

Memorandum

To: Jeff Mark, Leroy Landhuis, Landhuis Development
From: Rich Wray, Kiowa Engineering, (retired)
Subject: Bull Hill, Rolling Meadows and Lorson Ranch
Basin Closing Analysis
Jimmy Camp Creek Drainage Basin
El Paso County, Colorado
Date: **February 27, 2023**

I. Background information

2014 Jimmy Camp Creek DBPS- Kiowa Engineering
Hydrology, selected plan layout, improvement costs and fee estimates

1987 Jimmy Camp Creek DBPS

2022 Drainage basin planning study (in-progress)

2022 Drainage fees as approved by BOCC

2006 Rolling Hills Ranch MDDP prepared by Kiowa Engineering

II. 2014 Jimmy Camp Creek DBPS

1. Study was approved and adopted by the City of Colorado Springs and the City of Fountain. Hydrology is now being used in the planning for future development of the Banning-Lewis Ranch (City of Colorado Springs), and for developments within the City of Fountain. The hydrology and hydraulic analyses conducted for the watershed covered the following drainageways:

Unimproved major drainageways that lie in El Paso County include:

Lower Jimmy Camp Creek	14,000 LF
Upper Jimmy Camp Creek	4,000 LF
Stripmine Tributary	7,600 LF
Franceville Tributary	8,500 LF
East Fork Jimmy Camp Creek	<u>21,500 LF</u>
Total Major Drainageways	55,600 LF

Unimproved sub-drainageways that lie in El Paso County include:

Upper Jimmy Camp Creek	2,300 LF
Blaney Tributary	2,600 LF
Corral Tributary	5,000 LF
Stripmine Tributary	29,500 LF
Franceville Tributary	14,500 LF

East Fork Jimmy Camp Creek	<u>22,200 LF</u>
Total Sub-drainageways	76,100 LF

The major unimproved receiving and sub-drainageways that were evaluated in the 2014 DBPS that impact the subject Landhuis property include:

East Fork Jimmy Camp Creek	13,000 LF
East Fork Jimmy Camp Creek Sub-drainageways	2,000 LF

From the above numbers, 23 percent of the major drainageways studied in the DBPS cross through The Bull Hill and Rolling Meadows properties, Three (3) percent of the sub-drainageways lie within the Bull Hill and Rolling Meadows properties. All of the major and sub tributary drainageway facilities within Lorson Ranch have already been constructed.

2. The 2014 DBPS was not approved and accepted by El Paso County for use in the planning for development along the major receiving drainageways. It is presently required by the County that the hydrology from the 2014 DBPS be used in the design of structures. Reason for non-adoption by the county was that the location of future full spectrum detention basins (FSDs), were not shown in the DBPS. From a technical perspective, the location of FSDs is not needed for the design of major drainageways and bridge structures. The hydrologic affect of FSD once fully implemented is the maintenance of peak discharges at existing development levels for all recurrence intervals. The required FSD storage volume was provided in the DBPS and costs associated with FSD provided for the area of the watershed within El Paso County,

3. Drainage fees were estimated for areas within the City of Colorado Springs and El Paso County. Drainage fees were based upon only the capital improvement costs to stabilize the major receiving and sub- drainageways as defined in the DBPS. A storage fee associated with FSD was provided in the DBPS for both the County and City.

4. Since the City's acceptance of the 2014 DBPS, the area of the watershed within the Banning-Lewis Ranch (BLR), was determined to be a "closed basin" as part of the the Development Agreement between BLR and the City of Colorado Springs. With the assumption of a closed basin, drainage and bridge fees will not be assessed and reimbursement related to the construction of FSDs or stabilization of the major and sub-drainageways will not be allowed.

III. 1987 DBPS

This study is no longer used by the County when planning for development within the watershed, The location of regional detention basins shown in the 1987 DBPS are not used by the County for stormwater management planning. None of the regional detention basins shown in the 1987 DBPS have ever been built. However the present day drainage and bridge fees that were first determined in the 1987 DBPS were used by the County to develop the miscellaneous basin fee that is now assessed against plattable acreage within the Jimmy Camp Creek watershed.

