WATER RESOURCES REPORT

For

Pikes Peak Board of Cooperative Educational Services

Vocational Education Campus Judge Orr Road and Elbert Highway

GMS, Inc. Consulting Engineers

WATER RESOURCES REPORT

FOR

VOCATIONAL EDUCATION CAMPUS PIKES PEAK BOARD OF COOPERATIVE EDUCATIONAL SERVICES (PPBOCES)

PROJECT NO. 2024-062.010

JULY 2024

PREPARED FOR:

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SECTION I EXECUTIVE SUMMARY

The purpose of this **Water Resources Report** is to analyze and address the specific water supply needs of the proposed development of El Paso County Assessor's Parcel No. 4200000362 in El Paso County, Colorado. The proposed development is an 86.4-acre Vocational Education Park, or Campus, owned by the Pikes Peak Board of Cooperative Educational Services (PPBOCES) located at the intersection of Judge Orr Road and Elbert Highway approximately 5 miles northeast of Falcon, Colorado.

The Vocational Educational Campus is planned to consist of 11 separate structures representing discrete education and work areas. This includes spaces for PPBOCES administration, a water treatment facility and appurtenant structures and equipment. The planned facilities encompass 132,760 gross square feet of building area on the Vocational Education Campus. In addition, at site build-out, there will be 121 detached residential units comprised of one- and two-bedroom dwellings.

A. WATER SUPPLY REQUIREMENTS

This Water Resources Report has evaluated the need for water supply to support the vocational education campus. The domestic water uses within the campus buildings, including the water treatment plant, are projected to require 15.2 annual acre-feet (AAF).

Other water supply requirements include supplemental irrigation for landscaping and for domestic uses at the residential dwelling units planned for incorporation into development of the site. The landscape irrigation water supply and the domestic use in the dwelling units are projected to require 1.59 acre-feet per year and 23.6 acre-feet per year respectively.

In summary, the water supply required for full development as presently planned is as follows.

- Educational Facilities Water Supply Requirements 15.2 acre-feet per year
- Other Non-Residential Water Supply Requirements 1.59 acre-feet per year •

- **Residential Water Supply Requirements** •
- 23.6 acre-feet per year
- TOTAL WATER SUPPLY REQUIREMENTS: 40.4 acre-feet per year

B. SOURCE OF WATER RESOURCES

The PPBOCES Vocational Education Campus is located over the southerly extent of the Denver Basin, a geologic formation which can serve as the source of acceptable groundwater for providing the water supply required for the project. Based on an analysis of the proportional ownership of groundwater resources in the Denver Basin underlying the PPBOCES ownership, it has been determined there is 92.3 acre-feet per year available in accordance with the Colorado Groundwater Commission's Denver Basin Rules. This determination of available water from all Denver Basin aquifers is based on withdrawing an average of one percent (1%) of the available groundwater per year, all available water being withdrawn within a period of 100 years. The EI Paso County Land Development Code (EPC LDC) requires that planning be accomplished to determine a supply suitable for a 300 year period or an annual diversion of 0.33 percent per year of total available resource. With this analysis **there is 30.77 acre-feet per year for diversion to satisfy water supply requirements at the project site.**

The project development is planned for six phases. Based on the current analysis, there is sufficient water supply from the Denver Basin aquifers to accomplish Phases 1 through 3 and a portion of Phase 4. All of Phase 4 Vocational Education facilities can be supplied with currently available supplies, however, a maximum of 71 dwelling units can be satisfied with an acceptable water supply with on-site resources.

As the project moves forward through development and wells are construction and pumping of water commences, a re-analysis of available water supply will be accomplished. Should the conditions remain that require additional water supply is required, the PPBOCES will conduct necessary planning and acquisition of required water supplies to satisfy full buildout.

C. OTHER WATER RESOURCE UTILIZATION ISSUES

The water supply to support the Vocational Education Campus and on-site dwelling units will be accomplished with a public water system (PWS) owned and operated by the PPBOCES. The design, construction and operation of infrastructure will be subject to the *Design Criteria for Public Water Systems* and the *Colorado Primary Drinking Water Regulations*. Operation of the public water system will be subject to the requirements for a certified water treatment operator and a certified water distribution system operator, either as employee(s) or through contract with an organization or individual certified persons for those services.

The distribution system will provide all domestic water supply together with fire suppression service and landscape irrigation. Fire suppression service will be managed by on-site storage such that specified fire suppression volume can be supplied from an on-site standpipe (elevated) storage vessel. There has been some consideration of this public water system to supply adjacent, i.e. other land ownership(s), residential and commercial development. However, as of the planning of this Water Resources Report to supply the PPBOCS Campus, that is not a consideration at this time.

The PPBOCES will remain as the responsible owner of the public water system and will continue compliance with all requirements of the Colorado Department of Public Health and Environment and Water Quality Control Commission Regulation No. 11. The PPBOCS will be responsible for financial support of initial infrastructure implementation and continuing operation, maintenance, renewal and replacement to maintain continual compliance with applicable drinking water regulations.

SECTION II SUMMARY OF THE PROPOSED PROJECT

The Pikes Peak BOCES Vocational Education Campus is an 86.4-acre development located in central eastern El Paso County. It is specifically located at the northeast corner of the intersection of Judge Orr Road and Elbert Highway, approximately 2.5 miles east of the intersection of Judge Orr Road with US Highway No. 24. It is approximately two miles south of the intersection of Elbert Highway and US Highway No. 24. Refer to Figure II-1 for the general vicinity of the property owned by the Pikes Peak BOCES and planned to be developed as the Vocational Education Campus.

The plot plan and sketch plan prepared and submitted to the El Paso County Planning and Community Development Department currently represents development of 11 structures dedicated to the Vocational Education Mission of the Pikes Peak BOCES. In addition, it is presently planned that, at build-out, it may include 121 dwelling units of very nominal size and capacity primarily intended to provide housing for education and support staff for the Vocational Education Campus and address availability and affordability of education staff housing as presently experienced by El Paso County School Districts. The planned campus will include internal vehicular and pedestrian accommodations, staff and student parking and common open space.

Table II-1 is a description of the 11 building functions planned to be accommodated on the campus. The data as shown in Table II-1 represents the current planned gross floor area in each of the planned facilities.

Building Purpose	Area (Square Feet-SF)	Function of Space
Veterinary Sciences	4,950	Education - Labs and other vocational room areas
Food Services/Culinary Arts	9,500	Education - Labs and other vocational room areas
Horticulture Sciences	4,950	Education - Labs and other vocational room areas
Water District Office & Shop	5,160	Business Areas
Construction Trades	20,000	Instructional and Industrial Areas
Fire Fighter Training	2,700	Instructional and Industrial Areas
PP BOCES	33,300	Business Areas

TABLE II-1 SUMMARY OF PROPOSED DEVELOPMENT

Building Purpose	Area (Square Feet-SF)	Function of Space
Vocation Training	33,300	Instructional - Shops and other vocational room areas
Law Enforcement Training	10,500	Instructional Education - Shops and other vocational room areas
Medical Training	8,400	Instructional Education - Shops and other vocational room areas
Detached Dwelling Units (DUs)	121 DUs at Build out	Detached housing for Instructional and support staff

The Pikes Beaks BOCES Vocational Education Campus will be developed with consideration for the landscape requirements dictated by the El Paso County Land Development Code. In the interest of water conservation, there will be a minimum amount of turf grass but there will be numerous vertical plantings of coniferous and deciduous trees particularly on and adjacent to contiguous developed and undeveloped properties. This Water Resources Report will address the required water supplies to support the development activities, non-residential and residential described in Table II-1 together with the site amenities, primarily tree plantings throughout the site and the buffer zones at the property's border.

Figure II-2 and II-3 is a reproduction of the plot plan submitted with the Approval of Location application and enhanced presentation with the Site Development Plan application for approval. The data contained on the Pikes Peaks BOCES Plot Plan, Sheet No. PP 1.1, defines the various land areas with designated uses in support of the Vocational Education Campus activities.



