COUNTY OF EL DORADO
PLANNING AND BUILDING DEPARTMENT

December 16, 2020 MINUTES

Building Industry Advisory Committee

Jerry Homme, Chairman, Member at Large *(Denny Kennedy, Alt)*
Jeff Haberman, Member at Large *(James Bayless, Alt)*
Lori Burne, Member at Large *(Marilyn Ross, Alt)*
Earl McGuire, SAGE *(Garry Gates, Alt)*
Jeff Short, North State BIA *(William Fisher, Alt)*
Tom Burnette, Building Official (Technical Advisor)
Marshall Cox, El Dorado Fire (Technical Advisor)

Wednesday, December 16, 2020 1:30PM El Dorado County
2850 Fairlane Ct
Placerville, CA 95667
TAC Conference Room

The BIAC makes recommendations to the Board of Supervisors and Development Services Division regarding code interpretations, inspections, procedures, new construction techniques, product review, new codes, revised fees, and other items of industry concern (Resolution 164-2010)

PUBLIC PARTICIPATION INSTRUCTIONS: To comply with physical distancing requirements and the stay at home order from the Governor, the physical meeting will be closed to members of the public and all public participation will be handled remotely.

To observe the live stream of the Building Industry Advisory Committee meeting go to https://zoom.us/j/99263337638. The meeting ID is 992 6333 7638. Password 770937.

If you are joining the meeting via zoom and wish to make a comment on an item, press the "raise a hand" button. If you are joining the meeting by phone (646) 558-8656, press *9 to indicate a desire to make a comment. Speakers will be limited to 3 minutes.

By participating in this meeting, you acknowledge that you are being recorded.

1:32 P.M.

CALL TO ORDER AND ROLL CALL

Meeting was called to order at 1:32pm by Chair Homme, with the following committee members present:

Present:7 - Chair Homme, Member Burne, Member McGuire, Member Short, Alternate Member Bayless, Alternate Member Ross, Alternate Member Gates.
Absent:3 - Member Haberman, Alternate Kennedy, Alternate Fisher

ADOPTION OF AGENDA

A motion was made by Member Burne, seconded by Member Short to adopt the Agenda. Votes were by roll call.

Yes: 5 - Chair Homme, Member Burne, Member McGuire, Member Short, Alternate Member Bayless

APPROVAL OF MINUTES

A motion was made by Member Burne, seconded by Member Bayless to approve the May 27, 2020 Minutes.
Votes were by roll call.

Yes: 5 - Chair Homme, Member Burne, Member McGuire, Member Short, Alternate Member Bayless

A motion was made by Member Burne, seconded by Member Short to approve the September 16, 2020 Minutes.
Votes were by roll call.

Yes: 5 - Chair Homme, Member Burne, Member McGuire, Member Short, Alternate Member Bayless

OPEN FORUM

No Public Comment

DISCUSSION ITEMS

1. Chair recommending the committee receive and file an update from the Planning Division on the permit process when approval is required prior to issuance. There are concerns that Building Permits are being issued when the plans were denied by the Promontory Architectural Review Committee (ARC).

   No action taken

2. Chair recommending the committee receive and file an update from Natalie Porter, Department of Transportation, on updates to the Transportation Impact Fees (TIF), formally known as Traffic Impaction Mitigation Fees (TIM), due to take effect February 2021.

   No action taken

3. Chair recommending the committee do the following:
   a. Discuss field inspections completed by the County's Building Inspectors;
   b. Draft a letter of commendation to Board of Supervisors and,
   c. Bring draft letter back for final approval during the next regular meeting.

   No action taken

4. Chair recommending the committee receive and file an update from Ron Phillips, El Dorado Hills Fire Department on the following:

   a. User Fee Schedule; and, 'Late Attachment(s) Distributed at the Meeting'
   b. Standard on Water Supplies for Suburban and Rural Firefighting. 'Late Attachment(s) Distributed at the Meeting'

   No action taken

5. Chair recommending the committee receive and file an update from Tom Burnette, El Dorado County Building Official on the following;

   a. Building Division Fee Resolution;
   b. Time and Material; and,
   c. Other

   No action taken

NEXT MEETING: March 17, 2021 at 1:30 p.m.

BIAC MEMBER UPDATES

None

ADJOURNMENT

Meeting adjourned at 2:50 pm by Chair Homme.

El Dorado Hills Fire Deparment
Updated Fees
Approved at November 19, 2020 Board of Directors Meeting