IV. 2022 DBPS (in-progress)

EPC retained consulting engineering firm Stantec Engineering in 2021 to update the 2014 DBPS preliminary plan and to develop a fee structure for the County portion of the Jimmy Cam Creek watershed. At this time the study has progressed only into the hydrologic and

hydraulic analyses phases and specifically the hydraulic analysis for the watershed's major tributaries. The hydraulic section of the report has been submitted to the County and is now being revised based upon County comments. County is presently waiting for a revised hydrology and hydraulic report. It is not clear at this time what the deliverable is for the hydraulic phase of the study. Being that the study has not been completed or reviewed through the hydraulic analysis phase, it is estimated that the development of the fee structure will not occur until mid-2023. Adoption of the updated study and fee structure may not occur until late 2023 or 2024. Development of the fee structure is usually one of the last steps of a DBPS scope and is routinely provided for public review prior to advancing the DBPS and fee(s) to Drainage Board and ultimately the BOCC.

It is advised at this time that stakeholders within the watershed (such as Landhuis Development), inquire with the County what the timing is for the completion of the DBPS. Until such time the study is ready for adoption, the stakeholders should be included in the review of the the updated DBPS so that impact upon their properties can be evaluated. It is not clear what level of stakeholder outreach has been carried out thus far in the process.

V. Drainage Basin Fees

1987 DBPS Basin Fees

The drainage fees developed as part of the 1987 DBPS included major drainageway facilities necessary or the stabilization of Jimmy Camp Creek and its major receiving drainageways. The drainage fee also included the cost for regional detention facilities that were shown in the 1987 DBPS. Stabilization of the drainageways was to be achieved through the installation of riprap bank linings in combination with drop or grade control structures necessary to reduce the longitudinal slopes. Location of the grade control structures was not defined in the 1987 DBPS. The hydraulic design of the major drainageways utilize the future development condition discharges. Water quality storage was not considered in the design of the regional detention basins. Onsite water quality storage for developments was not required by the County when the 1987 DBPS was prepared and adopted.

Bridge fees were developed for the watershed. The location of future roadway crossings defined as bridges under EPC engineering criteria in use at the time of the 1987 DBPS was based upon the regional transportation plan in affect in 1987. A few of the bridges shown in the 1987 DBPS have been built. There have also been two bridges built associated with arterial roadway projects that were not shown on the regional transportation plan relied upon when the 1987 DBPS was prepared.

The drainage and bridge fees estimated in the 1987 DBPS (with annual adjustments), were assessed against platted acreage until 1999. At that time the watershed was reclassified as a miscellaneous basin since the watershed did not have a current DBPS that adequately addressed stormwater management planning for the watershed. An average of the drainage and bridge fees using all watersheds that had had a DBPS prepared (since 1983) was calculated. This resulted in a significant increase in most all of the miscellaneous basins due in part to the high fees estimated in the 1987 DBPS. Additionally, by going to an average fee in 1999, the connection between fees and an actual list of identified stabilization measures was lost. The regional detention basin facilities and their contribution to the drainage fee is suspect as well. The use of regional detention is now discouraged by criteria and stormwater storage cannot be located across a receiving waterway as defined by the U. S. Army Corps of Engineers.

Subsequent to the averaging of fees in 1999, the County revised the per acre requirement to “per impervious acre”, which is what is applied today. It is the opinion of the writer that the use of percent imperviousness as required when fees are estimated for a given parcel has caused the basin fee to be in deficit; that is, the cost of capital improvements remained unchanged but the plattable acreage subject to fee assessment decreased. This causes less fees to be collected that can then be used for reimburse costs for public facilities constructed in accordance with the governing DBPS. With this revision the drainage fee became further detached from the actual cost of the required stabilization and storage facilities. Due to the uncertainty of the adequacy of the fee structure for Jimmy Camp Creek as estimated in 1999, a surety was developed charged against impervious acreage. It is not clear how the amount of the surety was determined by the County.

2014 DBPS Basin Fees

Two fees were proposed for the portion of the Jimmy Camp Creek watershed within the City of Colorado Springs the 2014 DBPS; a major drainageway fee and a storage fee. The drainageway fee was for the capital costs of stabilizing the **major receiving drainageways** (reference Exhibit 1, 2014 Jimmy Camp Creek DBPS). Only the major drainageway of East Fork Jimmy Camp Creek impacts Bull Run and Rolling Meadows properties. Stabilization of East Fork Jimmy Camp Creek and Jimmy Camp Creek through Lorson Ranch has already been completed. For the major drainageways a variety of stabilization measures were proposed in the 2014 DBPS aimed at addressing environmental standards, floodplain preservation and long-term invert degradation depending upon the nature of the localized hydrology and floodplain configurations. Within the 2014 DBPS, drainage fees were provided separately for the City of Colorado Springs and El Paso County. The costs for drainageway improvements and the required FSD storage volume for the area of the watershed within the County were removed from the final report as the County was not prepared to adopt the DBPS at that time.

