting.



A consultant has been hired to provide the City with information on what lighting would best serve the needs of residents in regards to safety and efficiency. The consultant will provide the City with general lighting design standards for new and existing developments. This is another area where the City may realize savings—reduced lighting safely in areas currently over-lit in current or future developments.

Staff have been working with the two utility providers on the establishment of energy only and metered street light rates. Staff have also pursued test sites for LED lighting installations and are researching the possible acquisition of the City's street lighting network where practical.

Biodiesel

blend).

Biodiesel has not been used in City vehicles vet, but may be an option in the future. Consideration regarding the infrastructure required and fuel costs are under way.

GPS Tracking

Biodiesel is a blend of diesel oil and GPS is a consideration for future fuel vegetable oil, much like the E-10 blended management. Today's web-based monitoring gasoline. It requires no changes to engines tools tie into a vehicle's computer system and or storage tanks and can be implemented at can control, track, and manage fuel and vehicle any time. Blends are as low as a B2 (2 % maintenance costs based on on-board live data blend) up to a B20 (20% vegetable oil streaming. Surrounding cities are exploring and using this data to track vehicle operation habits, idle time and vehicle use. Although not currently planned in Westminster, a GPS system could support enforcement of energy saving policies and guidelines already established through City policy.

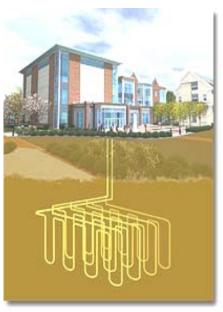


Geothermal heating and cooling at City Hall

One half of the cooling system for City Hall works to remove the heat from the building. The other half moves air around to keep the building cool. The heat removing system needs to be replaced because it will no longer meet modern plumbing codes. After calculating the costs to build and maintain alternative designs, Staff has concluded that a geothermal option is the best choice.

Geothermal (ground heat exchange) systems use natural cooling available deep inside the ground to maintain comfortable conditions inside buildings. This same system will help reduce heating bills and deliver warmer water to the system in the winter. The heat expelled into the ground over the summer is then reabsorbed in the winter.

Currently, Staff are working with engineers to design this system. Once in place, the expected utility and maintenance costs will be about \$200,000 less per year than the typical system for a building as big as City Hall.



LED Lighting at City Hall and Public Safety Center Parking Lots

The tall lights in the parking lots of City Hall and the Public Safety Center each burn a 400 watt light bulb. The three foot concrete illuminated bollards also in the parking lot use 175 watt lamps. Federal money, previously received through the Energy Efficiency and Conservation Block grant, was used to replace these parking lot lights and the illuminated concrete bollards. The new LED lights will use about 100 watts and will reduce the cost for the pole lights by 75%. The thirty-two pedestrian bollards will drop from 175 watts to about 70 watts.

Ultimately, these new lights will create better visual lighting conditions because of the color of the light and less shadowy conditions. They will also have the ability to dim at scheduled times during the middle of the night when the parking lot is not being used. Using half the energy at least part of the time will save even more in energy and dollars.





Before and after photos of a Wal-Mart parking lot.

Monitoring the cost savings of this demonstration project will better our understanding of the benefits of this new technology in street lighting.





More Hybrid Electric Vehicle Purchases

Hybrid Electric Vehicles (HEVs) are currently the most fuel-efficient vehicles on the market. They get more miles to the gallon and require no infrastructure changes because they are fueled with gasoline. The City operates nine HEVs and is expected to purchase four additional in 2012. Below is a comparison of mileage of current HEVs to the vehicles they replaced. In every case, the miles per gallon of the hybrid is nearly twice that of the replaced vehicle.

Equipment Description	Miles Traveled	Gallons of Gas	To	otal Cost	MPG
2010 Toyota PRIUS	12,500	288.50	\$	911.37	43.33
1996 Chevrolet CORSICA	69,149	3,706.50	\$	7,025.75	18.66
2009 Toyota PRIUS	20,083	526.70	\$	1,644.90	38.13
1996 Chevrolet CORSICA	64,648	3,199.30	\$	5,642.47	20.21
2010 Toyota PRIUS	10,599	211.40	\$	666.54	50.14
1999 Chevrolet S10	82,814	4,665.80	\$	8,554.70	17.75
2008 Toyota PRIUS	14,501	374.70	\$	1,155.13	38.70
1994 Chevrolet CORSICA	38,220	1,614.00	\$	2,489.77	23.68
2009 Toyota PRIUS	18,555	398.60	\$	1,247.16	46.55
1996 Chevrolet LUMMINA	43,532	1,851.70	\$	3,110.50	23.51
2010 Toyota PRIUS	4,422	108.30	\$	342.76	40.83
1996 Chevrolet LUMMINA	32,755	1,347.80	\$	2,443.49	24.30

Fuel costs for	\$ 36,529	per year
existing fleet		
Fuel costs for	\$ 6,438	per year
hybrids		

Engine Idling Policy

City employees play an important role in improving air quality, reducing fuel consumption, and reducing vehicle wear by limiting the amount of time vehicle engines are allowed to idle. Turning off and starting an engine uses less fuel than letting the engine run for thirty seconds. Modern vehicles need only a maximum of 30 seconds of idle at start up. City vehicle engine wear is greater from prolonged idle than from normal operation.