	Current True Cost (from Time Studies)	Current Cost Recovery Level %	2021 Cost Recovery	2021 Fees	2022 Cost Recovery	2022 Fees	2023 Cost Recovery	2023 Fees
Development Plan & Map Review Fees								
Initial Consultation and Fire Flow Requirements Letter	$220.86	58%	50%	$110.00	75%	$165.00	100%	$220.00
Subdivision, Minor (4 lots or less) (per project)	$583.17	29%	50%	$290.00	75%	$435.00	100%	$580.00
Subdivision, Major (greater than 4 lots)	$1,066.25	24%	50%	$530.00	75%	$795.00	100%	$1,065.00
Additional Fee per lot	$90.14	11%	Increased by CPI	$13.50	Increase by CPI	$13.50	Increase by CPI	$13.50
Civil Plan Review - Building[1]	$341.63	50%	50%	$170.00	75%	$255.00	100%	$340.00
Civil Plan Review - Development [1]	$583.17	29%	50%	$290.00	75%	$435.00	100%	$580.00
Development Consultation [1]	$341.63	25%	50%	$170.00	75%	$255.00	100%	$340.00
Design Waiver Review	$220.86	38%	50%	$110.00	75%	$165.00	100%	$220.00
Commercial Plan Review Fees								
New Commercial Building (per building)	$794.08	32%	50%	$395.00	75%	$595.00	100%	$790.00
Plan Review (per square foot)			Increased by CPI	$0.14	Increase by CPI	$0.14	Increase by CPI	$0.14
Re-Submittal Fee [1]	$220.86	38%	50%	$110.00	75%	$165.00	100%	$220.00
Tenant Improvement (per TI)	$552.54	31%	50%	$275.00	75%	$410.00	100%	$550.00
Plan Review (per square foot)	$0.00		Increased by CPI	$0.12	Increase by CPI	$0.12	Increase by CPI	$0.12
Re-Submittal Fee [1]	$220.86	38%	50%	$110.00	75%	$165.00	100%	$220.00
Fire Sprinkler System (per system)								
Fewer than 25 Heads	$452.45	38%	50%	$225.00	75%	$335.00	100%	$450.00
25 - 99 Heads	$573.21	44%	50%	$285.00	75%	$425.00	100%	$570.00
≥100 Heads	$693.98	49%	50%	$345.00	75%	$520.00	100%	$690.00
Additional Fee per Head if ≥ 100 heads			Increased by CPI	$1.35	Increase by CPI	$1.35	Increase by CPI	$1.35
Fire Alarm System (per system)	$462.40	37%	50%	$230.00	75%	$345.00	100%	$460.00
Additional Fee per alarm device	$90.14	2%	Increased by CPI	$2.70	Increase by CPI	$2.70	Increase by CPI	$2.70
Fixed Fire Protection System (per system)	$462.40	37%	50%	$230.00	75%	$345.00	100%	$460.00
Kitchen Hood System	$462.40	18%	50%	$230.00	75%	$345.00	100%	$460.00
Spray Booth	$462.40	18%	50%	$230.00	75%	$345.00	100%	$460.00
Medical Gas System	$703.94	12%	50%	$350.00	75%	$525.00	100%	$700.00
Hazardous Material Facility	$1,307.78	13%	50%	$650.00	75%	$980.00	100%	$1,305.00
Liquefied Petroleum Gas (per system)								
Aggregate Capacity 26 - 500 gal.	$452.45	19%	50%	$225.00	75%	$335.00	100%	$450.00
Aggregate Capacity >501-1999 gal..	$452.45	28%	50%	$225.00	75%	$335.00	100%	$450.00
Aggregate Capacity > 1999 gal.	$452.45	56%	50%	$225.00	75%	$335.00	100%	$450.00
Rack or High Pile Storage	$703.94	24%	50%	$350.00	75%	$525.00	100%	$700.00
Residential Plan Review Fees								
Residential Care Facility	$703.94	24%	50%	$350.00	75%	$525.00	100%	$700.00
Residential Set-back Reduction Letter	$341.63	50%	50%	$170.00	75%	$255.00	100%	$340.00
Residential Site Plan Review (site access, water supply, addressing, smoke/co alarms, vegetation management)	$346.61	25%	50%	$170.00	75%	$255.00	100%	$345.00
Water Tank - Rural Water System	$462.40	18%	50%	$230.00	75%	$345.00	100%	$460.00
Residential Fire Safe Plan Approval	$462.40	37%	50%	$230.00	75%	$345.00	100%	$460.00
Underground LPG Tank Installation	$341.63	37%	50%	$170.00	75%	$255.00	100%	$340.00
Fire Sprinkler System (per system)								
Fewer than 25 heads	$452.45	38%	50%	$225.00	75%	$335.00	100%	$450.00
25 - 99 Heads	$573.21	44%	50%	$285.00	75%	$425.00	100%	$570.00
≥100 Heads	$693.98	49%	50%	$345.00	75%	$520.00	100%	$690.00
Additional Fee per Head if ≥ 100 heads	$90.14	1%	Increased by CPI	$1.35	Increase by CPI	$1.35	Increase by CPI	$1.35
General Plan Review Fees								
General Plan Review [1]	$341.63	25%	50%	$170.00	75%	$255.00	100%	$340.00
Expedited Plan Review [1]	$341.63	37%	50%	$170.00	75%	$255.00	100%	$340.00
Occupancy Inspections								
Operational Permits (Per Fire Code § 105.6)	$678.29	N/A	50%	$335.00	75%	$505.00	100%	$675.00
State Mandated Inspections, including the following:								
Places of Assembly	$797.30	N/A	50%	$395.00	75%	$595.00	100%	$795.00
Public and Private Schools	$977.58	N/A	50%	$485.00	75%	$730.00	100%	$975.00
Hotel, Motel, Lodging Houses, Apartment Houses or Similar	$1,943.73	N/A	50%	$970.00	75%	$1,455.00	100%	$1,940.00
State Licensed Facilities - Fire Clearance (850 Form)	$858.56	N/A	50%	$425.00	75%	$640.00	100%	$855.00
Special Events with 50 or More People	$737.80	N/A	50%	$365.00	75%	$550.00	100%	$735.00

El Dorado Hills Fire Deparment
Updated Fees
Approved at November 19, 2020 Board of Directors Meeting

