



Lewis and Clark County Community Development and Planning

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STAFF REPORT

DATE: June 29, 2015

TO: Board of County Commissioners

FROM: Greg McNally, Planner II, Lewis and Clark County Community Development and Planning Department

RE: Request for Consideration of Fire Protection Measures for the Preliminary Approved Lot A-1A Amended of the H.W. Smith Minor Subdivision (Heron Creek, Phases I-VI)

SYNOPSIS OF REQUEST

To comply with the conditions of approval for the H.W. Smith Lot A-1A Amended a.k.a. *Heron Creek Subdivision (Phase I-VI)*, the Applicant has submitted plans for a fire suppression system to Lewis and Clark County for review. This proposed fire suppression system would serve all six phases of the subdivision. The preliminarily approved subdivision has a condition of approval for each phase which is stated as follows:

“The Applicant and the County must agree, prior to final plat approval, on fire protection measures that minimize the risk of fire and that permit the effective and efficient suppression of fires”.

GENERAL INFORMATION

APPLICANT: Ron Bartsch,
3130 Saddle Drive Suite 5,
Helena, MT 59601

ENGINEER: Ryan Casne,
P.E., Casne & Associates, Inc.
P.O. Box 1123, Helena, MT
59624

GENERAL LOCATION:

The preliminarily approved subdivision is located east of and adjacent to Eames Lane and south of and adjacent to Keir Lane. See **Figure 1**.

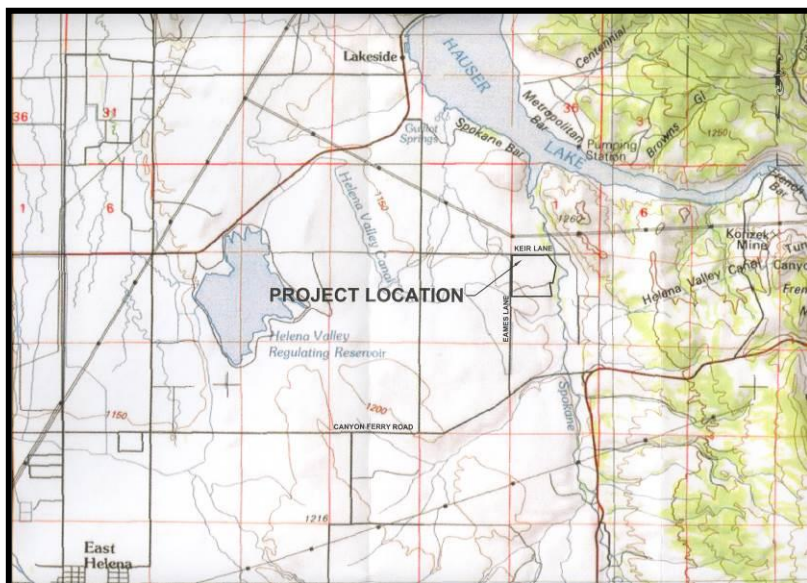


Figure 1: Vicinity Map

BACKGROUND INFORMATION

On September 18, 2007, the Lewis and Clark County Commission granted preliminary plat approval for a 70 lot subdivision (65 single-family residential lots, 1 lot for 44 condominium units, 2 lots for a park area, and 2 lots for a community wastewater treatment system to be known as Lot A-1A Amended of the H.W. Smith Minor Subdivision otherwise known as the Heron Creek Major Subdivision.

On November 6, 2008, the preliminary plat was modified to allow a split entryway internal access road design with a structure/shelter for the clustered mailbox units. On February 28, 2012, the preliminary plat was modified to add conditions related to the improvement of Eames Lane; create 44 lots, each for one single-family dwelling, on the preliminarily approved 10.89 acre lot that was previously approved for 44 condominium units; and the preliminary plat and conditions were modified to be completed in six phases. **A lot layout and phasing plan is shown in Figure 2.**