A. SUBDIVIDERS

OWNERS Pikes Peak BOCES Patrick Bershinsky, Executive Director 2883 South Circle Drive Colorado Springs, CO 80906 PBershinsky@ppboces.org

B. APPLICANT

APPLICANT | PLANNER | LANDSCAPE ARCHITECT William Guman & Associates, Ltd. Attn: Bill Guman, PLA, ASLA, APA 731 North Weber Street, Suite 10 Colorado Springs, CO 80903 bill@guman.net

ENGINEER JR Engineering Attn: Bryan T. Law, PE 5475 Tech Center Drive, Suite 235 Colorado Springs, CO 80919 blaw@jrengineering.com

Ecosystem Services, LLC Attn: Grant Gurnee, PWS 1455 Washburn Street Erie, CO 80516 grant@ecologicalbenefits.com TRANSPORTATION: JR Engineering Attn: Bryan T. Law, PE 5475 Tech Center Drive, Suite 235 Colorado Springs, CO 80919 blaw@jrengineering.com WATER | HYDROLOGY GMS Attn: Roger J. Sams 611 N. Weber Street, Suite 300 rjsams@gmseng.com

ENVIRONMENTA

C. TAX SCHEDULE NUMBER: 420000362

D. LEGAL DESCRIPTION

A Tract of Land in the Southwest One-Quarter of Section 35 Township 12 South, Range 64 West of the Sixth Principal Meridian, in the County of El Paso, State of Colorado.

E. BASIS OF BEARINGS

The West line of Section 35, Township 12 South, Range 64 West, being monumented at the northerly end by a 3-1/2" aluminum cap in a vault, stamped "LS 22 103", and at the southerly end by a 3-1/2" aluminum cap in a vault, stamped "LS 17496", assumed to bear N 00 Degrees 08 Minutes 51 Seconds E a measured distance of 5273.76 feet.

Commencing at the Southwest Corner of Section 35. Township 12 South. Range 64 West: thence N 00 Degrees 08 Minutes 51 Seconds E on the West line of said Section 35 a distance of 30.00 feet; thence S 89 degrees 28 minutes 49 Seconds E and along a line being 30.00 fee north of and parallel with the South line of the Southwest One-Quarter of said Section 35 a distance of 30.00 feet to the point of beginning.

thence N 00 Degrees 08 Minutes 51 Seconds E and along a line being 30.00 feet east of and parallel with the west line of the Southwest One-Quarter of said Section 35 a distance of 1288.45 feet: thence S 89 Degrees 30 Minutes 28 Seconds E and along the North line of the Southwest One-Quarter of the Southwest One-Quarter of said Section 35 a distance of 1282.36 feet to the Northeast corner of the Southwest One-Quarter of the Southwest One-Quarter of said Section 35; thence N 00 Degrees 11 Minutes 54 Seconds E and along the West line of the Northeast One-Quarter of the Southwest One-Quarter of said Section 35 a distance of 623.40 feet;

thence S 44 Degrees 41 Minutes 19 Seconds a distance of 260.17 feet;

thence S 58 Degrees 46 Minutes 12 Seconds E a distance of 373.98 feet; thence S 67 Degrees 57 Minutes 57 Seconds E a distance of 330.63 feet;

thence S 75 Degrees 13 Minutes 13 Seconds E a distance of 753.34 feet;

thence S 21 Degrees 28 Minutes 54 Seconds W a distance of 256.36 feet to a point of curve; thence along the arc of a curve to the left having a delta of 17 Degrees 49 Minutes 58 Seconds, a radius of

979.51 feet, and a length of 304.86 feet;

thence S 44 Degrees 29 Minutes 49 Seconds E a Distance of 49.50 feet;

thence S 00 Degrees 31 Minutes 11 Seconds W a distance of 60.00 feet;

thence S 45 Degrees 31 Minutes 11 Seconds W a distance of 49.50 feet; thence S 00 Degrees 31 Minutes 11 Seconds W a distance of 564.97 feet to a point on a line being 30.00 feet north of and parallel to the South line of said Section 35;

thence N 89 Degrees 28 Minutes 40 Seconds W and along a line being 30.00 feet north of and parallel with the South line of said Section 35 a distance of 2659.25 feet to the point of beginning.

F. NOTES

- 1. Acreages and percentages are rounded up to equal 100%.
- 2. All areas designated as wetlands and drainageways, buffers, setbacks, and easements are considered as 'No-Build Areas' unless otherwise indicated.
- 3. The proposed Development Plan is located within the Peyton Fire Protection District. 4. After approval, this Development Plan will expire in 5 years unless a Final Plat is submitted or a letter of
- extension is submitted to and approved by the County. 5. Streets and access locations and configurations are conceptual and subject to change. Detailed
- street plans will be prepared and reviewed at the subdivision process. 6. The proposed Development Plan indicates one access location onto Judge Orr Road, and one access location onto Elbert Road.
- 7. Detailed plans for any proposed trails will be prepared and reviewed at the subdivision process.
- 8. El Paso County Regional Trails on Judge Orr Road and Elbert Road are to be coordinated with El Paso County Parks and Recreation. Trail design to be determined at a future level of submittal and will be further refined in future development plan submittals.
- 9. A FEMA designated 100 year floodplain does not exist on this property.
- 10. No known wetlands exist on the property
- 11. No known habitat of threatened or endangered species is on the property
- 12. Information pertaining to wildlife protection measures will be provided by the applicant including fencing requirements, trash and debris containment, protection and enhancement of natural vegetation, weed control and riparian and wetland protection and buffer areas, as appropriate with future zoning and development plan submittals.
- 13. Uses proposed on the Development Plan include:
- a. Water Treatment Facility (developed and owned by PPBOCES).
- b. Vocational Trades Building.
- c. Construction Trades Training Facility (carpentry, plumbing, electrical). d. Law Enforcement Training facility (in conjunction with the El Paso County Sheriff
- department. e. Fire Fighting and Protection Training facility (in conjunction with the Peyton and Falcon Fire
- Protections Districts).
- f. Medical Training facility (EMT/paramedic training).
- Food Services (Culinary Arts). Meat Processing facility.
- Veterinary Sciences Training facility (Animal husbandry).
- Information Technology Training facility (Computer sciences and website development). Horticultural Sciences Training facility (Greenhouse management, aquaponics, and turf
- grass management).
- m. Other vocational education training facilities based upon future needs of the community. n. Workforce/Campus Housing for PPBOCES teachers, instructors, and member district staff.
- 14. The Development Plan proposed for PPBOCES to be served by an on-site Community Water System (e.g., Public Water System) to be designed, engineered, constructed, and managed by PPBOCES.
 - a. A Community Water System (Public Water System) is proposed to extend domestic and fire protection water to PPBOCES and potentially to the adjacent Jane Davis Ranch and Esteban Rodriguez Subdivision via a Water Services Agreement executed between the three entities.
- 15. A Water Resources Report is submitted with the Development Plan which supports the development of a Community Water System.
- 16. Wastewater service for the property will be provided by the Meridian Service Metropolitan District via a Will Serve Letter provided with this application.
- 17. Detention pond, open spaces, buffer areas, and no-build area will be maintained by PPBOCES. 18. Electric service is to be provided by Mountain View Electric Association (MVEA) and Black Hills Energy will provide natural gas per Will Serve Letters provided with this application. Easements for electric and gas service will be provided by PPBOCES as required.
- 19. PPBOCES will comply with all State and Federal laws, regulations, ordinances, review and permit requirements, and other agency requirements, if any, of applicable agencies including but not limited to: the Colorado Division of Parks and Wildlife, Colorado Department of Transportation, U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service regarding the Endangered Species Act.
- 20. PPBOCES may be exempt from certain agency regulatory provisions based up a Subdivision Exemption Plat which will be submitted with the Development Plan application.

F. ZONING MAP



F. NOTES CONT'D

- 21. The following Districts will serve the PPBOCES property:
 - a. PPBOCES Community Water System for all water requirements.
 - b. Pevton School District No. 23
 - c. Peyton Fire Protection District (Fire and Emergency Services).
 - d. El Paso County Conservation District.
 - Pikes Peak Library District. El Paso County Roads and Bridges.
 - Upper Black Squirrel Creek Ground Water.
- Meridian Service Metropolitan District (central wastewater services). 22
- the U.S. Postal Service.
- 23. Perimeter buffers along existing adjacent zoning of A-35 shall be 20 feet where noted on the Development Plan. All other buffers to adjacent zoning will be 15 feet as noted on the Plan.
- 24. PPBOCES Subdivision Exemption status as a public educational facility exempts it from any school development fees.