	Current True Cost (from Time Studies)	Current Cost Recovery Level %	2021 Cost Recovery	2021 Fees	2022 Cost Recovery	2022 Fees	2023 Cost Recovery	2023 Fees
Wildland Urban Interface Inspections								
Defensible Space - 2nd reinspection and each additional field inspection	$511.95	N/A	50%	$255.00	75%	$380.00	100%	$510.00
Vegetation Management Complaint - 2nd reinspection & each addtl field inspection	$421.82	N/A	50%	$210.00	75%	$315.00	100%	$420.00
Community Fire Safe Plan - 2nd reinspection and each additional field inspection	$722.86	N/A	50%	$360.00	75%	$540.00	100%	$720.00
Other Fees								
Fire Watch Services - Two Hour Minimum								
Per firefighter per hour	$0.00		Increased by CPI	$70.00	Increase by CPI	$70.00	Increase by CPI	$70.00
Per apparatus per hour	$0.00		Increased by CPI	$540.00	Increase by CPI	$540.00	Increase by CPI	$540.00
Appeals Fee Any Appeal Applic for Fire Code Board of Appeals)	$0.00		Increased by CPI	$115.00	Increase by CPI	$115.00	Increase by CPI	$115.00
Additional Site Inspections (ASI)	$180.28	47%	50%	$90.00	75%	$135.00	100%	$180.00
Referral Inspections Non-Compliant Occupancy (per inspection)	$421.82	20%	50%	$210.00	75%	$315.00	100%	$420.00
Excess Re-Inspections (per hour) (Excess is 3 or more)	$45.07	189%	50%	$20.00	75%	$30.00	100%	$45.00
Inspections outside of normal business hours (2-hour minimum) per hour	$180.28	71%	50%	$90.00	75%	$135.00	100%	$180.00
Design Review Consultation [1]	$241.54	35%	50%	$120.00	75%	$180.00	100%	$240.00
Temporary Structures (Tents, Canopies, etc.) [1]	$542.58	16%	50%	$270.00	75%	$405.00	100%	$540.00
False Alarm Fee (≥3x's per 12 mo. period at same location)	$67.60	126%	50%	$30.00	75%	$50.00	100%	$65.00
Fire Suppression & Investigation Fee								
Fee for fires or emergencies out of EDHFD Jurisdictional Sphere of Influence. Fee determined by Prevailing State OES Reimbursement Fee Schedule.								
Documentation Fees								
Incident Report (per report)	$27.00	74%	Increased by CPI	$27.00	Increase by CPI	$27.00	Increase by CPI	$27.00
Inspection Report (per report)	$27.00	74%	Increased by CPI	$27.00	Increase by CPI	$27.00	Increase by CPI	$27.00
Investigation Report (up to 5 pages)	$27.00	74%	Increased by CPI	$27.00	Increase by CPI	$27.00	Increase by CPI	$27.00
Each additional page	$5.00	80%	Increased by CPI	$5.00	Increase by CPI	$5.00	Increase by CPI	$5.00
Photograph (3x5)	$27.00	74%	Increased by CPI	$27.00	Increase by CPI	$27.00	Increase by CPI	$27.00
Photograph (8x10)	$54.00	74%	Increased by CPI	$54.00	Increase by CPI	$54.00	Increase by CPI	$54.00
Digital Photographs	$54.00	74%	Increased by CPI	$54.00	Increase by CPI	$54.00	Increase by CPI	$54.00

[1] These fees currently charge per hour, the updated fee is based on true costs of providing the service rather than a generic hourly rate.
[2] Updated fees have been rounded down to the nearest $5 increment to simplify the fee schedule.

EL DORADO COUNTY REGIONAL FIRE PROTECTION STANDARD

Water Supplies for Suburban and Rural Fire Fighting
STANDARD #D-003 EFFECTIVE - TBD

I. PURPOSE:

The purpose of this standard is to communicate the minimum level of water storage and delivery system requirements for one- and two-family dwellings that can be approved under the reduced fire flow allowance within the fire jurisdictions that adopt this standard

II. BACKGROUND:

The California Fire Code (CFC) Section 507.1 requires an approved water supply capable of providing the required fire flow for fire protection to premises upon which facilities, buildings or portions of buildings which are hereinafter constructed or moved into within the jurisdiction. The CFC Section 507.2 further explains that the water supply shall consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow. The CFC, as amended locally, requires the minimum fire flow for residential one- and two-family dwellings to be 1,000 gallons per minute for a 1-hour duration for dwellings 3,600 square feet or smaller. For dwellings 3,601 square feet or greater, the minimum fire flow is 1,000 gallons per minute for a 2-hour duration. The CFC grants the fire code official the authority to reduce the fire flow requirements for buildings in rural areas where the development of full fire flow requirements is impractical.

III. SCOPE:

This standard identifies a method of determining the minimum requirements for alternative water supplies for structural firefighting purposes in areas where the Authority Having Jurisdiction (AHJ) determines that adequate and reliable water supply systems for firefighting purposes do not otherwise exist. The CFC Section B103.3 allows the AHJ to use NFPA 1142.

IV. WHERE REQUIRED:

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. *(Structural additions may require existing water supply systems to upgrade from 2.5" to 4" systems on a case-by-case basis as determined by the AHJ.)*

EXEMPTIONS:

A. New structures & additions where El Dorado County has determined that (1) **no** permit is required for construction, or (2) is exempt.