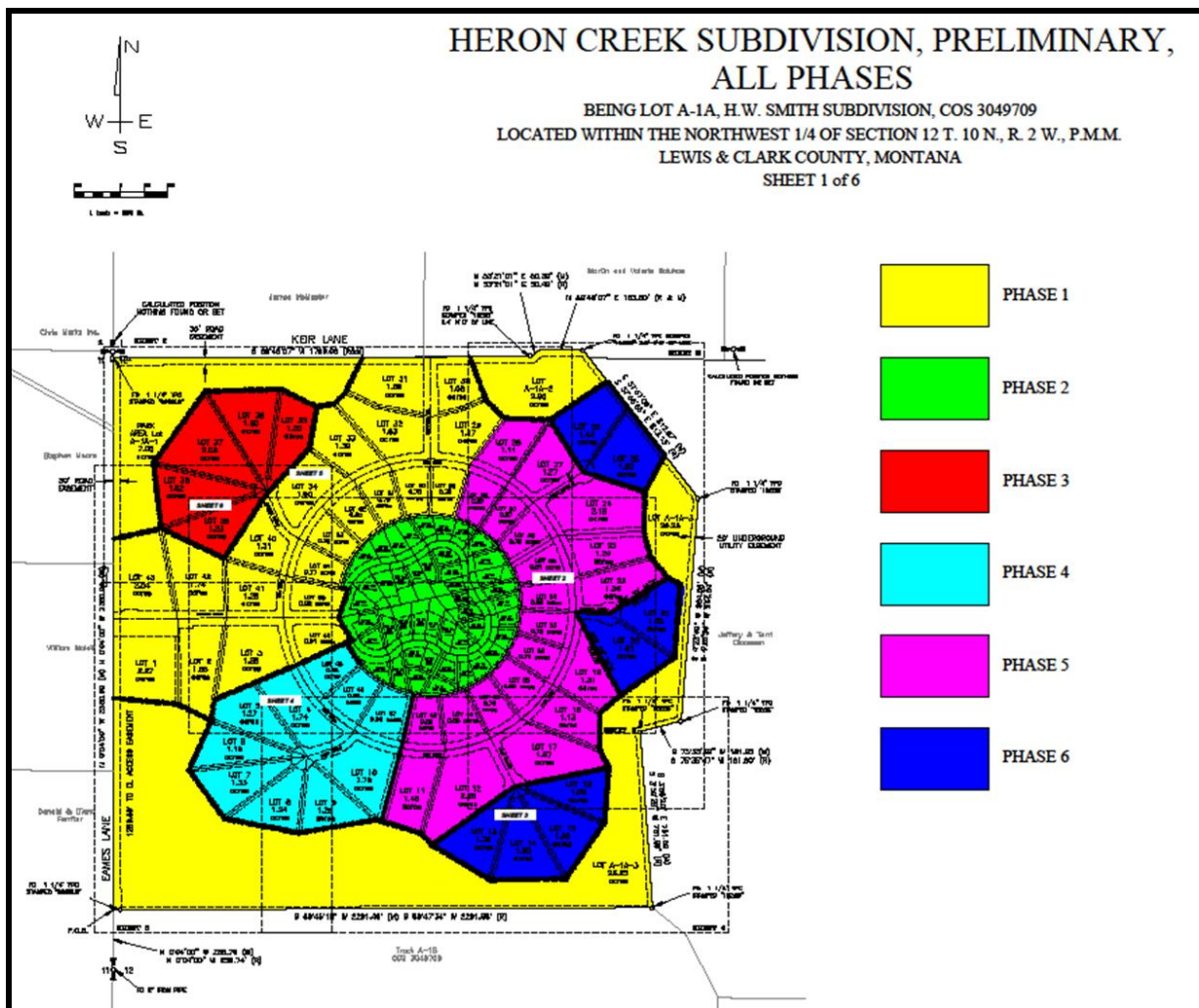


Figure 2: Current Preliminarily Approved Lot Layout and Phasing Plan

This preliminary approval has been granted three extensions. The most recent extension will expire on September 18, 2015. The Applicant has submitted a final plat application for Phases I-III which is currently under review. A **2013 aerial photograph of the property undergoing development is shown in Figure 3.**