G. CAMPUS HOUSING

- 1. In addition to Vocational Education facilities, PPBOCS proposes to develop up to 121 single-family detached residences to be used as Campus Housing for PPBOCES teachers, instructors, and staff. 2. Campus Housing is to be developed, owned, and maintained by PPBOCES; residential housing
- units are to serve exclusively as workforce for PPBOCES staff and its member school districts and will not be sold or leased to anyone outside the PPBOCES program
- PPBOCES' Construction Trades program. Housing units will be made available to teachers and instructors through a land lease (aka Ground Lease in Colorado) program where PPBOCES is the Lessor and staff is the Lessee as part of a compensation incentive between PPBOCES and staff.
- satisfying County Planning Code requirements for setbacks and utility easements.
- b. Campus Housing will be accessed via private local streets, with utilities provided as indicated.
- provided by the Meridian Service Metropolitan District. 3. The Development Plan is a public facility and is exempt from school development fees.
- H. FLOODPLAIN NOTES
- National Flood Insurance Program Flood Insurance Map.
- I. NO-BUILD / OPEN SPACE / FEMA MAPPED FLOODPLAIN EASEMENTS 1. Per Section 4.2.6.F.8.c. Calculation of Residential Open Space of the El Paso County Land Development Code: "individual, private residential or commercial lot areas shall not be included on the open open space easements and restrictions." 2. There are no known FEMA-mapped Floodplains on the property.
- J. PRIVATE STREETS 1. All internal streets are designated as private, will be paved, and will provide for levels of vehicular
- circulation required by the Traffic Impact Study. All private streets will be privately owned and maintained by PPBOCES.
- 3. Internal private streets will meet the standards of the El Paso County Engineering Criteria Manual.
- 4. Until approved by the County Engineer, all access points shown from the property onto Judge Orr Road and Elbert Road are conceptual and non-binding upon the county. Approval of this Development Plan shall not be interpreted to include approval of any access to any public road until authorized by the County Engineer. The County Engineer shall approve accesses in accordance with the requirements and procedures of the Engineering Criteria Manual in effect at the time of Development Plan submittal and review.
- **K. PUBLIC STREETS**
- 1. The Development Plan does not propose for any publicly owned and maintained internal public
- 2. Additional Right of Way to be dedicated by plat for Judge Orr Road and Elbert Road see plan for dimensions



Land Use:	Agricultural	
JZone District	A-35 (Large Lo	ot Residential)
reage: 4200000362	86.38 AC	(0 Judge Orr Road)
Acreage:	86.38 AC	
ed Maximum Number of	Units: 121 Single Fa	mily detached (on 24.90
CES will develop and own all ors who will be instructors, te	Campus Housing single-fam eachers, and staff of PPBOCE	ily residential units as a "gro ES.

reatment Facility	85,813sf	1.97ac	72,838sf	1.67ac
nal Education Campus	1,094,227sf	25.12ac	989,066sf	22.70ac
s Residential	1,084,644sf	24.90ac	886,692sf	20.35ac
pace Tract A	316,245sf	7.26ac	316,245sf	7.26ac
pace Tract B	320,166sf	7.35ac	316,110sf	7.25ac
pace Tract C	183,823sf	4.22ac	175,412sf	4.02ac
pace Tract D	213,444sf	4.90ac	114,008sf	2.61ac
Transmission Easemer	nt 464,350sf	10.66ac	464,350sf	10.66ac
R.O.W.	included	included	427,991sf	9.86ac
S:	3,762,712sf	86.38ac	3,762,712sf	86.38ac

Airport, its successors and assigns, a perpetual and assignable easement in and over that certain parcel of passage and flight of aircraft of the class, size, and category as is now or hereinafter may be operationally compatible with Meadow Lake Airport, in, through, across and about the airspace above imaginary planes,

flight by any and all persons or aircraft, of the class, size, and category as is now or hereinafter may be operationally compatible with Meadow Lake Airport, in, through, across or about any portion of the

Airspace, such noise, dist, turbulence, vibration, illumination, air currents, fumes, exhaust, smoke and all other effects as may be inherent in the proper operation of aircraft, now known or hereinafter used

improvements of any and all kinds, and of trees, vegetation, or other objects, which extend into said

navigation, and all buildings, structures, or other improvements, and trees or other objects now upon, or that in the future may be upon PPBOCES, and which extend into the Airspace may be required to

structure, improvement, tree, or other object on the PPBOCES Campus, to extend into the Airspace,

Campus in such a manner as to create electrical or electronic interference with radio communication

direct benefit of that real property which now or hereinafter constitutes Meadow Lake Airport, and shall further be deemed in gross, being conveyed to and for the benefit of Meadow Lake Airport, and any and all members of the general public who may use said easement or right-of-way, taking off from, landing upon, or operating such aircraft in or about the Meadow Lake Airport or in otherwise

of any rights that it may otherwise have from time to time against any individual or private operator for



LAND USE:	GROSS AREA:	ACREAGE:	NET AREA:	NET ACREAG
Water Treatment Facility	85,813sf	1.97ac	72,838sf	1.67ac
Vocational Education Campus	1,094,227sf	25.12ac	989,066sf	22.70ac
Campus Residential	1,084,644sf	24.90ac	886,692sf	20.35ac
Open Space Tract A	316,245sf	7.26ac	316,245sf	7.26ac
Open Space Tract B	320,166sf	7.35ac	316,110sf	7.25ac
Open Space Tract C	183,823sf	4.22ac	175,412sf	4.02ac
Open Space Tract D	213,444sf	4.90ac	114,008sf	2.61ac
Electric Transmission Easement	464,350sf	10.66ac	464,350sf	10.66ac
Street R.O.W.	included	included	427,991sf	9.86ac
	0 700 740 (00.00	0 700 740 (00.00

- Protection Districts).

- Grass Management).

- 9060 Elbert Road Peyton, CO 80831-8319 TSN 4200000470
- 8995 Elbert Road Peyton, CO 80831-8318
- 8127 Burl Wood Drive Colorado Springs, CO 80808
- (4) Michael Lockhart 4133 Knollvale Drive Colorado Springs, CO 80922
- Andrew Townsend 16360 Judge Orr Road Peyton, CO 80831 TSN 4200000454
- 11890 Garrett Road Peyton, CO 80831-7685



SECTION III

INFORMATION REGARDING SUFFICIENT QUANTITY OF WATER

A. PPBOCES CAMPUS WATER SUPPLY REQUIREMENTS

1. Educational Facilities Water Supply Requirements

The determination of non-residential water supply requirements can be quite subjective. However, in this Water Resources Report, in support of the Pikes Peak BOCES Vocational Education Campus, the responsible design professional has utilized several sources as representative of current water supply engineering design practice together with specific knowledge regarding certain types of non-residential uses. The primary basis for assessing the water supply requirements for non-residential facilities has been an identification of the net occupied building areas utilizing the criteria from the International Building Code for floor area per population equivalent or individual personnel occupancy together with an assessment of net occupied building area from the gross building area demonstrated in Table II-1 of this Water Resources Report.

The table below provides a summary of the maximum occupancy per each of the eleven functional structures on the Campus.

Building Title	Gross Area, Square Feet (SF)	Net Area, Square Feet (SF)	Function of Space	Maximum Occupancy per Square Footage (SF/PE)	Maximum Occupancy (PE)
Veterinary Sciences	4,950	4,455	Education – Shops and other vocational room areas	50	89
Food Services/Culinary Arts	9,500	8,550	Education – Shops and other vocational room areas	50	171
Horticulture Sciences	4,950	3,465	Education – Shops and other vocational room areas	50	69
Water District Office & Shop	5,160	1,548	Business Areas	150	10
Construction Trades	20,000	18,000	Industrial Areas	100	180

TABLE III-1

SUMMARY OF MAXIMUM OCCUPANCY PER BUILDING

Fire Fighter Training	2,700	2,565	Industrial Areas	100	26
PP BOCES	33,300	29,970	Business Areas	150	200
Vocation Training	33,300	29,970	Education – Shops and other vocational room areas	50	599
Law Enforcement Training	10,500	9,975	Education – Shops and other vocational room areas	50	199
Medical Training	8,400	7,980	Education – Shops and other vocational room areas	50	160
				Total =	1,703

The base water supply requirements for the occupancy of the educational facilities of the type proposed of the BOCES Vocational Education Campus is based on 9 hours per day occupancy per person with a total daily demand of 10 gallons. That resulting computation has adjustments for certain uses that, in the opinion of the responsible design professional, are reasonable and ordinary to be considered at this stage of planning for this project. The projected water supplies for the non-residential facilities are provided in Table III-2 with described adjustments for each activity to be supplied.