B. New residential structures that serve the following uses: private garages, carports, sheds, and other similar "U" occupancies with a floor area of not more than 500 square feet.

C. Agricultural Buildings as defined by this standard in **Section VI**.

V. AUTHORITY CITED:

A. 2019 California Fire Code (CFC)

B. 2017 Edition NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting

C. 2018 Edition NFPA 22, Water Tanks for Private Fire Protection

D. 2016 Edition NFPA 24, Installation of Private Fire Service Mains and Their Appurtenances

E. 2013 CA Edition NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems

F. 2020 California Code of Regulations, Title 14, Fire Safe Regulations SRA

VI. DEFINITIONS:

A. Agricultural Building – A structure designed and constructed to house farm implements, hay, grain, poultry, livestock, or other horticultural products. This structure shall not be a place for human habitation or a place of employment where agricultural products are processed, treated, or packaged, nor shall it be a place used by the public *[CBC Section 202]* and as further defined by the referenced section of El Dorado County Planning and Building Department website for an Inspection Exempt Agricultural Barn.

B. AHJ – Authority Having Jurisdiction

C. Building – Any structure utilized or intended for supporting or sheltering any occupancy. *[CFC Section 202]*

D. Domestic Water Supply – Water that is used for domestic consumption, potable water, in-home use, landscaping, or livestock. *[Does not include fire sprinkler water or firefighting water supplies].*

E. Fire Flow – The flow rate of a water supply measured at 20 pounds per square inch residual pressure that is available for firefighting. *[CFC Appendix B Section B102]*

F. Fire Flow Calculation Area – The floor area, in square feet, used to determine the required fire flow. *[CFC Appendix B Section B102]*

G. Firefighting Water Supply – Water supply that is dedicated to the use of the fire department for the suppression of any type of fire.

H. Fire Sprinkler Water Supply *(Sprinkler Demand)* – NFPA 13D – Water supply required to meet the design flow rate of a residential automatic fire sprinkler system, designed and installed by a California licensed C-16 contractor, for a minimum ten-minute duration using a 2-head hydraulic calculation.

I. Water Purveyor – A public utility, a mutual water company, a government agency or special district, or other entity owning and operating a water system and holding a valid permit from the California State Department of Public Health to purvey water.

VII. PERMITS AND OTHER CODES AND STANDARDS:

A. A fire permit is required for construction of water supply systems built to these standards. Your project may be subject to additional requirements of the El Dorado County Building Department for permits and compliance with other applicable federal, state, or local codes. Plan submittal requirements are detailed in **Section IX.A** of this standard.

VIII. QUALIFICATIONS & LICENSES REQUIRED FOR INSTALLATION:

A. Any necessary work shall be performed by an experienced and responsible persons or contractors, ensuring careful workmanship and expert supervision. *[NFPA 22 Section 4.7.1 through 4.7.1.1] & [NFPA 24 Section 4.2.1]*. The AHJ recommends using licensed & bonded contractors.

IX. INSTALLATION REQUIREMENTS:

A. PLANS

1. Working plans shall be submitted for approval to the AHJ before any equipment is installed or remodeled. *[NFPA 24 Section 4.1.1]*

2. Working plans shall be drawn to an indicated scale or other approved layout of sheets on uniform size and shall include the following items that pertain to the design of the system: *[NFPA 24 Chapter 4 Section 4.1 Plans]*

    a. Name of owner
    b. Location, including street address and APN
    c. Point of compass
    d. Name and address of contractor
    e. Plan view and elevation view of access roads and driveways, structures, tank size, and tank location
    f. Size and location of all water supplies

g. Vegetation clearances around all system components shall be indicated on the plans
h. Private fire service main piping
    a. Size, schedule, length, depth, and location of piping
    b. Size, types, and locations of valves, valve indicators, regulators, meters, and valve pits
    c. Method of restraint
        i. Thrust Blocks, mechanical bolt restraints, undisturbed natural bedrock, or equivalent as approved by the AHJ.
i. Hydrants:
    a. Size and location of draft hydrants, outlets, and gate valves.
    b. Thread size and coupling adapter specifications that meet National Hose Thread Standards
    c. Method of restraint

3. Submitted plans shall include the manufacturer's installation & specification sheets, including listings for the tank and all system components.

4. Contact your local fire agency for individual submittal detail.

B. INSTALLATION TIMELINE

An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material for vertical construction arrives on the site. *[CFC Section 3312.1 & NFPA 1142 Section 7.1.2]*

Temporary water supplies that are accepted shall include: 1) Dedicated use for firefighting only, 2) are placed in a location approved by the AHJ, 3) contain a minimum of 2,500 gallons of water, 4) include a minimum of one 2.5" NH fire department connection, and 5) have unobstructed fire apparatus access to the water supply and connection at all times as approved by the AHJ.

Exemption: Non-combustible structures are exempt from the temporary water supply only.

C. WATER USE AGREEMENT

The AHJ shall enter into a water use agreement when a private water supply source is to be used to meet the requirements of this standard. *(See **Figure 3** of this standard)*

D. APPROVED WATER SUPPLIES

1. Purveyor supplied hydrant system
2. Tanks
3. NFPA 1142 Annex B Optional methods approved by the AHJ
    a. *A pool, reservoir or pond may be used as a replacement for a tank system when in compliance with NFPA 1142, **Section IX.J** (Hydrants) of this standard, and approved by the AHJ.