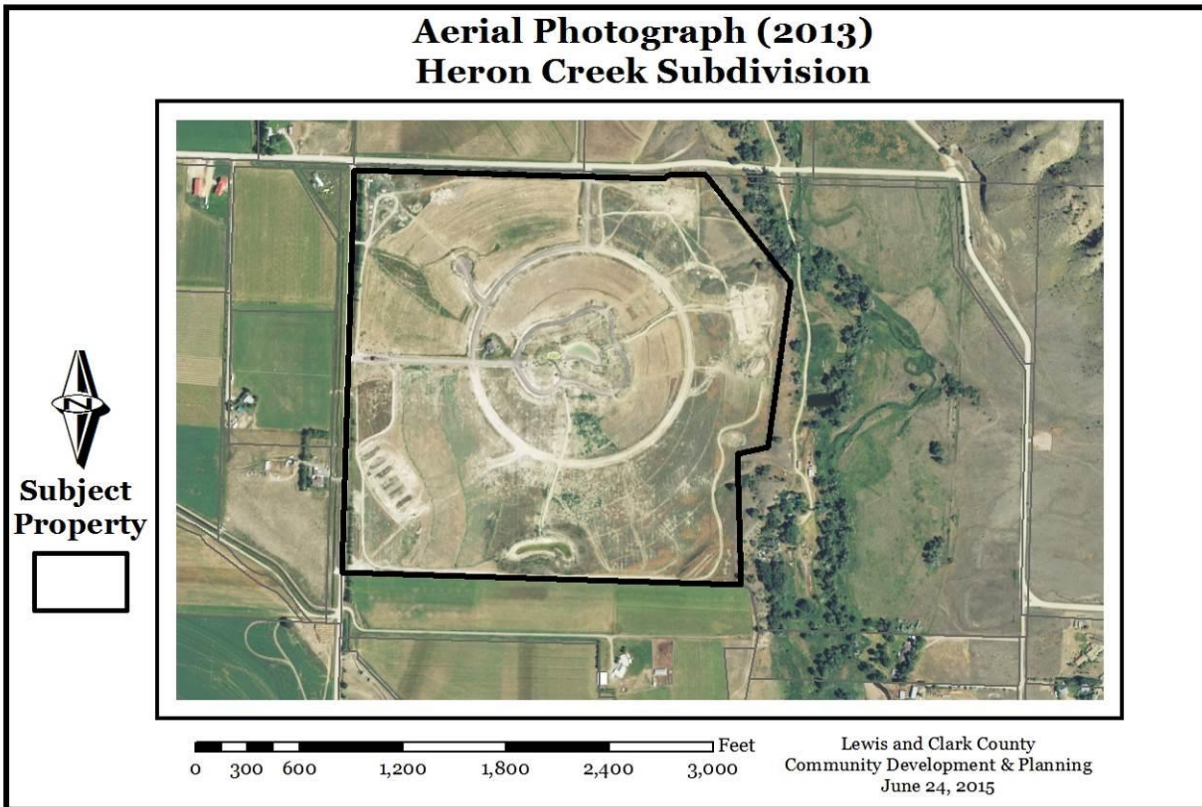


Figure 3: Aerial Photograph (2013) of Heron Creek Subdivision

FIRE PROTECTION REQUIREMENTS

At the time of preliminary approval and subsequent modifications, the following condition was applied to each phase of the subdivision:

“The Applicant and the County must agree, prior to final plat approval, on fire protection measures that minimize the risk of fire and that permit the effective and efficient suppression of fires”.

This condition was established based upon the Lewis and Clark County Subdivision Regulations (2005 Chapter XI.S) which requires that “*All subdivisions shall be planned, designed, constructed, and maintained to minimize the risk of fire and to permit the effective and efficient suppression of fires in order to protect persons, property, and forested areas. The County fire standards are located in Appendix L; see also the County road standards in Appendix K*”. The condition was further established based upon the following finding of fact approved by the County Commission:

“Lewis and Clark County has a fiduciary responsibility to ensure fire danger is mitigated. At this time an effective and efficient means to mitigate fire dangers has not been reviewed due to recent decision by Judge Sherlock of Montana First Judicial District Court, Cause No. BDV-2005-418. The Applicant and Lewis and Clark County must agree, prior to final plat approval, on fire protection measures that minimize the risk of fire and that permit the effective and efficient suppression of fires”.

PROPOSED FIRE PROTECTION MEASURES

The Applicant’s engineer, Ryan Casne, P.E., has submitted the attached engineered fire suppression plans for the subdivision. Although the plans indicate they are for Phases I-III, Mr. Casne indicated by telephone that this is an error and that the plans are for all six phases of development. The proposed fire protection measures are summarized as follows:

System Performance:

The Applicant proposes to provide a flow of 1,000 g.p.m. at a minimum of 20 p.s.i., continuously for a minimum of two hours. The system will connect to two hydrants located within 1,000 feet of each home within the Subdivision. A dry hydrant with a separate intake will be available independent of the pumping system to lend redundancy to the entire system.