TABLE III-2

Building Title	Maximum Occupancy (PE)	Water Supply Demand (GPD) per PE	Days per Week Occupancy	Total Water Supply Demand (GPD)	Adjusted Total Water Supply Demand (GPD)	Adjustment Notes
Veterinary Services	89	10.0	5.0	213,840	256,608	Add 20% for lab use, clean-up and hand wash use
Food Services/ Culinary Arts	171	10.0	5.5	451,440	609,444	Add 35% for instructional lab use, equipment cleanup and hand wash use
Horticulture Sciences	69	10.0	5.0	166,320	214,320	Increased for planting irrigation, equipment cleanup and hand wash
Water District Office & Shop	10	10.0	7.0	37,565	404,550	Reduced for 3 WTP operators, increased for WTP residuals discharge

Building Title	Maximum Occupancy (PE)	Water Supply Demand (GPD) per PE	Days per Week Occupancy	Total Water Supply Demand (GPD)	Adjusted Total Water Supply Demand (GPD)	Adjustment Notes
Construction Trades	180	10.0	5.0	432,000	432,000	No adjustments
Fire Fighter Training	26	10.0	5.5	67,716	74,488	Add 10% for showers in strength & fitness training & testing
PP BOCES	200	10.0	5.0	479,520	479,520	No adjustments
Vocation Training	599	10.0	5.0	1,438,560	1,438,560	No adjustments
Law Enforcement Training	199	10.0	5.5	526,680	569,580	Add 10% for showers in strength & fitness training & testing
Medical Training	160	10.0	5.5	421,344	463,478	Add 10% for equipment cleanup and hand wash use
		Total (Acre	13.0	15.2		

As indicated in Table III-2, it is estimated that the non-residential uses planned for the Pikes Peak BOCES Vocational Education Campus will require 15.2 acre-feet per year at full planned facility build-out operation. As a means of comparing the manner in which this value was developed to other general or other published criteria, the El Paso County Land Development Code "presumptive," water supply demand for non-residential uses suggests a possible value of 0.1 gallons per day per square foot of gross developed building area. For comparison purposes, this criteria would suggest the following:

Gross developed area at occupancy 365 days per year = 14.9 acre-feet per year Gross developed area at occupancy 245 days per year = 14.2 acre-feet per year

The value shown above of 245 days per year represents a condition where occupancy would be equivalent to five (5) days per week for 49 weeks per year. It is not expected that the activities conducted on the Pikes Peak BOCES Vocational Education Campus would mirror the typical public school year schedule or cycle. It is anticipated that the vocational education activities will be conducted in parallel with the normal school instructional activities and

requirements, school district athletic activities and student part-time employment. This would dictate abnormal scheduling for activities in the Vocational Education Campus which may have other than an 8:00 to 5:00, five (5) day per week, nine (9) month per year schedule.

2. Other Non-Residential Water Supply Requirements

Other non-residential water supply required for operation of the PPBOCES Vocational Education Campus would be dedicated to establishing and maintaining desired landscaping that would require supplemental water supply. The in-progress Site Development Plan documents include a landscape plan. This plan includes three types of landscape plantings that will require supplemental water supply. These are coniferous trees, deciduous trees and turf grass in the parking lot islands and other similar areas, keeping the irrigated turf grass to the minimum dictated by the EPC LDC. The tree plantings are generally provided as site perimeter buffer plantings, building and parking lot buffers. In addition, the perimeter tree plantings provide a buffer between the education campus and the residential area.

The tree plantings will be supplied supplemental water supply based on the following design and operational criteria. This criteria will be applied to the irrigation of 375 deciduous trees and 426 coniferous trees.

- All tree plantings will be supplied supplemental water supply with drip irrigation infrastructure.
- All tree plantings will be provided supplemental water supply 26 weeks per year
- Deciduous trees will be supplied 4 gallons per day, 2 days per week.
- Coniferous trees will be supplied 4 gallons per day, 1 day per week.

Irrigated turf grass is scheduled to be installed over an area of 16,200 square feet or 0.37 acres. Supplemental water will be provided at a rate of 3.25 acre-feet per year, the total amount being applied during the irrigation season, generally April 15 through October 15.

The following Table III-3 is a summary of the water supply requirements for landscape irrigation.

Landscape ElementAnnual Supply
Required, Acre-
FeetDeciduous Trees, 375 Plantings0.24Coniferous Trees, 426 Plantings0.14Irrigated Turf Grass, 0.37 Acres1.21Total Landscape Irrigation Water Supply, =1.59

TABLE III-3 LANDSCAPE IRRIGATION WATER SUPPLY REQUIREMENTS

3. Residential Water Supply Requirements

Water demand for the 121 dwelling units (DUs) was estimated by developing a single-family equivalent (SFE) based on water supply fixture units (wsfu). This approach provides a rationale to determine required water supply for occupancy of DUs that are smaller in gross size than single family, detached DUs typical of subdivision development. It provides a means of relating the planned DUs to the "presumptive," water supply requirements of typical detached single family dwellings addressed in the EPC Land Development Code (LDC) at Section 8.

Water supply fixture units (wsfus) are used as defined in the currently applicable building code to assess relative demand from water supply fixtures in a dwelling unit. As a basis of assessing the application of the "presumptive" water supply required for single family detached dwellings, the annual supply for in-house use as cited by the LDC is deemed to apply to a typical dwelling unit with the water supply fixtures shown below.

- Full Kitchen with Dishwasher
- Clothes washing machine with general use sink
- Three (3) Bedrooms
- Three (3) Bathroom Groups (A group includes a tub and/or shower, water closet and lavatory sink).

The current building code assigns a total water supply fixture unit load to these fixtures of 27.32, i.e. **27.32 wsfus** for a typical single family detached dwelling unit.

It was assumed that 60 of the units would contain two bedrooms, one full bath, one threequarter bath, laundry accommodations and a full kitchen. The remaining 61 units would contain one bedroom, one full bath, laundry accommodations and a full kitchen. The tables below provide a summary of the total number of wsfu per dwelling unit (DU) determined by the International Plumbing Code (IPC) as currently adopted by the Colorado State Plumbing Code and incorporated in the Pikes Peak Regional Building Code.

TABLE III-4
SUMMARY OF WSFUS PER DU

	Required W	1 Bedroom DU	2 Bedroom DU		
Feature	Fixture Occupancy Type of Supply Control		Load Value (wsfu)	Load Value (wsfu)	
Kitchen Sink		Private	Faucet	1.4	1.4
Kitchen	Dishwashing Machine	Private	Automatic	1.4	1.4
Laundry	Washing Machine	Private	Automatic	1.4	1.4
1 Bathroom	Bathroom Group w/Tub & Shower	nroom Group ub & Shower Private M		3.6	3.6
3/4 Bathroom	Bathroom Group w/Shower	Private	Mixing Valve	0	3.6
Hose	Hose Bibb 2 per DU 10 gpm Ea.		10.9	10.9	
		18.7	22.3		

TABLE III-5

SUMMARY OF RESIDENTIAL WSFUs

Unit Type	Units	WSFU/unit	Total WSFU
1 Bedroom, 1 Bathroom, Full Kitchen	61	18.7	1141.9
2 Bedrooms, 2 Bathrooms, Full Kitchen	60	22.3	1339.2
Total =	121		2481.1

It was determined that a standard/typical single-family home has a wsfu load value of 27.3. This number was used to determine that there are 90.9 SFEs applicable to the 121 dwelling units planned for build-out of the PPBOCES Vocational Education Campus. El Paso County Land Development Code cites a "presumptive," inside water use of 0.26 acre-feet (AF) per year for single-family dwellings (i.e. SFEs). This value was multiplied with the determined

90.9 SFEs to estimate a total annual indoor water use of 23.6 AF/year for the 121 dwelling units.

4. Summary of Water Supply Requirements

The following is summary of the water supply required for the PPBOCES Vocational Education Campus to build-out as represented in Figure II-3.

- Educational Facilities Water Supply Requirements 15.2 acre-feet per year
- Other Non-Residential Water Supply Requirements 1.59 acre-feet per year
- Residential Water Supply Requirements
 <u>23.6 acre-feet per year</u>
- TOTAL WATER SUPPLY REQUIREMENTS: 40.4 acre-feet per year

The total water supply requirement presented above includes the landscaping elements dictated by the EPC LDC. It anticipates that the residential units will not have turf grass installed and very little to no other landscape elements requiring supplemental water supply. All units are presently planned with minimal xeric landscape elements.

The Plot Plan does include an area reserved for joint use in the horticulture vocational program for turf management education, practical experience opportunities and use by PPBOCES member districts for outdoor athletic activities. This could be advantageous for member districts which are not provided space at their own member district facilities or location of member district facilities restrict the efficient development or utilization of those facilities, either existing or future facilities. This space at the PPBOCES Campus is currently represented as having an area of 1.32 acres. Should it be developed in the future, it can be anticipated to require supplemental water supply for establishing and maintaining adequate turf grass of 4.30 acre-feet per year. If, and when, that element is developed, the PPBOCES will investigate and resolve water supply requirements for that facility at that time.