E. TANK MATERIALS

1. Materials shall be limited to steel, concrete, and fiberglass rein-forced plastic tanks or equivalent as approved by the AHJ. *[NFPA 22 Chapter 4 Section 4.4]*

F. TANK LOCATION

1. Water storage tanks shall be located a minimum of 30 feet from the closest structure and from the property line. Where this requirement is impractical an alternate means of protection may be required by the fire code official.

2. Combustible vegetation & combustible fencing shall be maintained clear for 30 feet around the tank or to the property line.

3. Footings, foundation(s), or other supports shall be constructed to support soil grading adjacent to the tank shall be performed to prevent water run-off from eroding the foundation, footings, or support.

4. The ground under the tank shall be leveled and shall have compacted AB or concrete to support the imposed load.

5. Elevation of the tank outlet shall be the same level or higher than the outlet of the draft hydrant.

   Exception: Elevation of the tank outlet shall not be more than 10 feet below the center of the draft hydrant outlet, if approved by the AHJ based on available topography limitations.

6. Water storage tanks may be located within a structure in accordance with NFPA 22.

G. TANK SIZE

1. Tank systems covered by this standard shall provide, at a minimum, the capacity of Firefighting Water Supply indicated in **Table A** of this standard based on the size of the structure to be protected and if the structure is protected with fire sprinklers. Additional water capacity may be added to the tank system to provide either residential automatic fire sprinkler water supply *[see **Section IX.G.2** below]* and/or domestic water supply but shall require a backflow device to be installed between the firefighting water supply and the domestic water supply to prevent contamination of the domestic water supply. Systems that provide water for a combination of firefighting water supply and either automatic fire sprinkler water supply and/or domestic water supply shall be designed with either piping or automatic controls that ensure the firefighting water supply is always reserved for fire department use *(See **Section IX.L** of this standard).*

2. If additional water storage capacity is needed in the tank for automatic fire sprinkler system design, the tank size shall be increased 500 gallons minimum, or the amount specified by the

Licensed California C-16 Contractor who designs and builds the sprinkler system per the NFPA 13D standard.

3. Commercial water supplies shall meet the fire flow requirements located in CFC Appendix B Table B105.1(2)

H. TANK VENTING

1. Tanks shall be provided with a vent above the maximum water level. Tank vents shall have a cross sectional area greater than or equal to one and one-half times (1.5x) the area of the draft hydrant supply pipe.

2. Tank vents shall be provided with a screened inlet configured to prevent the impairment of the vent or tank intrusion by birds, mammals, insects, or debris.

3. Tank vents shall be installed above the potential snow level for the site elevation. Approval required by the AHJ.

I. PIPING

1. Tank piping attachments for fill, venting, supply, overflow, or drain shall meet the requirements of the tank manufacturer.

2. All supply piping shall be designed and installed to provide a minimum flow rate as shown in **Table A** of this standard. *[NFPA 1142 Table 4.6.1]*

3. All piping shall be a minimum of Schedule 40 pipe. All fittings shall be a minimum of Schedule 80.

4. Flexible piping, which accounts for tank expansion and movement, shall be installed where specific tank manufacturer's installation specifications require.

5. Tank fill piping shall be a minimum of ¾ inch pipe.

6. The tank outlet, supplying the draft hydrant piping, shall include a control valve and shall be a minimum 4-inch inside diameter.

7. The draft hydrant supply piping shall be a minimum 4-inch inside diameter.

8. All piping shall be coated or wrapped to prevent corrosion and/or weathering where applicable.

9. All underground piping shall be placed on 6 inches of sand or other fill material approved for underground utilities and covered 6 inches minimum with the same material prior to backfill.

10. Underground piping shall be buried 24 inches below finished grade unless it is routed under roads or driveways in which case it shall be buried 36 inches minimum below finished grade.

11. All underground piping shall have a blue tracer wire buried with the pipe.

12. Draft hydrant supply piping may remain above ground between the tank and the hydrant when approved by the AHJ.

J. DRAFT HYDRANTS & FIRE VALVES

1. The draft hydrant location shall be located no closer than 50 feet and no further than 250 feet from protected structures as measured along the route of a road or driveway.

2. The center height of the draft hydrant outlet shall be a minimum of 18 to 24 inches above the finished grade.

3. The center height of the draft hydrant outlet shall be designed to be lower than the tank outlet. *[See **Section IX.F.5** of this standard for exceptions]*

4. The draft hydrant outlet shall be a combination of a 4½ inch and 2½ inch NST male hose thread adapters (also known as NH and NS). *[Title 14 1275.03]*

5. The male hose threaded outlet shall be provided with a lugged protective cap and breakable seal to ensure fire department use only.

6. The draft hydrant shall be visible and accessible with a minimum of 3-foot clearance in all directions.

7. The draft hydrant shall be located adjacent to a fire apparatus turnout from the driveway or the roadway that intersects with that driveway as approved by the AHJ.

8. The draft hydrant shall be located 6 to 8 feet from the edge of the fire apparatus access roadway and in a location where fire apparatus using it will not block the roadway.

9. The draft hydrant shall be painted per the local fire department requirements. A permanent sign shall be attached to the draft hydrant or within 5 feet of the draft hydrant stating, **"NO PARKING - Drafting Fire Hydrant - ___Gallons".** Permanent lettering shall be 1½ inch minimum and shall be red in color on a white background. The sign shall not interfere with the operation of the draft hydrant.