Idling means the engine is running while the vehicle is stationary or the piece of off-road equipment is not performing work. Except as noted, this Administrative policy applies to employees who operate all vehicles and equipment.



WESTMINSTER

Water Utility: Next Three Years

While much of the efficiency gains through installation of new equipment has already occurred, Staff will focus on refining operational processes, optimizing pump selection, improving timing of filling water tanks (24 hour period of demand response rather than hour by hour), and smoothing the operations of the treatment and distribution systems to avoid large spikes in energy demand.

Looking forward, City staff will continue to be the greatest asset. As a water and wastewater utility, the primary goal is to meet customer needs 100% of the time. Staff provide the skills and experience to efficiently respond to changing customer demand while continuing to search for better technology to increase efficiency.



Northwest Water Treatment Facility

Upcoming water infrastructure improvements

In 2012, the Utilities Planning and Engineering Division is developing a long term work plan focused on rehabilitating existing facilities rather than building new. This will allow the City to conserve energy by using less high embedded energy construction materials via renovation.

Westminster is looking at innovative solutions to dealing with increased wastewater flows in portions of the City. Rather than building a new wastewater pumping station, the staff is pursuing the use of existing infrastructure to solve needs. The lifecycle cost analysis on this project has revealed that a 24" pipe interconnect may be the appropriate solution. Further evaluation is underway.



Both Heritage and Legacy Ridge golf courses currently use reclaimed water to irrigate courses.

<u>Conclusion</u> Hopefully, the information and stories captured here convey what we believe to be true — the City of Westminster has an energy management strategy that is widespread, deeply affecting, and long term. Continued stewardship, practiced at every level, creates consistently increasing benefits to the community, while reducing the costs for maintaining those assets. Staff continues to work to keep costs for City services and amenities low. The continued support and focus on energy reduction demonstrates real and consistent evidence of that stewardship.



Staff Report

Information Only Staff Report August 27, 2012

SUBJECT: Name for the Westminster Station Transit Oriented Development Area

PREPARED BY: John Carpenter, Director of Community Development

Summary Statement

- Staff and City Council have been working for several years to develop a redevelopment plan for the area north of the proposed Westminster Station along the Northwest Rail Line. The plan proposes an intense mixed use development near the station served by several new streets including a diagonal street parallel to the BNSF railroad tracks.
- In June 2012, the City and the Regional Transportation District (RTD) executed an intergovernmental agreement (IGA) to facilitate the construction of a transit oriented development (TOD) in the area.
- Commuter rail service to Westminster Station will commence in early 2016.
- With the pending opening of the station and potential nearby development, staff is getting inquiries about the name of the larger TOD area (roughly bounded by 72nd Avenue, Federal Boulevard, Lowell Boulevard and the BNSF Railroad).
- Staff recommends officially designating this larger TOD area as "Westminster Station" to remain consistent with the station name. Using the same name for the TOD and station will reinforce the identity of the area and avoid confusion if separate names were used.
- To further assist with "branding" this area as "Westminster Station" staff recommends naming the diagonal street, parallel to the BNSF tracks as "Westminster Station Drive" (between Federal Boulevard and Knox Court).

Staff Report – Name for the Westminster Station Transit Oriented Development Area November 5, 2012
Page 2

Background Information

Since the FasTracks project was approved in 2004 by voters, City Council and Staff have envisioned that the proposed commuter rail station would serve as a catalyst for the redevelopment of the surrounding area generally bounded by 72nd Avenue, Federal Boulevard, Lowell Boulevard and the BNSF Railroad Tracks. The station will be located at approximately 70th Avenue and Irving Street.

Plans have been developed to transform the area north of the station into a compact mixed use transit oriented development (TOD). The plan proposes several new streets (especially south of 71st Avenue) to serve the station and surrounding new development.

When RTD staff proposed the FasTracks project, they referred to what is now Westminster Station as the "71st Avenue/Lowell Boulevard Station" and subsequently as "South Westminster." City staff discussed with Council the station naming options and Council concluded that the preferred station name was "Westminster Station."

The City conveyed the City's preferred name of the station to RTD staff. Eventually RTD staff and the RTD board supported the City's proposal and changed the station's name to "Westminster Station."

The increased publicity resulting from the signing of the RTD IGA as well as from the recent ground breaking has lead to inquiries to City staff from people about the name of the TOD. Staff believes that there is value with the City selecting a name for the TOD area rather than leaving that to chance.

Unlike earlier discussion of possible names for the TOD, the name for the station is now determined. Staff believes that it makes sense to also use Westminster Station as the name of the TOD.

The proposed street network for the TOD area includes a new street parallel to the north side of the BNSF railroad between Federal Boulevard and Knox Court. The street will pass directly by the station entrance. Since the street does not follow a north-south or east-west alignment, it is not recommended that the street be named per the Denver Street Guide naming protocol. This could be a plus and enable the City to select a new name customized for the area. Staff recommends that a name be selected for the diagonal street that makes reference to the station's name. Staff recommends using the name Westminster Station Drive.

Respectfully submitted,

J. Brent McFall City Manager