B. DETERMINATION OF WATER AVAILABLE TO THE PPBOCES CAMPUS

The water resources considered for supplying the PPBOCES Vocational Education Campus are underlying the PPBOCES property in the bedrock aquifers commonly referred to as the Denver Basin. There is shallow, alluvial groundwater on the property, however that has not been considered a viable alternative for providing the required water supply. Historically, the local alluvial groundwater has been used for agricultural purposes. Since approximately 1955, the alluvial groundwater resources have also been used for municipal purposes in the Colorado Springs metropolitan area.

The local groundwater is within the institutional boundaries of the Upper Black Squirrel Creek Groundwater Management District. As such, that water resource is managed in a fashion consistent with the Colorado water right priority system as applied to groundwater. Due to the historical uses of local alluvial groundwater, any new uses will be considered junior to all existing points of diversion. Accordingly, any new uses as would be associated with the PPBOCS Campus, would be subject to the priority system which, as a junior diverter, would require replacement of any consumptive use to assure any senior water right was not damaged or restricted from continuing historical use. From a cursory examination, the development of a replacement plan to accommodate use of local alluvial ground water is not feasible at this time.

The proposed PPBOCES Campus is located within the geological limits of the Denver Basin. The Denver Basin is a series of vertically bedded aquifers extending from central El Paso County north approximately 120 miles to central Weld County. It extends west to east approximately 60 miles from the Rocky Mountain foothills, aka Front Range. The separately identified aquifers in the Denver Basin, from top to bottom respectively, are the Dawson, Denver, Arapahoe, and Laramie-Fox Hills. The northern reaches of the Dawson and Arapahoe aquifers are separated into Upper and Lower aquifers. The three aquifers within the project limits are the not-nontributary (NNT) Denver aquifer, the nontributary (NT) Upper Arapahoe aquifer, and the nontributary (NT) Laramie-Fox Hills aquifer. The groundwater in these aquifers is considered by regulation to be non-renewable.

Withdrawal of NNT Denver Aquifer water requires at least four percent (4%) of the water pumped to be returned to the surface streams. Withdrawals of NT Denver Basin aquifers, i.e. Arapahoe and Laramie-Fox Hills, require accounting to verify that no more than 98 percent of total diversions are consumptively used. 1. Ownership of Denver Basin Water at PPBOCES Campus

The PPBOCES obtained title to the project site by an ownership conveyance deed recorded at Reception No. 223035233 of the records of El Paso County dated May 1, 2023. This is the 86.38 acre land parcel located at the northeasterly extent of the intersection of Judge Orr Road and Elbert Highway in eastern El Paso County. Coincidental with that recordation of the Warranty Deed for the real estate, PPBOCES received a Quit Claim Deed from the real estate owner conveying the groundwater allocated to this project site pursuant to the Colorado Groundwater Commission Determinations of Water Rights completed in 457-BD, 458-BD and 459-BD. These were issued by the Colorado Groundwater Commission at the petition of a prior landowner which owned the subject project site as part of a 6,955 acre parcel.

The referenced Quit Claim Deed, recorded at Reception No. 223035235 of the records of El Paso County, allocates the water resources in the Denver, Arapahoe and Laramie Fox Hills aquifers in the proportion that the land area of the project site (86.38 acres) bears to the total land area of the Petitioner when the determination by the CGWC was rendered in March 2004. A copy of the real estate ownership deed and the Quit Claim Deed together with an Exhibit A referenced in the Quit Claim Deed describing, "the Property," is included as Appendix A to this Water Resources Report. "The Property" recited in the Quit Claim Deed is the PPBOCES property.

2. Determination Of Available Denver Basin Water

The PPBOCES ownership parcel was part of a larger tract of land which was the subject of a Determination of Water Rights Nos. 457-BD, 458-BD and 459-BD for the Laramie-Fox Hills, Arapahoe and Denver aquifers respectively. These determinations of Water Rights were issued by the Colorado Ground Water Commission (CGWC) on March 3, 2004, for a land parcel having an area of 6,955.31 acres. In the recent past, it has been the practice of the Colorado Division of Water Resources to allocate the Denver Basin aquifer waters on the basis of the March 3, 2004, Determinations proportional to the overlying land area. In the case of the PPBOCES land parcel, it is 1.242 percent of the total land area considered in the referenced Determinations, i.e., 86.38 acres of 6,955.31 acres. Table III-6 provides the values utilized in determining an allocation of Denver Basin groundwater to the PPBOCES site.

TABLE III-6

PPBOCES CAMPUS DENVER BASIN AQUIFER ALLOCATIONS

Denver Basin Aquifer & CGWC Determination	Available water for Allocation per CGWC Determinations ¹⁾ ; Acre-Feet	Annual Allocation per Denver Basin rules (100 yrs) Acre-Feet	Proportional Allocation to PPBOCES ²⁾ per Denver Basin Rules (100 yrs) per year; Acre-Feet	Proportional Allocation to PPBOCES per EPC LDC (300 yrs) per year; Acre-Feet
Denver Aquifer (459-BD)	236,481	2,365	29.37	9.79
Arapahoe Aquifer (458-BD)	271,953	2,720	33.77	11.26
Laramie-Fox Hills Aquifer (457-BD)	234,742	2,347	29.15	9.72
TOTAL ALL AQUIFERS	743,176	7,432	92.30	30.77

1) Volume based on aquifer area of 6,955.31 acres used in referenced CGWC Determinations.

2) Volume allocated at ratio of 86.38 Acres to 6,955.31 Acres.

The data in the table shows the annual diversions permitted by the Colorado Ground Water Commission (CGWC) Denver Basin rules. Also shown are the annually divertible quantities deemed to be compliant with the El Paso County Land Development Code. The Denver Basin rules permit one percent (1%) of the available water resource to be diverted on an annual average basis. The El Paso County Land Development Code limits the annual diversions to 0.33% of the available water resource to be diverted on an annual average basis. This represents an allocation of the available groundwater over a 300 year period.

The evaluation of available water resources at the property owned by PPBOCES was also evaluated using the Colorado Division of Water Resources (CDWR) Determination Tool for the Denver Basin. The CDWR has developed and maintained this tool for the purpose of making estimates of available water resource in each of the four Denver Basin aquifers on a site or location specific basis. As a planning tool, it provides a reasonable estimate of what might be encountered should a competently designed and constructed well be placed into service in the Denver Basin aquifers at a specific location.

It must be realized that the Tool is only as good as the data from which it was developed. In this particular location, the nearest Denver Basin wells that may fully penetrate each of the subject aquifers are between 1.8 and 3 miles distant. These wells are of relatively recent vintage; thus it is unknown if the hydrogeologic data from those structures has been entered into the model database. The location of proposed Denver Basin wells which could serve the PPBOCES campus will be near the presumed geological boundaries of the Denver Basin, resulting in the possibility of significant variation from actual conditions. It must also be realized that the referenced CGWC determinations from March 2004 were made with a database no more representative of actual conditions than the Tool database available 20 years hence, i.e. in this 2024 Water Resources Report.

At the location of the Pikes Peak BOCES property, only the Denver, Arapahoe and Laramie Fox Hills aquifers are considered to be available. The Dawson aquifer does not exist at this site as it has been eroded away at this particular location, to whatever extent it might have existed in the geological past. The Arapahoe and Laramie Fox Hills aquifers are considered nontributary to the surface water systems, i.e., surface streams and connected alluvial groundwater. The Denver Aquifer is considered to be not-nontributary and requires a replacement plan of a minimum of 4% of the diverted water.

Use of the CDWR Determination Tool from each of the three Denver Basin aquifers existing on the Pikes Peak BOCES site has yielded an available water resource of about one (1) acre-foot less (300 year annual diversion) than determined using the proportional allocation from the March 2004 CGWC Determinations. For purposes of presenting an annual allocation of Denver Basin water available to the PPBOCES Campus development, existing conditions will yield 30.77 acre-feet per year.

Based on phasing and build out projections, the Pikes Peak BOCES may initially limit water demand to 30.77 annual acre-feet. This will support all non-residential uses represented in Table III-2 and landscape irrigation supply shown in Table III-3 with an

average annual supply requirement of 16.79 acre-feet. The sequencing and phasing plans will initially limit the residential demand to a maximum of 13.98 annual acre-feet supporting 71 dwelling units with an approximate equal mix of 1 bedroom and 2 bedroom units. The current development plan represents 76 DUs being built through Phase 4 of the 6 phase development plan to build-out. Prior to implementation of Phase 4, the actual water resource production and utilization will be fully evaluated to determine need for added water supply for the build out of Phases 4, 5 and 6.