To operate the system, the following components (further described in the engineered plans) will be included:

- An existing, lined, open-water pond; approximately 6 to 8 feet deep with a capacity of 200,000 gallons. The pond will contain the required volume 365 days/year regardless of ice build-up.
- A 10” PVC pipe installed level between a self cleaning intake strainer and a new wet well with a line-shaft vertical turbine pump.
- A 10” diameter self cleaning suction screen to mitigate clogging of the intake from debris.
- A 50 HP, 460v, 3 phase pump motor and pressure activated soft start controller in a heated insulated and ventilated stick built structure with a concrete foundation.
- The necessary pressure tank, transducers, valves, etc.
- A pumping system that is pressure-controlled but that could also be controlled manually from a control panel.
- New 8” diameter PVC water pipe will convey water from the pump to a connection with the existing 6” diameter distribution lines.
- A pump control panel to “exercise” the pump regularly to ensure the motor does not seize from lack of use and to clean the intake screen. In addition, a warning light will be installed to alert residents of system warnings.
- The pond will be continually re-filled by a dedicated 40 g.p.m. well when commanded by a pressure transducer located within the wet well. The refill piping will be located within a heated structure so that it can function 365 days/year.

System Maintenance and Funding:

The Applicant proposes to utilize a Home Owners Association (HOA) to maintain the fire suppression system with a funding mechanism to divert 5 percent of HOA dues to a special account to maintain a maximum balance of \$20,000.00. Required by the private covenants, the covenants will be written so that future home owners cannot remove the funding mechanism.

System Testing:

The completed system will be tested jointly by Casne & Associates and the Tri-lakes Fire Service to ensure the system performs as proposed.

Supplemental Information to the Proposed Plans:

After speaking with William Dreyer, P.E. at DOWL (peer reviewer), Mr. Casne made some changes to the fire protection measures as shown and described in the attached email communication between Mr. Dreyer and Mr. Casne on March 17, 2015.

THIRD PARTY REVIEW OF PROPOSED FIRE PROTECTION MEASURES

Review by Fire Out Consulting, PLLC:

Bryan Connelley's attached review considered the National Fire Protection Association *Uniform Fire Code* and Standard 1142 – *Standard on Water Supplies for Suburban and Rural Fire Fighting*. In his opinion, the proposed fire protection measures meet the intent of the Fire Code in both delivery and duration of the water supply. He notes that the proposal provides all items of design and maintenance that would be standard for this application, including performance testing criteria. Mr. Connelley further concludes "that the proposed 'central fire protection system with hydrants' does appear to be in compliance with the 'effective and efficient' language found in the condition of approval."

Mr. Connelley does, however, include a recommendation in his review that the connections from the draft hydrant and the recirculation line be standard fire service connections that are reviewed and approved by the Tri-Lakes Fire Department.

Review by DOWL:

William Dreyer, P.E. with DOWL reviewed the following elements of the proposed fire protection measures:

- Fire pond volume requirements;
- Pond freezing thickness and sediment depth requirements;
- Pump sizing requirements; and
- Draft hydrant requirements.

Mr. Dreyer concluded that plans and supplemental information submitted "have been found to be appropriate and adequate to supply a sufficient and reliable fire protection water facility for the proposed subdivision". Mr. Dreyer's review is attached.

COMMENT REQUESTS

Comments were requested from Bob Drake, Fire Chief of the Tri-Lakes Volunteer Fire Department and Northwestern Energy. Northwestern Energy had no comments. Comments from Bob Drake are attached.

Mr. Drake indicates that the open water storage concept's reliability is as high as it reasonably can be and he also recognizes the proposed funding mechanism for the HOA to own and maintain the system. Nonetheless, the density of the center of the subdivision (44 lots on 10.89 acres) continues to be a concern. Mr. Drake, in his comments, states "We cannot protect the center of the subdivision given our current capabilities. The risk of fire spreading from house to house in the center oval is too great and we CANNOT [emphasis his] say we can protect them when we believe we cannot."

KEY ISSUES

Maintenance:

The Applicant proposes to utilize an HOA and private covenants to maintain the fire suppression system. However the current conditions of approval for this subdivision require the fire protection improvements to be included in a Rural Improvement District (RID) to ensure maintenance is accounted for. To be included in an RID, the fire suppression system must be publically owned. Bob Drake has previously vocalized concerns to Community Development and Planning Staff about the liability, complexity, and cost of insurance to own and maintain an open water fire suppression storage and delivery system.

Fire Safety in Phase II of the Subdivision:

Phase II of the subdivision is the most dense area of the preliminarily approved subdivision. Phase II will include 44 single-family dwelling units on 10.89 acres, a 60-foot wide public access and utility easement, utility easements and setbacks, well and well line easements, and the proposed fire protection system. Mr. Drake, in his comments, states "We cannot protect the center of the subdivision given our current capabilities. The risk of fire spreading from house to house in the center oval is too great and we CANNOT [emphasis his] say we can protect them when we believe we cannot."