10. A 3-foot clear space shall be maintained around the circumference of the draft hydrant. A reflective blue marker, with a minimum dimension of 3" inches, shall be located on the driveway address sign and within 3' feet of the draft hydrant on a post or sign.

11. Dry draft hydrants shall be installed on projects where there is a potential snow level for the site elevation, as determined by the AHJ.

K. FREEZE PROTECTION

1. All aboveground water piping and water tanks shall be designed and installed to protect against freezing where required by the AHJ.

L. WATER LEVEL ASSURANCE

1. An approved method shall be used to provide automatic water fill to ensure the minimum required gallons as listed in **Table A** are available at all times.

2. The system shall be designed such that when the water supply source is impaired, the firefighting water supply will be reserved for firefighting only. The methods used to provide this assurance may include tank plumbing design/configuration and/or approved electric control systems.

3. A sight gauge shall be required as part of the water level assurance design. *(For an example, see **Figure 4**)*

X. INSPECTIONS/TESTING FOR NEW INSTALLATIONS (performed by the Fire Department):

A. Underground Inspections shall include:

a. All underground piping shall be inspected prior to covering with fill.
b. Verify correct tank size *(in gallons)*, correct tank material and correct tank location.
c. Verify that approved piping, fittings, and appurtenances were installed.
d. Verify appropriate piping restraints and freeze protection are installed.
e. Verify appropriate depth of underground pipe.
f. Verify tracer wire/tape is installed along the entire length of the underground pipe.
g. Verify hydrostatic test passes inspection. Piping shall be pressurized with water at a static pressure of 50 psi for 15 minutes from the tank valve to the draft hydrant/fire valve.
h. There shall be no evidence of leaks.

B. Final Inspections shall include:

a. Entire system shall be inspected prior to occupancy of the structure requiring the water supply.
b. Verify all valves are functional as designed.
c. Verify auto-fill is functional by testing the float valve and subsequent water flow.
d. Verify water level indicator is installed and functional.
e. Verify tank venting is installed and is the correct size.
f. Verify water flow through system and out of draft hydrants *(gravity systems).*
g. Verify draft hydrant cap is installed.
h. Verify No Parking – Drafting Fire Hydrant sign is installed.
i. Verify blue marker at the street address and at draft hydrant are installed.
j. Verify “Water Use Agreement” is signed and recorded.
k. Add the draft hydrant and tank GPS locations to Active 911 *(if applicable).*

XI. ONGOING WATER STORAGE INSPECTION, TESTING, & MAINTAINANCE:

A. Owners of residential water systems, installed per the requirements of this standard, shall perform necessary ongoing maintenance and repairs to the system to assure the proper performance of the system as it was designed and installed. All inspections, testing, maintenance, and record keeping shall comply with all requirements per CA Edition NFPA 25-2013 Ch. 7 & 9.

B. Impairments to the fire protection water supply system shall be reported immediately to the fire department.

C. Vegetation and combustible debris *(i.e. leaves, pine needles, branches, etc.)* shall be kept at a minimum 30' foot clearance from the fire water tank.

D. Upon completion and approval of a system or certified 5-year inspection, a permit shall be issued by the fire department for the water supply and draft hydrant system and shall be good for 5 years. At 5-year intervals, the property owner shall renew the permit by retaining a qualified approved vendor to perform a water supply system inspection to ensure operability of the firefighting water supply system during emergency incidents. The inspection report shall be provided to the fire department for review and approval. A water use agreement detailing the approved uses of the system and inspection/permit requirements shall be entered into with the property owner and the applicable fire district. This water use agreement shall be recorded with the El Dorado County Recorder's Office against the parcel where the water supply system is installed, and a copy provided to the AHJ.

TABLE A

Residential Building Square Footage	Minimum Firefighting Water Supply WITH Fire Sprinklers	Fire Flow Rate	Minimum Firefighting Water Supply WITHOUT Fire Sprinklers	Fire Flow Rate
< = 1,200 sf	2,500 gallons	250 GPM[2]	2,500 gallons	250 GPM[2]
1,201 - 2,500 sf	2,500 gallons	250 GPM[2]	5,000 gallons	500 GPM[3]
2,501 - 5,000 sf	5,000 gallons	500 GPM[3]	10,000 gallons[1]	750 GPM[3]
5,001 - 7,500 sf	7,500 gallons[1]	500 GPM[3]	15,000 gallons[1]	750 GPM[3]
7,501 - 10,000 sf	10,000 gallons[1]	750 GPM[3]	20,000 gallons[1]	1000 GPM[3]
10,001 - 12,500 sf	12,500 gallons[1]	1000 GPM[3]	25,000 gallons[1]	1000 GPM[3]
12,501 - 15,000 sf	15,000 gallons[1]	1000 GPM[3]	30,000 gallons[1]	1000 GPM[3]
15,001 - 17,500 sf	17,500 gallons[1]	1000 GPM[3]	35,000 gallons[1]	1000 GPM[3]
17,501 - 20,000 sf	20,000 gallons[1]	1000 GPM[3]	40,000 gallons[1]	1000 GPM[3]

*Water supply for larger structures, other than the ones listed above, shall be determined by the AHJ and shall be designed in 2,500-gallon increments.

