MINUTES
INFRASTRUCTURE REVIEW ADVISORY BOARD
OAK VIEW LIBRARY
May 4, 2016 8:30 a.m.

Members and Alternates Present (Bold text includes voting member)
Chad Huwe, Jeff Schmitt, Joel McDowell, Scott Hofer, Phil Gundvaldson, Craig Lauritzen, **Tim Galbraith, Chris Fischer**

Members and Alternates Absent
Mark Cotter, Mike Cooper, Jason Snyders, Bill Kemmis, Mark Anderson

Others Present
Heath Hoftiezer, Todd Anawski, Jeff DesLauriers, Joshua Peterson, Shannon VerHey, Myron Adams, Cynthia Monnin, Denise Hanzlik, Eric Willadsen, Carl Carlson, Diane Best

Approval of Minutes of Last Meeting
A motion was made by Hofer and seconded by Galbraith to approve the April 6, 2016 meeting minutes. Roll Call: Yeses – Huwe, Schmitt, McDowell, Hofer, Gundvaldson, Galbraith, Fischer. Noes - none. Motion passed 7-0.

Announcements:
A special meeting will be held on May 18, 2016 to discuss the proposed amendments to the Flood Plain Ordinance.

Business

Proposed Revisions to the *General Conditions for Public Improvements*

Joshua Peterson, Principal Engineer for Construction and Project Management, distributed a summary memorandum and led the discussion. This document outlines the performance requirements for a contractor when they complete a capital project. The requirements pertain to definitions and terms, bidding requirements and conditions, award and execution of contract, scope of work, control of work, control of material, legal specifications and responsibility to the public, prosecution and progress, measurement and payment, claims and disputes, and miscellaneous. The last revision was in 2013.

These revisions will presented to the City Council Land Use Committee in June and the City Council in July.

Secondary Access Update

This is a continuation of the discussion regarding secondary access into a subdivision. This will be discussed at a future meeting.

Adjournment
The next IRAB meeting is scheduled for May 18, 2016 at 8:30 a.m., at the Oak View Library. A motion was made by Gundvaldson and seconded by Hofer to adjourn. Roll Call: Yeses - Huwe, Schmitt, McDowell, Hofer, Gundvaldson, Galbraith, Fischer. Noes - none. Motion passed 7-0.

MINUTES
INFRASTRUCTURE REVIEW ADVISORY BOARD
OAK VIEW LIBRARY
May 18, 2016 8:30 a.m.

Members and Alternates Present (Bold text includes voting member)
Chad Huwe, Mike Cooper, Jeff Schmitt, **Joel McDowell, Jason Snyders, Phil Gundvaldson, Tim Galbraith, Mark Anderson**, Chris Fisher

Members and Alternates Absent
Mark Cotter, Scott Hofer, Craig Lauritzen, Bill Kemmis

Others Present
Andy Berg, Myron Adam, Lance Weatherly, Joe Stonesifer, Todd Anawaski, Joel Ingle, Cynthia Monnin, Kent Johnson, Michal McMahan, Jesse Livingson, Steve Van Buskirk, Ryan Jansa, Preston Mettler, Eric Willadsen, Kim Buell, Todd Price

Business

Proposed Revisions to Chapter 156: Floodplain Management
Jeff Schmitt, Planning & Building Services, presented a Power Point, distributed handouts (*Sioux Falls Floodplain Ordinance Amendment* Memorandum, draft ordinance with proposed revisions, and draft Chapter 156: Floodplain Management with proposed revisions), and led the discussion. The City of Sioux Falls is in the process of adopting the revised flood insurance rate maps adjacent to the City's levee system. A key step in the process is to update the Floodplain Management ordinance.

Once the City receives the Letter of Final Determination (LFD) from FEMA and the ordinance is updated, building permits can be issued (flood insurance will be required). The proposed revisions to the ordinance will be presented at a June City Council Informational meeting and the City Council will be asked to act on the proposed revisions in July. Six months from the date of the LFD, the floodplain insurance requirement will be removed.

Lance Weatherly, Principal Drainage Engineer, distributed proposed revisions to Chapter 11 of the Engineering Design Standards regarding Hydraulic and Hydrologic Analysis Standards. Lance and Andy Berg will be meeting with Engineering Consultants to discuss these revisions before the June IRAB meeting and these proposed revisions will be discussed again at the June IRAB meeting.

Adjournment
The next IRAB meeting is scheduled for June 1, 2016 at 8:30 a.m., at the Oak View Library. A motion was made by Huwe and seconded by McDowell to adjourn. Roll Call: Yeses – Huwe, Cooper, McDowell, Snyders, Gundvaldson, Galbraith, Anderson. Noes none. Motion passed 7-0.