COMMISSION ACTION

The County Commission should consider all available information to establish findings of fact and a conclusion to agree or disagree that the proposed fire suppression system will minimize the risk of fire and permit the effective and efficient suppression of fires. Draft findings of fact have been prepared.

If the Commission agrees that the proposed fire suppression system will minimize the risk of fire and permit the effective and efficient suppression of fires, the Commission should consider documenting the agreement and have it signed by both parties.

A draft Fire Protection Agreement has been prepared and is attached.

**REQUEST FOR CONSIDERATION OF FIRE PROTECTION MEASURES FOR THE
PRELIMINARY APPROVED LOT A-1A AMENDED OF THE H.W. SMITH MINOR
SUBDIVISION
(HERON CREEK, PHASES I-VI)**

DRAFT FINDINGS OF FACT

July 2, 2015

On Thursday, July 2, 2015, the Lewis and Clark County Commission held a public meeting regarding a request for consideration of fire protection measures for the preliminary approved Lot A-1A Amended of the H.W. Smith Minor Subdivision (Heron Creek, Phases I-VI) located in the northwest 1/4 of Section 12 Township 10 North, Range 02 West, P.M.M., Lewis and Clark County, Montana.

The Commission considered the proposed fire suppression plans and supplements, the staff report and its attachments and related information, and any additional information presented at the meeting.

FINDINGS OF FACT:

1. On September 18, 2007, the Lewis and Clark County Commission granted preliminary plat approval for a 70 lot subdivision (65 single-family residential lots, 1 lot for 44 condominium units, 2 lots for a park area, and 2 lots for a community wastewater treatment system to be known as Lot A-1A Amended of the H.W. Smith Minor Subdivision otherwise known as the Heron Creek Major Subdivision. (*Subdivision approval letter dated September 18, 2007*)
2. On November 6, 2008, the preliminary plat was modified to allow a split entryway internal access road design with a structure/shelter for the clustered mailbox units. (*Modification approval letter dated November 17, 2008*)
3. On February 28, 2012, the preliminary plat was modified to add conditions related to the improvement of Eames Lane; create 44 lots, each for one single-family dwelling, on the preliminarily approved 10.89 acre lot that was previously approved for 44 condominium units; and the preliminary plat and conditions were modified to be completed in six phases. (*Modification approval letter dated May 14, 2012*)
4. At the time of preliminary approval and subsequent modifications, a condition of approval was applied to each phase of the subdivision (condition Nos. 9 (Phase I), 7 (Phase II), 7 (Phase III), 7 (Phase IV), 7 (Phase V), and 7 (Phase VI)) which stated “The Applicant and the County must agree, prior to final plat approval, on fire protection measures that minimize the risk of fire and that permit the effective and efficient suppression of fires”. (*Subdivision approval letter dated September 18, 2007 and Modification approval letter dated May 14, 2012*)
5. These conditions were established based upon the 2005 Lewis and Clark County Subdivision Regulations, Chapter XI.S. and a finding of fact which stated “Lewis and Clark County has a fiduciary responsibility to ensure fire danger is mitigated. At this time an effective and efficient means to mitigate fire dangers has not been reviewed due to recent decision by

Judge Sherlock of Montana First Judicial District Court, Cause No. BDV-2005-418. The Applicant and Lewis and Clark County must agree, prior to final plat approval, on fire protection measures that minimize the risk of fire and that permit the effective and efficient suppression of fires”. (*Subdivision approval letter dated September 18, 2007 and Modification approval letter dated May 14, 2012*)