The allocations presented above are sufficient to provide for all Vocational Education Campus facilities, planned site landscape <u>without</u> the turf management program development and on-campus dwelling units planned in phases. Pending construction of the Denver Basin wells, testing and conversion to production wells, future well permits may address alternative quantities deemed to be available in accordance with the Denver Basin rules, the ownership of Pikes Peak BOCES and the actual production capabilities of the Denver Basin aquifers at the Pikes Peak BOCES property.

C. PRODUCTION WELLS INFORMATION

There are no existing wells within the ownership of the PPBOCES. At the present time, it is planned that the proposed Denver Basin wells would be located near the proposed water treatment facility located in the northwesterly extent of the Vocational Education Campus. As detailed site planning is accomplished, the wells will be located in relation to the water treatment facility such that there is reasonable access and working space around each well to permit servicing of pumping equipment and rehabilitation of the well following full development of the water treatment facility site. At this early stage of planning, there will be three (3) wells planned and specific locations identified to permit access for construction, operation, maintenance, service, renewal and replacement. Each well will be equipped with submersible pumping equipment and a pitless adapter. Therefore, the evidence of a well will be relatively minimal with the above ground pitless adapter equipment being the only obvious well infrastructure visible.

In general, the residential or single user groundwater wells in the vicinity which utilize the Denver Basin aquifers are in the Denver aquifer. Although the Denver aquifer extends to a depth of about 900 feet below the ground surface, the majority of the wells of record are

approximately 250 to 350 feet deep. These are exempt residential wells generally limited to a minimum of 15 gallons per minute production with limitations on out-of-house use for irrigation and livestock water supply.

The Saddlehorn Ranch Metropolitan District wells are located approximately 1.8 miles south/southwest of the PPBOCES site. There is an Arapahoe and a Laramie Fox Hill well constructed at that site. In addition, there are Arapahoe and Laramie Fox Hill wells located northwest and westerly of the PPBOCES site serving the Meridian Service Metropolitan District and the Woodmen Hills Metropolitan District.

Prudently designed, constructed, operated and maintained Denver basin wells can provide a dependable water supply for the planned development of the PPBOCES Vocational Education Campus. Although the source water in the Denver basin aquifers is considered non-renewable, current technical data and legal availability of the required water supply satisfies the criteria for a 300-year supply as an accepted measure of "dependability." There are many factors that can alter the availability of the Denver basin water supplies; however the use of that source water has been found to be satisfactory in El Paso County for municipal water supplies for more than 65 years.

When construction of the first phase of the PPBOCES Vocational Education Campus commences, it is likely that a test hole permit will be requested to be issued by the Colorado Division of Water Resources. The decision yet to be made will determine whether the initial well will only be a Denver aquifer well fully penetrating the aquifer or will also include an Arapahoe aquifer well constructed at the same time. Prudent planning would require at least two somewhat independent water sources once there is occupancy on the site, at least by the completion of phase two (2).

Upon construction of the wells and the acquisition of hydrogeological logging of the aquifer, an application for a permit will be submitted to the CDWR for conversion of the test hole permit to a production well. Ultimately adjudication of that appropriation of groundwater will be considered for filing with the appropriate water court.

The wells will be constructed in full compliance with the Colorado Division of Water Resources and Colorado Water Well Construction rules adopted by the Board of Examiners of Water Well Construction and Pump Installation Contractors. Qualified hydrogeologists will be retained for well design and construction detailing.

D. SURFACE WATER SOURCES

There are no surface water sources located within the project limits or within reasonable proximity; therefore, surface water was not evaluated as a potential water supply source. As of the writing of this report, there is no anticipation that a surface water source, external to the immediate planning area, would be available during the build-out of the PPBOCES Vocational Education Campus.

E. OTHER PUBLIC WATER SYSTEM SOURCES

There are other public water systems operating central water production, treatment and distribution facilities. Inquiries have been made by the PPBOCES design team of those systems as to the potential for supplying the PPBOCS Campus with potable water. There have been no positive responses to those requests. In general, the public water systems within close proximity to the PPBOCES Campus have not been planned or developed with sufficient uncommitted capacity to support the proposed Campus.

F. PPBOCES DENVER BASIN SOURCE WATER QUALITY CONSIDERATIONS

Given the approach of utilizing Denver Basin groundwater for the domestic water supply for the PPBOCES Vocational Education Campus, it can be assumed that the native groundwater to be diverted for the project will be of acceptable quality. This judgement is made from prior experience with utilization of Denver Basin groundwater and the following major considerations.

- The source water aquifers are reasonably isolated from surface contamination such as pathogens and organic compounds.
- There are no known sources within many miles of the proposed source which may have an opportunity to introduce contaminants to the aquifers, i.e., oil and gas exploration and production.
- Naturally occurring elements and compounds which are considered to be contaminants can be controlled with treatment techniques and technology to attain compliance with safe drinking water standards. The treatment technologies ordinarily applied have been demonstrated to be effective, reliable and sustainable.

The naturally occurring elements and compounds which may require attention from a drinking water quality standpoint are the following:

- Denver Aquifer: Iron and manganese
- Arapahoe Aquifer: Iron, manganese, radium and arsenic
- Laramie Fox Hills Aquifer: Total dissolved solids, sulfate and sulfide

The PPBOCES Vocational Education Campus is planned to have a central water system serving all non-residential and residential facilities. That central water system will include water treatment capability to remove both primary and secondary contaminants to yield consistently high quality and compliant drinking water.

At the outset of considerations for drinking water quality, iron and manganese are likely the two elements requiring attention. The treatment system will oxidize each of those forms of iron and manganese to insoluble compounds and a filtration process will remove the insoluble materials. There are some synergistic impacts of the treatment for iron and manganese with radium and arsenic. The water treatment residuals resulting from treatment primarily oriented to iron and manganese will most likely contain radium and arsenic. Those considerations will be made in planning and design of the water treatment system as to adequate management of the water treatment residuals.

Compliance with safe drinking water standards for radium is usually not a problem in finished water quality. However, there are known locations in the Arapahoe Aquifer in other locations in El Paso County where significant treatment of radium removal and/or blending is required. As indicated above, the major concern or consideration is with management of water treatment residuals which require ultimate disposal. There is some consideration for a portion of those residuals to be disposed through the wastewater management system offsite. However, water treatment plant discharges are considered an industrial waste and regulated accordingly.

The development of Denver Basin groundwater for use for all purposes at the PPBOCES Vocational Education Campus will be compliant with all Colorado Department of Public Health and Environment regulations, guidance and policy. During the detailed planning and design and preparation of construction documents, all anticipated constituents will be addressed. It is planned that well construction will parallel early design for treatment facilities. However, design may not be 100% complete and construction documents completed until groundwater has been sampled from the production wells that will actually serve the PPBOCES facility.

Disinfection by-products (DBPs) are often a concern in finished water. That is of little concern with the utilization of Denver Basin groundwater because the total organic carbon (TOC) in the Denver, Arapahoe and Laramie Fox Hills aquifers is very low. Disinfection byproducts are usually a result of oxidation or reaction with organic carbon compounds. This is not anticipated to be an issue at this facility.

Based on experience in nearby water utilities, the considerations for the following primary drinking water constituents will be given attention in assessment of treatment and control requirements.

•	Antimony	•	Arsenic
•	Asbestos	•	Barium
•	Beryllium	•	Cadmium
•	Chromium	•	Copper
•	Cyanide	•	Fluoride
•	Lead	•	Mercury
•	Nitrate	•	Nitrite
•	Selenium	•	Thallium
•	Radium		

Unregulated contaminants are also a concern when developing a potable water supply. Utilization of bedrock aquifers as the source water usually removes those concerns as most unregulated contaminants requiring attention are anthropogenic in nature, i.e., contributed from use in domestic and industrial applications.

In summary, following many years of use of Denver Basin ground water resources for production of potable water suitable for drinking water purposes in the geographical limits of

the Denver Basin, it can be concluded that this source water is suitable for the required potable supply at the PPBOCES Vocational Education Campus.

SECTION IV

OTHER WATER SUPPLY CONSIDERATONS FOR THE PPBOCES CAMPUS

Items discussed in this section are infrastructure and operational issues required to be given attention for effective delivery of suitable water supply to the PPBOCES public water system at the Vocational Education Campus. The discussion also briefly addresses the conceptual finance plan to initiate implementation of the water supply system and best assure compliance with the Colorado Primary Drinking Water Regulations.