Maureen Buller
Maureen Buller
Secretary

Chad J Huwe
Chad Huwe, P.E.
City Engineer

EDS Chapter 11 proposed

11.1.9 HYDRAULIC AND HYDROLOGIC ANALYSES STANDARDS

The purpose of this standard is define hydraulic and hydrologic (H&H) analyses used to evaluate proposed development for potential impacts to stormwater storage and conveyance in H&H Analysis Areas. H&H Analyses will generally be completed by the City Engineer utilizing Developer provided existing and proposed site digital elevation models for purposes of determining impacts.

All H&H analyses of proposed Development are intended to be reviewed and approved by the City Engineer in approximately ten business days from receipt of all Developer required information and an H&H Analysis of existing conditions is complete. If H&H Analysis is required for an area which existing conditions are not yet modeled, the City will endeavor to expeditiously complete the H&H Analysis, alternatively the Developer may propose alternative methods to satisfy H&H Analysis requirements.

H&H Analyses shall be completed using H&H software approved by the City Engineer with final report including software file/s exported to a City approved compatible format for all hydraulic conditions.

1) H&H Analysis Areas
   a) Special Flood Hazard Areas (SFHA)
   b) TBD
2) Conveyance
   3) Hydrologic analysis
      a) Rainfall data to utilize:
         (1) Engineering Design Standards
         (2) NOAA Atlas 14
         (3) Or approved method
      b) Duration
         (1) SCS Type II Distribution (24 hr)
         (2) Or approved method
         ii) In developing watersheds, the H&H analyses shall reflect anticipated runoff from all projected future development based on current zoning and best available information.
   4) Hydraulic modeling
      a) determination of the required limits of the hydraulic model shall be based on detailed study information for downstream structures (dam, bridge, culvert) to determine adequate starting water surface elevation for the H&H analysis.
      b) channel sections must be surveyed.
      c) development of cross sections shall utilize the more accurate of two foot contour data or current available City LIDAR data.
      d) cross section spacing sufficient to accurately define a hydraulic profile and determine elevations at key locations such as roads, buildings, and property lines."
      e) a survey of bridge and culvert openings and the top of road is required at each road crossing.
      f) standard accepted engineering practices shall be used when assigning parameters for the base model such as flow, Manning's N values, expansion and contraction coefficients or effective flow limits. The model of existing conditions shall be calibrated to past flooding

data such as high water marks to determine the reasonableness of the model results. If no historical data is available, adequate justification shall be provided for any parameters outside standard accepted engineering practices.

g) the H&H analyses must extend past the upstream limit of the difference in the existing and proposed flood profiles in order to provide a tie-in to existing analyses. The height difference between the proposed flood profile and the existing study profiles shall be no more than 0.00 feet at the tie in point.

5) Hydraulic analysis — The following criteria shall be the basis for determining the hydraulic profile:
   a) *Reconnaissance.* The H&H Analyses Engineer of Record is responsible for the collection of all existing data with regard to flooding in the study area. This shall include a literature search of all published reports in the study area and an information search to obtain all unpublished information on flooding in the immediate and adjacent areas from federal, state and local units of government.
   b) *Base data.* Cross sections to be used for the hydraulic analysis may be obtained by one of several methods, including surveying or LIDAR/photogrammetry.
   c) *Previous H&H Analyses studies.* If differences exist between a study previously approved by the City Engineer and calculated hydraulic profiles, the engineer shall document justification and obtain departmental approval for these differences.
   d) *Calculation of the hydraulic profile.* The hydraulic profile shall be calculated to the 0.01 foot.
   e) *Adequacy of the hydraulic model.* The following factors shall be considered by the City Engineer to determine the adequacy of the hydraulic model:
      i) Cross section spacing.
      ii) Differences in energy grade.
      iii) Methods for analyzing structure hydraulics
      iv) Lack of flow continuity.
      v) Use of gradually varied flow model.
      vi) Manning's "n" values.
      vii) Calibration of the hydraulic model with past flood events.
6) Mapping
   a) An exhibit/map of the reach analyzed shall be provided, showing all cross section locations, floodway/floodplain/major design event inundation limits based on best available data, limits of the proposed development.
   b) If any part of the proposed development is in the H&H analysis areas, the proposed site digital elevation model shall be incorporated into the existing model to analyze any impacts.
   c) Any effective and preliminary floodways/floodplains shall be shown on the map.
   d) The reach centerline of the model shall be visible on the map.
7) Storage
   a) Analyze proposed development or grading for reduction of hydraulic storage in H&H Analysis areas.
   b) Developer to provide existing site digital elevation model
   c) Developer to provide proposed site digital elevation model with sufficient information to support a H&H Analysis for purposes of determining conveyance impacts.

d) *Final report.* A comprehensive final report shall be submitted to the City Engineer: