STAFF REPORT
April 8, 2010

No. 10CA009 - Amendment to the Comprehensive Plan to adopt the Red Dale Drainage Basin Design Plan **ITEM 7**

GENERAL INFORMATION:

APPLICANT/AGENT	City of Rapid City
REQUEST	**No. 10CA009 - Amendment to the Comprehensive Plan to adopt the Red Dale Drainage Basin Design Plan**
EXISTING LEGAL DESCRIPTION	Red Dale Drainage Basin located in all or portions of Sections 3, 4, 5, 6, 8 and 9 and 10, T1N, R7E, BHM, Pennington County, South Dakota
PARCEL ACREAGE	Approximately 858 Acres
LOCATION	North of Jackson Boulevard and west of 32nd Street extending into the NE1/4 of Section 6, T1N, R7E
DATE OF APPLICATION	3/12/2010
REVIEWED BY	Patsy Horton / Ted Johnson

RECOMMENDATION:

Staff recommends that the Amendment to the Comprehensive Plan to adopt the Red Dale Drainage Basin Design Plan be approved.

GENERAL COMMENTS: The Public Works Department has submitted this Amendment to the Comprehensive Plan to adopt the Red Dale Drainage Basin Design Plan, updating the original Basin Study completed in 1992. The Red Dale Drainage Basin Design Plan Amendment includes approximately 858 acres located north of Jackson Boulevard, west of Thirty-Second Street, extending west approximately two and one-half miles. The purpose of the design plan is to define existing and future stormwater related issues in the study area and to present a conceptual design plan for control of the problems.

In 1989, the City of Rapid City adopted the Rapid City Drainage Criteria Manual to provide policies, design procedures and techniques to be used to mitigate the impact from uncontrolled stormwater runoff on urbanized environments and was the basis for planning and designing all stormwater or drainage-related facilities within the City of Rapid City and its extraterritorial jurisdiction. This Manual identified the three options for estimating and modeling stormwater runoff:

1) The Rational Method, for development under 160 acres;
2) The Colorado Urban Hydrograph Procedure, 1982 version, for development over 160 acres; and
3) The United States Environmental Protection Agency's 1970 version of the Stormwater Management Model for stormwater hydraulic routing.

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In 2008, the City of Rapid City and representatives of the development community completed the *Infrastructure Design Criteria, 2008 Edition,* a comprehensive update of all the public infrastructure criteria used to design and construct all public improvements associated with developing, redeveloping and subdividing lands, including criteria for all drainage, right-of-way, transportation and utility services design within the City of Rapid City and the three-mile platting jurisdiction. This Edition identifies several criteria for calculating and modeling stormwater runoff:

1) The Rational Method, for development under 160 acres;
2) For drainage basins with an existing Drainage Basin Plan, the designer may use the stormwater runoff volumes contained in the plan, use the Colorado Unit Hydrograph Procedure for modeling specific elements or properties within the basin, or use the Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) for determination of runoff volumes within the basin and for modeling of elements or properties within the basin;
3) For drainage basins without an existing Drainage Basin Plan, the designer must use the Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) for determination of runoff volumes within the basin and for modeling of elements or properties within the basin;
4) For FEMA submittals, all calculations must follow FEMA guidelines; and
5) All modeling must be conducted by a qualified and experienced hydrologist or engineer.

Public Works Department staff has indicated that the Red Dale Drainage Basin Design Plan Amendment was developed by a consultant retained by the City of Rapid City in order to update the Red Dale Drainage Basin Plan's modeling methodology in accordance with the *Infrastructure Design Criteria* developed in 2008, to reflect revised hydraulic conditions and to incorporate federally mandated stormwater quality improvements.

The main stormwater quality facility identified in the Plan Amendment will be located between the end of Cottonwood Street and Rapid Creek in the current location of Hartland Court. The propose facility will treat a significant amount of stormwater from the Red Dale Basin prior to it reaching Rapid Creek. The improvements associated with the Plan Amendment will improve capacity and operation of existing storm drainage facilities within the Drainage Basin as well as address the existing water pools, stagnant water, excessive vegetation, slope failures, poor access and water quality problems currently experienced throughout the drainage channels within the Drainage Basin.