A. WATER PRODUCTION, TREATMENT AND DISTRIBUTION

The PPBOCES Campus public water supply will be designed, constructed, operated, maintained, renewed and replaced in accordance with the *Colorado Primary Drinking Regulations*. In addition, the Water Quality Control Division's *Design Criteria for Public Water Systems*, with latest revisions, will apply to all facilities supporting the delivery of potable water to the Vocational Education Campus.

As the water production treatment and distribution at the Campus will be considered a public water supply, the operations of that system must be accomplished under the direction of a certified operator or operators. Two certifications will be necessary, a water treatment operator certification and a distribution system operator certification, for the Operator In Responsible Charge (ORC). Those certifications can be held by a single individual with support of the required written direction for others who have responsibilities under the supervision of the certified operator(s). This may be an employee, or employees, of PPBOCES or an individual or organization under contract with PPBOCES.

B. WATER STORAGE CONSIDERATIONS

It is recommended that there be active, "online," potable water storage in the PPBOCES public water system. This storage will be sized to accommodate the following conditions:

- Diurnal variation in demand
- Reserved potable water storage for fire suppression

• Reserved carry over storage for water production system outages, planned and programmed or having a cause external to the PPBOCES water system

There is adequate space on the proposed Campus plan for a relatively conventional stand pipe storage vessel. A stand pipe storage vessel is a single cylindrical, usually steel, structure providing suitable depth to maintain satisfactory pressure in the distribution system. Alternatively, an elevated storage vessel could be considered either all steel construction or a composite structure which utilizes a slip formed cast-in-place concrete stem or support and a prefabricated, bolted or site welded storage vessel. At this early stage in system planning, elevation would be such as to maintain no less than 40 psi in the distribution system.

Should there be some consideration for the public water system in the PPBOCES Campus being designed, constructed and operated to provide service to nearby commercial and/or residential development, outside the PPOBOCES ownership, consideration of moving elevated storage vessel to a higher topographic location may be advantageous. That consideration is, in general, solely dependent upon plans and agreements to serve adjacent development with potable water from a public water system (PWS).

C. OPERATION, MAINTENANCE AND MANAGEMENT OF WATER SYSTEM

As briefly discussed above, the public water system providing service to the PPBOCES Campus must be under the direct operation of a certified operator, both as a water treatment operator and a water distribution system operator. As indicated, this can be by any employee of PPBOCES who possess those necessary certifications issued by the State of Colorado or by contract to an organization or individual to provide those required services.

It is incumbent upon the ownership of the public water system (PPBOCES), to provide for financial support of all operations for maintenance, operation, renewals and replacement of the potable water system. The potable water system will be subject to periodic inspections by the Colorado Department of Public Health and Environment, Water Quality Control Division, who will inspect and report on compliance, or non-compliance, with the public water supply design criteria and operational considerations.

In addition to a basic part of operation and maintenance of the public water system is continual quality monitoring. Depending on the ultimate classification of the system, i.e., population equivalents served, the frequency and extent of monitoring will be specified by the Water Quality Control Division. This will include the following:

- Presence of disinfectant at minimum concentrations, frequent analysis at the extent of the distribution system
- Bacteriological monitoring, frequent monitoring based on classification of distribution system
- Periodic monitoring of inorganic chemicals, frequent monitoring at outset of operation with reduced monitoring after period of complete compliance
- Organic chemicals, initial monitoring with reduced monitoring frequencies to multiple year intervals following demonstration of compliance
- Radiological constituent monitoring, initial quarterly monitoring or in the event of non-compliance, reduced to multiple year interval monitoring with consistent compliance

D. FINANCIAL PLANNING - DEVELOPMENT, OPERATIONS & MANTENANCE

The development, implementation, operation, maintenance renewal and replacement of the PPBOCES public water system is a responsibility of the Pikes Peak BOCES as of the writing of this report. The PPBOCES is examining alternative institutional arrangements that best suit the implementation and performance of the responsibilities required as an owner and operator of the public water supply.

Financing plans are in the process of being fully developed by PPBOCES for all infrastructure on the proposed Vocational Education Campus including the water production, treatment and distribution infrastructure.

APPENDIX A – PPBOCES Land Ownership Deed & QCD to Denver Basin Water Rights Determination Allocation 2230352335/1/202311:58 AMPGS3\$23.00DF \$87.00Electronically Recorded Official Records El Paso County COSteve Schleiker, Clerk and RecorderTD1000Y

DOCUMENTARY FEE: \$87.00

SPECIAL WARRANTY DEED

CHARLOTTE A. HOWARD ("Grantor"), for the consideration of TEN DOLLARS (\$10.00), in hand paid, hereby sells and conveys to **PIKES PEAK BOARD OF COOPERATIVE EDUCATIONAL SERVICES**, a board of cooperative educational services organized pursuant to the Boards of Cooperative Services Act of 1965. C.R.S. § 22-5-101 ("Grantee"), whose address is 2883 S. Circle Drive, Colorado Springs, CO 80906, in and to the following described real property in El Paso County, State of Colorado:

SEE ATTACHED EXHIBIT A

Also known as 0 Judge Orr Road, Peyton, CO 80831.

With all appurtenances, and warrants the title to such real property against all persons claiming to hold title by, through or under Grantor, subject to Statutory Exceptions pursuant to C.R.S. §38-30-113 (5) (a).



Special Warranty Deed Page 2

IN WITNESS WHEREOF, Grantor has caused this deed to be executed on the date set forth

below.

GRANTOR:

towo-

Charlotte A. Howard

STATE OF COLORADO)) ss. COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 28 day of $Mach_{,2023}$, by Charlotte A. Howard.

olloutzory

Witness my hand and official seal

My commission expires:

KRISTEN L. DE HERRERA NOTARY PUBLIC STATE OF COLORADO NOTARY ID 20064004626 MY COMMISSION EXPIRES 02/02/2026

Notary Public

EXHIBIT A LEGAL DESCRIPTION OF THE PROPERTY

A TRACT OF LAND LOCATED IN THE SOUTHWEST ONE-QUARTER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE WEST LINE OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST, BEING MONUMENTED AT THE NORTHERLY END BY A 3 1/2" ALUMINUM CAP IN A VAULT, STAMPED "LS 22103", AND AT THE SOUTHERLY END BY A 3 1/2" ALUMINUM CAP IN A VAULT, STAMPED "LS 17496", ASSUMED TO BEAR N 00 DEGREES 08 MINUTES 51 SECONDS E A MEASURED DISTANCE OF 5273.76 FEET.

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST; THENCE N 00 DEGREES 08 MINUTES 51 SECONDS E ON THE WEST LINE OF SAID SECTION 35 A DISTANCE OF 30.00 FEET; THENCE S 89 DEGREES 28 MINUTES 49 SECONDS E AND ALONG A LINE BEING 30.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST ONE QUARTER OF SAID SECTION 35 A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING;

THENCE N 00 DEGREES 08 MINUTES 51 SECONDS E AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL WITH THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 35 A DISTANCE OF 1288.45 FEET;

THENCE S 89 DEGREES 30 MINUTES 28 SECONDS E AND ALONG THE NORTH LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 35 A DISTANCE OF 1282.36 FEET TO THE NORTHEAST CORNER OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 35;

THENCE N 00 DEGREES 11 MINUTES 54 SECONDS E AND ALONG THE WEST LINE OF THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 35 A DISTANCE OF 623.49 FEET; THENCE S 44 DEGREES 41 MINUTES 19 SECONDS E A DISTANCE OF 260.17 FEET;

THENCE S 58 DEGREES 46 MINUTES 12 SECONDS E A DISTANCE OF 373.98 FEET;

THENCE S 67 DEGREES 57 MINUTES 57 SECONDS E A DISTANCE OF 330.63 FEET:

THENCE S 75 DEGREES 13 MINUTES 13 SECONDS E A DISTANCE OF 753.34 FEET;

THENCE S 21 DEGREES 28 MINUTES 54 SECONDS W A DISTANCE OF 256.36 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A DELTA OF 17 DEGREES 49 MINUTES 58 SECONDS, A RADIUS OF 979.51 FEET, AND A LENGTH OF 304.86 FEET;

THENCE S 44 DEGREES 29 MINUTES 49 SECONDS E A DISTANCE OF 49.50 FEET;

THENCE S 00 DEGREES 31 MINUTES 11 SECONDS W A DISTANCE OF 60.00 FEET;

THENCE S 45 DEGREES 31 MINUTES 11 SECONDS W A DISTANCE OF 49.50 FEET;

THENCE S 00 DEGREES 31 MINUTES 11 SECONDS W A DISTANCE OF 564.97 FEET TO A POINT ON A LINE BEING 30.00 FEET NORTH OF AND PARALLEL TO THE SOUTH LINE OF SAID SECTION 35;

THENCE N 89 DEGREES 28 MINUTES 49 SECONDS W AND ALONG A LINE BEING 30.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION 35 A DISTANCE OF 2659.25 FEET TO THE POINT OF BEGINNING.

 223035235
 5/1/2023 11:58 AM

 PGS 3
 \$23.00
 DF \$0.00

 Electronically Recorded Official Records El Paso County CO
 Steve Schleiker, Clerk and Recorder

 TD1000
 N

QUIT CLAIM DEED

CHARLOTTE A. HOWARD

CHARLOS FLUCTED ("Grantor"), for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, in hand paid, hereby sells and conveys to **PIKES PEAK BOARD OF COOPERATIVE EDUCATIONAL SERVICES**, a board of cooperative educational services organized pursuant to the Boards of Cooperative Services Act of 1965, C.R.S. § 22-5-101 ("Grantee"), whose address is 2883 S. Circle Drive, Colorado Springs, CO 80906, all of Grantor's right, title, and interest in and to the following described water rights and structures located on, underlying, or appurtenant to the real property in El Paso County, State of Colorado, that is legally described in the attached **EXHIBIT A** (the "Property"):

Any and all water and water rights, whether adjudicated or unadjudicated, decreed or undecreed, absolute or conditional, tributary, nontributary, or not nontributary, surface or groundwater, direct use or storage, which are located on, underlying, or appurtenant to or in any way associated with the Property and its use, including, without limitation, all designated and/or Denver Basin groundwater underlying the Property including the groundwater that was allocated pursuant to the Colorado Ground Water Commission Determinations of Water Rights completed in 457-BD, 458-BD, and 459-BD; and also all ditches and ditch rights, storage facilities and storage rights, spring and seepage rights, wells, well permits, and other well registration information, water taps, and shares of stock or other interests in water, ditch, or reservoir companies, which rights, structures, or interests are located on or underlying the Property, or are appurtenant to or in any way associated with the Property and its use;

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anyways appertaining to, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of Grantor, either in law or equity, of, in, and to the above bargained rights, structures, or interests.

TO HAVE AND TO HOLD the water rights, structures, and interests above bargained and described with the hereditaments and appurtenances, unto the Grantee, its heirs, and assigns forever.



55109418

Quit Claim Deed – Water Rights Page 2

IN WITNESS WHEREOF, Grantor has caused this deed to be executed on the date set forth

below.

GRANTOR:

A. Haward Charlotte Charlotte A. Howard

STATE OF COLORADO)) ss. COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 28 day of Man, 2023, by Charlotte A. Howard.

Witness my hand and official seal

My commission expires: <u>Julan 224</u>



Notary Public

EXHIBIT A LEGAL DESCRIPTION OF THE PROPERTY

A TRACT OF LAND LOCATED IN THE SOUTHWEST ONE-QUARTER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE WEST LINE OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST, BEING MONUMENTED AT THE NORTHERLY END BY A 3 1/2" ALUMINUM CAP IN A VAULT, STAMPED "LS 22103", AND AT THE SOUTHERLY END BY A 3 1/2" ALUMINUM CAP IN A VAULT, STAMPED "LS 17496", ASSUMED TO BEAR N 00 DEGREES 08 MINUTES 51 SECONDS E A MEASURED DISTANCE OF 5273.76 FEET.

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 64 WEST; THENCE N 00 DEGREES 08 MINUTES 51 SECONDS E ON THE WEST LINE OF SAID SECTION 35 A DISTANCE OF 30.00 FEET; THENCE S 89 DEGREES 28 MINUTES 49 SECONDS E AND ALONG A LINE BEING 30.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST ONE QUARTER OF SAID SECTION 35 A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING; THENCE N 00 DEGREES 08 MINUTES 51 SECONDS E AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL WITH THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 35 A DISTANCE OF 1288.45 FEET;

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THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A DELTA OF 17 DEGREES 49 MINUTES 58 SECONDS, A RADIUS OF 979.51 FEET, AND A LENGTH OF 304.86 FEET;

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THENCE S 45 DEGREES 31 MINUTES 11 SECONDS W A DISTANCE OF 49.50 FEET;

THENCE S 00 DEGREES 31 MINUTES 11 SECONDS W A DISTANCE OF 564.97 FEET TO A POINT ON A LINE BEING 30.00 FEET NORTH OF AND PARALLEL TO THE SOUTH LINE OF SAID SECTION 35; THENCE N 89 DEGREES 28 MINUTES 49 SECONDS W AND ALONG A LINE BEING 30.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION 35 A DISTANCE OF 2659.25 FEET TO THE POINT OF BEGINNING.

APPENDIX B – Form No. GWS-76: Water Supply Information Summary

FORM NO. GWS-76 05/2011	WATER SUPPLY INFORMATION SUMMARY STATE OF COLORADO, OFFICE OF THE STATE ENGINEER 1313 Sherman St., Room 821, Denver, CO 80203 Main (303) 866-3581 <u>dwr.colorado.gov</u>						
1 NAME OF D	Section 30-28-133 sufficient in terms of VELOPMENT AS F	(d), C.R.S. requinon of quantity, quality PROPOSED: Pi	res that the applica /, and dependabilitives Peak Board of the second	ant submit to the County, "Adequat ty will be available to ensure an ad f Cooperative Educational Service	e evidence that a water supply that is equate supply of water."		
		Caller Coller.	ampus				
2. LAND USE A	CTION: Approva	al of location, sub	division exemptior	n plat and Site Development Plan			
3. NAME OF EX SUBDIVISIO	KISTING PARCEL A N:	S RECORDED:	Not Applicable; p	parcel is not subdivided , FILING (UNIT)	, BLOCK , LOT		
4. TOTAL ACR	EAGE: 86.38 acres	5. NUMBER	OF LOTS PROPO	DSED 1 PLAT MAP	PENCLOSED? X YES or NO		
6. PARCEL HIS	STORY – Please atta	ach copies of dee	eds, plats, or other	evidence or documentation.			
A. Was parc B. Has the p If yes, de	 A. Was parcel recorded with county prior to June 1, 1972? YES or XNO B. Has the parcel ever been part of a division of land action since June 1, 1972? YES or NO If ves, describe the previous action: 						
7. LOCATION	OF PARCEL – Inclue	de a map delinea	ting the project are	ea and tie to a section corner.			
<u>SW</u> 1/4 of	the1/4, See	ction <u>35</u> , Tov	wnship <u>12</u>] N or 🔀 S, Range <u>64</u> 🗌 E or	r 🔀 W		
Principal Me	ridian (choose only o	one): 🗙 Sixth 🔲 I	New Mexico Ut	e Costilla			
Optional GP	S Location: GPS U	Init must use the	following settings:	Format must be UTM , Units	Easting:		
must be met	ers, Datum must be	NADOS, Unit mu	St de set to true N		Northing:		
8. PLAT – Loca Surveyor's P	tion of all wells on p lat: 🔲 YES or 🔀 N	roperty must be p O If not, scaled	lotted and permit i hand drawn skete	numbers provided. There are no exi ch: 🔲 YES or 🔀 NO	isting wells on the subject property.		
9. ESTIMATED	WATER REQUIRE	MENTS		10. WATER SUPPLY SOURCE			
	USE	WATER REC	UIREMENTS		NEW WELLS -		
		Gallons per Day	Acre-Feet per Year	WELL SPRING	PROPOSED AQUIFERS – (CHECK ONE)		
HOUSEHOLD US	E # <u>71</u> of units		13.98	WELL PERMIT NUMBERS	□ ALLUVIAL		
	SE # 116 479 of S E		15.2		UPPER DAWSON		
COMMERCIAE	5L # 110,478 01 5. F		10.2		LOWER DAWSON X LARAMIE FOX HILLS		
					🛛 DENVER 🗖 DAKOTA		
IRRIGATION # 0	.37 of acres with		1.59		CGWC: 457-BD/458-BD/459-BD □ OTHER·		
drip system for 80	1 trees						
STOCK WATERIN	IG # <u>N/A</u> of head	0	0		WATER COURT DECREE CASE		
OTHER:					NUMBERS:		
TOTAL			30.77				
				NAME PPBOCES Public Water System			
				LETTER OF COMMITMENT FOR			
(This may be required before our review is completed.)							
12. TYPE OF SEWAGE DISPOSAL SYSTEM							
SEPTIC TANK/LEACH FIELD X CENTRAL SYSTEM							
— • • •				DISTRICT NAME: Meridiar	Service Metropolitan District		
	N						
ENGINEERED SYSTEM (Attach a copy of engineering design.)							