*Structures with exposures, as defined by NFPA 1142, shall require a minimum 3,000 gallons of water

[1] *= A permit may be required from El Dorado County for tanks larger than 5,000 gallons*
[2] *= 250 GPM requires 2.5" minimum piping and a 2.5" male draft hydrant outlet w/ cap.*
[3] *= 500 GPM+ requires minimum 4" piping and a 4.5" male draft hydrant outlet with a 4.5" female to 2.5" male reducer w/ cap.*

FIGURE 1

Water Supply for Firefighting ONLY

GUIDE TO WATER STORAGE FOR FIRE PROTECTION

FIGURE 1

El Dorado County Fire Agencies require a minimum of 2,500 gallons of water storage and a fire department draft hydrant to access the water for all new residential buildings, and additions as required by this standard. [nonresidential shall be subject to CFC Appendix B Table B105.1(2)]. (Exception: If an approved municipal water system fire hydrant, is located within 600' of structure, then a private water supplied draft hydrant system is not required). The total building square footage determines the required tank size per Table A. Note: All new dwellings require the installation of a residential fire sprinkler system. Draft hydrant location: To be a minimum of 50' and a maximum of 250' from the structures. The draft hydrant is to be minimum of 6' or a maximum of 8' from the edge of the road, driveway or turnout. A turnout is required if the driveway or road is less than 18' in width to allow additional fire apparatus to pass. Questions regarding the location of the draft fire hydrant will be addressed by the Authority Having Jurisdiction (AHJ).

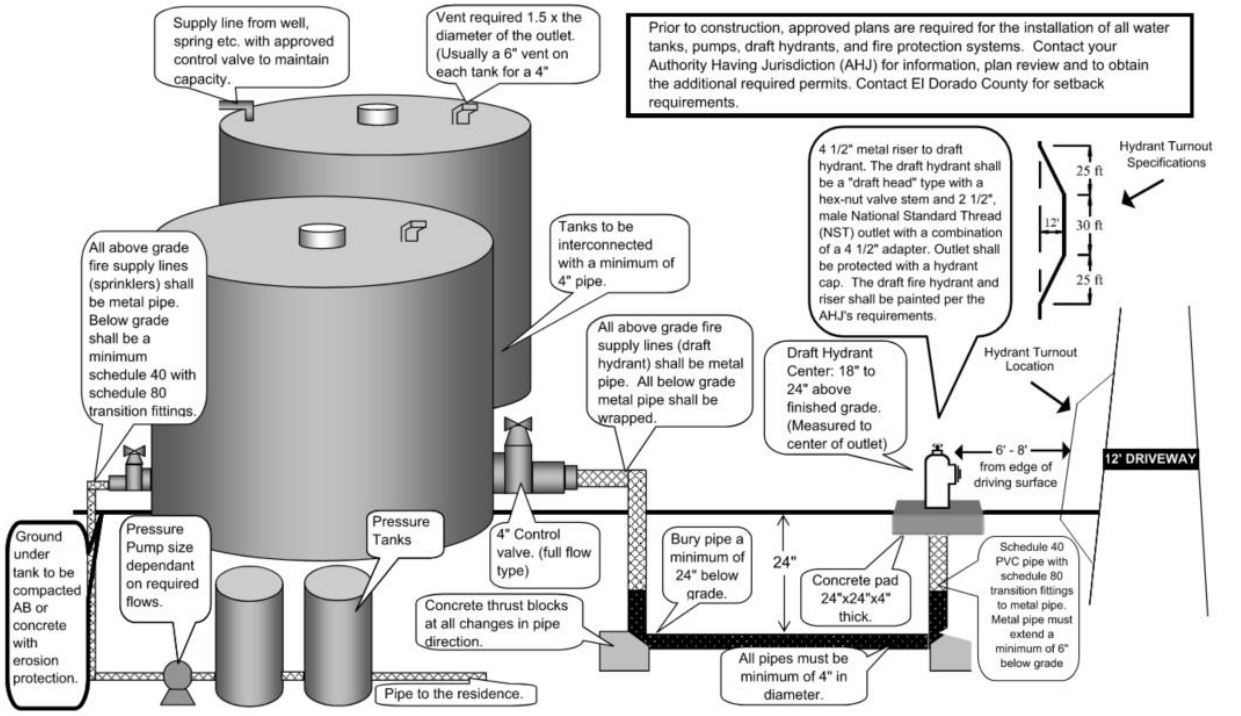

FIGURE 2

Water Supply for Firefighting & Fire Sprinklers

GUIDE TO WATER STORAGE FOR FIRE PROTECTION

FIGURE 2

El Dorado County Fire Agencies require a minimum of 2,500 gallons of water storage and a fire department draft hydrant to access the water for all new residential buildings, and additions as required by this standard. [nonresidential shall be subject to CFC Appendix B Table B105.1(2)]. (Exception: If an approved municipal water system fire hydrant, is located within 600' of structure, then a private water supplied draft hydrant system is not required). The total building square footage determines the required tank size per Table A. Note: All new dwellings require the installation of a residential fire sprinkler system. Draft hydrant location: To be a minimum of 50' and a maximum of 250' from the protected structures. The draft hydrant is to be located a minimum of 6' or a maximum of 8' from the edge of the road, driveway or turnout. A turnout is required if the driveway or road is less than 18' in width to allow additional fire apparatus to pass. Questions regarding the location of the fire draft hydrant will be addressed by the Authority Having Jurisdiction (AHJ).