In 1992, the Basin Plan identified improvements with an estimated cost of $1.4 million, including 25% for engineering, administration and construction contingency. On March 16, 1992, the City Council approved a drainage basin fee of $1,750 per acre for the Red Dale Drainage Basin. The total cost for the improvements identified within the Red Dale Drainage Basin Design Plan Amendment is approximately $5.2 million for the 858 acre Red Dale Drainage Basin, with estimated drainage basin fees of $6,050 per acre, including 35% engineering, administration and construction contingency.

STAFF REVIEW: The adopted Comprehensive Plan is a framework with the general purpose of

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guiding and accomplishing a coordinated, adjusted, and harmonious development of Rapid City, which will, in accordance with existing and future needs, best promote health, safety, morals, order, convenience, prosperity or the general welfare, as well as efficiency and economy in the process of development. The plan is intended to guide the orderly growth of the community. In order for the plans to remain viable and to keep pace with a changing market place, periodic adjustments to reflect changing conditions will be required.

Staff has reviewed the Comprehensive Plan Amendment to adopt the Red Dale Drainage Basin Design Plan Amendment and has reviewed this proposed Comprehensive Plan Amendment for conformance with the six criteria for review of Comprehensive Plan Amendments established in Section 2.60.160(D). A summary of the findings are outlined below:

1. *Whether the proposed change is consistent with the policies and overall intent of the comprehensive plan.*

   One of the goals of the Sewer and Water Plan Element of the adopted Comprehensive Plan is to ensure the provision of a safe and satisfactory water supply and the adequate disposal of wastes not only for health and environmental reasons, but to provide for utilities to influence the direction and rate of land development. The Red Dale Drainage Basin Design Plan Amendment will improve capacity and operation of existing storm drainage facilities within the Drainage Basin as well as address the existing water pools, stagnant water, excessive vegetation, slope failures, poor access and water quality problems currently experienced throughout the drainage channels within the Drainage Basin. The proposed Amendment is consistent with the Sewer and Water Plan Element by identifying a plan to mitigate potential health and environmental concerns from the effects of water pools and stagnant water within Basin.

2. *Whether the proposed change is warranted by changed conditions within the neighborhood surrounding and including the subject property.*

   The Red Dale Drainage Basin Plan was originally adopted in 1992. The proposed Basin Plan Amendment reflects updated stormwater calculation methodologies based on the 2008 Infrastructure Development Criteria, includes revised hydraulic conditions and incorporates federally-mandated stormwater quality improvements. These new criteria constitute a substantially changed condition.

3. *Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land.*

   The Red Dale Drainage Basin includes approximately 858 acres located north of Jackson Boulevard, west of Thirty-Second Street, extending west approximately two and one-half miles outside the existing City boundary. The properties include existing residential land uses and areas available for future development. The proposed Plan Amendment will improve capacity and operation of existing storm drainage facilities within the Drainage Basin as well as address the existing water pools, stagnant water,

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excessive vegetation, slope failures, poor access and water quality problems currently experienced throughout the drainage channels within the Drainage Basin. These proposed improvements will guide stormwater improvements within the Drainage Basin to enhance the existing and proposed uses of the surrounding properties.

4. *Whether and the extent to which the proposed amendment would adversely affect the environment, services, facilities, and transportation.*

   The Red Dale Drainage Basin Design Plan Amendment will provide the planning tools when developing the drainage improvement construction plans to improve capacity of the existing drainage channels. Therefore, the proposed amendment would not appear to result in any significant adverse affects on the environment, services, facilities or transportation network.

5. *Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern.*

   The proposed amendment will provide the planning tools when developing the drainage improvement construction plans, thus encouraging the preservation and proper utilization of environmental resources by preventing development in areas that are environmentally unsuitable for buildings and by protecting the proposed detention facility expansion from incompatible development. Amending the Comprehensive Plan by adopting the Red Dale Drainage Basin Plan Amendment will help improve drainage facilities, resulting in a logical and orderly development pattern.

6. *Whether and the extent to which the proposed amendment adversely affects any other part of the city, or creates any direct or indirect adverse effects.*

   The Red Dale Drainage Basin Design Plan Amendment presents a conceptual design plan for the control of stormwater related problems. Staff has not identified any significant adverse affects that the Comprehensive Plan Amendment would have on the surrounding area or on the City.

Staff is recommending that the Comprehensive Plan Amendment to adopt the Red Dale Drainage Basin Design Plan Amendment be approved.