6. The Subdivision is located within the Tri-Lakes Fire Service Area. (*Fire District layer using GIS*)
7. Engineered fire suppression plans for all phases of development have been submitted by the Applicant’s engineer, Ryan Casne, P.E. A reference in plans to Phases I-III has been identified by Mr. Casne as an error. It should say Phases I-VI. (*Engineered Fire Suppression Plans Heron Creek Subdivision, Phases I-III dated March 6, 2015 and Telephone communication between Ryan Casne and Greg McNally on June 25, 2015*)
8. The engineered fire suppression plans were supplemented by Mr. Casne after speaking with William Dreyer, P.E. with DOWL. (*Email Communication between Ryan Casne and William Dreyer dated March 17, 2015*)
9. The engineered fire suppression plans and supplementations detail the components needed to operate a system that can provide a flow of 1,000 g.p.m. at a minimum of 20 p.s.i., continuously for a minimum of two hours. This system will connect to two hydrants located within 1,000 feet of each home within the Subdivision. A dry hydrant with a separate intake will be available independent of the pumping system to lend redundancy to the entire system. (*Engineered Fire Suppression Plans Heron Creek Subdivision, Phases I-III dated March 6, 2015*)
10. The Applicant proposes to utilize a Home Owners Association (HOA) to maintain the fire suppression system with a funding mechanism to divert 5 percent of HOA dues to a special account to maintain a maximum balance of \$20,000.00. Required by the private covenants, the covenants will be written so that future home owners cannot remove the funding mechanism. The 5 percent contribution shall resume each time the account balance falls below \$20,000.00. (*Engineered Fire Suppression Plans Heron Creek Subdivision, Phases I-III dated March 6, 2015*)
11. The completed system is proposed to be tested jointly by Casne & Associates and the Tri-lakes Fire Service to ensure the system performs as proposed. (*Engineered Fire Suppression Plans Heron Creek Subdivision, Phases I-III dated March 6, 2015*)
12. Bryan Connelley with Fire Out Consulting, PLLC and William Dreyer, P.E. with DOWL provided third party reviews of the engineered fire suppression plans and supplements. (*Memorandum from Bryan Connelley dated March 27, 2015 and Memorandum from William Dreyer, P.E. dated March 24, 2015*)
13. Bryan Connelley’s review considered the National Fire Protection Association *Uniform Fire Code* and Standard 1142 – *Standard on Water Supplies for Suburban and Rural Fire Fighting*. In his opinion, the proposed fire protection measures meet the intent of the Fire Code in both delivery and duration of the water supply. He notes that the proposal provides all items of design and maintenance that would be standard for this application, including performance testing criteria. Mr. Connelley further concludes “that the proposed ‘central fire protection system with hydrants’ does appear to be in compliance with the ‘effective and

efficient' language found in the condition of approval.” (*Memorandum from Bryan Connelley dated March 27, 2015*)

14. Bryan Connelley’s review included a recommendation that the connections from the draft hydrant and the recirculation line be standard fire service connections that are reviewed and approved by the Tri-Lakes Fire Department. (*Memorandum from Bryan Connelley dated March 27, 2015*)
15. William Dreyer, P.E. with DOWL reviewed the following elements of the proposed fire protection measures: fire pond volume requirements; pond freezing thickness and sediment depth requirements; pump sizing requirements; and draft hydrant requirements. Mr. Dreyer concluded that plans and supplemental information submitted “have been found to be appropriate and adequate to supply a sufficient and reliable fire protection water facility for the proposed subdivision”. (*Memorandum from William Dreyer, P.E. dated March 24, 2015*)
16. Comments were requested from Bob Drake, Fire Chief of the Tri-Lakes Volunteer Fire Department and Northwestern Energy. (*Comment Request Letter dated June 18, 2015*)
17. Northwestern Energy had no comments on the proposal. (*Email Communication from Steve Rock with Northwestern Energy dated June 18, 2015*)
18. Tri-Lakes Fire Chief, Bob Drake, indicates that the open water storage concept’s reliability is as high as it reasonably can be and he also recognizes the proposed funding mechanism for the HOA to own and maintain the system. Nonetheless, the density of the center of the subdivision (44 lots on 10.89 acres) continues to be a concern. Mr. Drake, in his comments, states “We cannot protect the center of the subdivision given our current capabilities. The risk of fire spreading from house to house in the center oval is too great and we CANNOT [emphasis his] say we can protect them when we believe we cannot.” (*Written comments from Bob Drake dated June 23, 2015*)
19. The current conditions of approval for this subdivision (condition Nos. 17 (Phase I), 15 (Phase II), 11 (Phase III), 13 (Phase IV), 14 (Phase V), and 14 (Phase VI)) require the fire protection improvements to be included in a Rural Improvement District (RID) to ensure maintenance is accounted for. (*Modification approval letter dated May 14, 2012*)
20. To be included in an RID, the fire suppression system must be publically owned. Tri-Lakes Fire Chief Bob Drake has previously vocalized concerns to Community Development and Planning Staff about the liability, complexity, and cost of insurance to own and maintain an open water fire suppression storage and delivery system.
21. The Applicant is proposing to have a Homeowners Association (HOA) maintain the system as described in private covenants that will be filed with the final plat(s). (*Engineered Fire Suppression Plans Heron Creek Subdivision, Phases I-III dated March 6, 2015*)