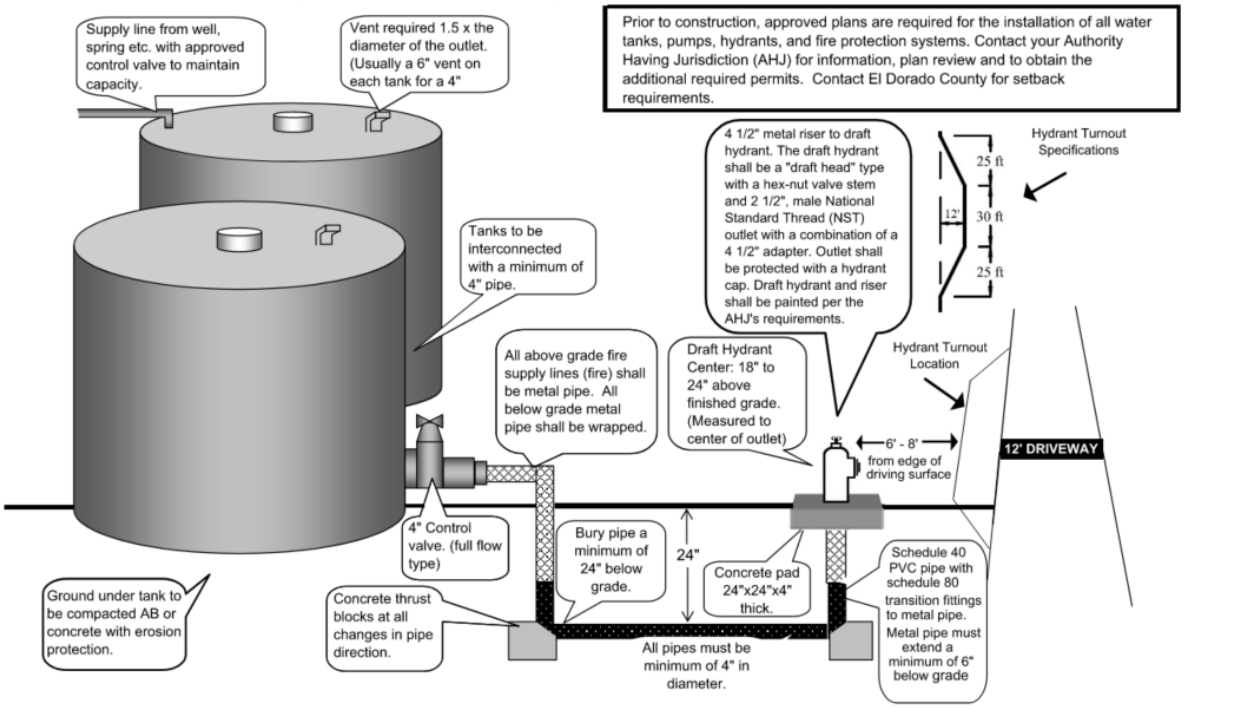

FIGURE 3

SAMPLE WATER USAGE AGREEMENT

It is understood by the owner(s) and the _____ government (hereinafter called the _____ or _____ Fire Department) that this agreement is subject to the following conditions:

1. The owner(s) are permitted to terminate this agreement by written notice if the _____ Fire Department breaches any terms and conditions contained in this agreement.

2. Neither this agreement nor any right or duty in whole or in part by the owner(s) under the agreement will be assigned, delegated, or subcontracted without the written consent of the owner(s).

3. All items placed on the property of the owner(s) by the _____ will remain the property of the _____. If this agreement is terminated, the owner(s) will permit the _____ adequate time to remove said property and return the land to its natural state.

4. Any and all debris that is created by and during the establishment of the drafting site will be disposed of by the _____.

5. No cutting or trimming of trees will be done on the property of the owner(s) unless the _____ Fire Department states that such cutting is/will be necessary to provide uninterrupted and clear travel to the site; however, in no case will such cutting be actually completed without prior approval of the owner(s).

6. The _____ will maintain the area covered by this agreement in a safe condition at all times. This maintenance will also include the groundskeeping around the site.

7. The _____ agrees to save, keep harmless, defend, and indemnify the owner(s) and all its officers, employees, and agents, against any and all liability claims, costs of whatever kind and nature, for injury and death of any person or persons, and for loss or damage to any property occurring in connection with or in any way incidental to or arising out of the occupancy, use, service, operation, or performance of work in connection with this agreement or omissions of the _____ 's employees, agents, or representatives. THIS PROVISO DOES NOT AND WILL NOT APPLY TO ANY EVENTS INVOLVING AN ACTUAL FIRE IN THE STRUCTURE(S) OF THE OWNER(S).

8. The owner(s) as well as any heirs, executors, administrators, and assigns do hereby remise, release, and forever discharge the _____ and any officer, agent, or employee thereof of any liability at law to any person, firm, or legal entity for any act of omission, or any injuries, damages, or deaths claimed to have arisen from the [describe the work to be performed at the site] unless the act of omission amounts to willful misconduct. This waiver is entered into for and in consideration of the drafting site and access roadway. The sufficiency of this consideration is acknowledged by the owner's(s') signature(s) below.

9. The owner(s) grant the rights to the _____ and _____ Fire Department to enter the property cited in this agreement only for the express purpose as stated by owner(s).

_____ (Owner)	_____ (_____ Fire Dept.)
_____ (Owner)	_____ (_____ Road Supt.)
_____ (Date)	_____ (Head of local government)
	_____ [Attorney (ies)]

NFPA 1142

FIGURE 4

[EXAMPLE ONLY]