The storage fee for the watershed was determined using an estimate of the total FSD storage volume that would be required to store the increase in runoff due to development in the watershed. Unit costs for full FSD were developed using actual costs for FSDs constructed in the City and County. As with the drainage fee, a storage fee was estimated for both the City and the County. Per County requirements, the drainage and storage fees were combined into a single drainage basin fee.

As part of gaining approval for the 2014 DBPS, El Paso County requested that the drainage and storage fees estimated for the County area be omitted from the final report. Primary reason was that the 2014 DBPS did not go far enough in presenting the location(s) of FSDs within the County. Because of this the County reverted back to the current fee structure when assessing bridge and drainage fees.

It was discussed with the County that the location of the FSDs cannot be accurately determined and therefore just created potential conflicts in the future as the watershed develops. It was also pointed out that it does not matter where the FSDs are sited, only the total volume of the increase in runoff due to urbanization matters. Finally it was argued that a fee should not be assessed based upon facilities that are required by **criteria** and that the cost and implementation of FSD was the responsibility of the developer. It is therefore important at this time to understand the assumptions that will go into any fees developed as part of the County’s ongoing DBPS update.

Bridge fees were not estimated in the 2014 DBPS. Reasoning for this was that all future bridges will be sized to carry existing condition discharges as presented in the 2014 DBPS. As

such there is no technical basis to assessing a bridge fee since development is required to provide FSD which acts to maintain peak discharges to predevelopment conditions.

The fees developed for the City of Colorado Springs:

Major Drainageway Fee	\$ 6,519 per acre
Storage Fee	\$ 2,125 per acre

The above fees are presented as a reference point to what could be expected for the area within El Paso County if similar assumptions are applied. As stated in the DBPS, only a per acre fee to cover the stabilization costs for the major receiving and sub- drainageways was proposed for two reasons: (1) the major drainageways serve all areas within the watershed regardless of jurisdiction and therefore should be a shared cost even though the predevelopment discharges are assumed because of the implementation of FSD, and (2) even with FSD the major receiving drainageways will be negatively impacted by the urbanization of the watershed due to the increase in the duration of runoff. Bank and invert stabilization is still necessary even with the implementation of FSD.

Stabilization measures and associated costs for the subtributaries were included in the 2014 DBPS. It was suggested during the preparation and associated review of the 2014 DBPS that the stabilization of the subtributaries not be included in the estimation of drainage fee as their design and costs cannot be adequately defined at the DBPS level of analysis. Costs for the stabilization of the subtributaries were ultimately included in the total capital costs and used for the estimation of drainage fees.

A storage fee was estimated based upon the costs for existing FSD facilities constructed and in operation at the time the 2014 DBPS was prepared. A per acre storage volume was developed as well as a per acre storage fee. Storage fee estimated in the the 2014 DBPS was \$2,125 per acre. The cost to provide FSD is highly dependent upon the physical layout of the developing watershed. The future land uses assumed in this DBPS, while accurate for the proposes of a planning level study, cannot be used to exactly determine the location of future FSDs. As stated in the 2014 DBPS, the location of FSDs should be determined at the MDDP level.

As it relates to this analysis, it is the writer's opinion that fees to cover the costs of future FSDs should not be considered by the County since the implementation of FSD is a requirement of criteria. There is no reliable way to come up with a cost for FSD storage since the total FSD volume is dependent upon the imperviousness of the sub-watershed draining to it. As such the implementation of a "storage fee" would constantly be subject to revision as requests associated with the reimbursement of accepted FSDs are made to Drainage Board. Cost for the construction of FSDs should be borne solely by the developer and reimbursement of required FSD facilities not allowed.

VI. Analysis of Basin Closing for Bull Hill, Rolling Meadows and Lorson Ranch Properties

The following information has been used in the evaluation of an assumption that all proprieties owned by Landhuis should be considered for a closed basin due to the extensive holdings within the El Paso County portion of the watershed. An amended Exhibit 1 from the 2014 DBPS has been included with this memorandum and shows the location the Bull Hill, Rolling Meadows and Lorson Ranch parcels subject to the closing of the basin to fees.

1. Area of watershed within EPC:	28.9 SM (18,496 acres)
2. Un-platted area of within EPC per 2014 DBPS:	21.9 SM (14,028 acres)
3. Present day plattable acreage subject to fees	7,800 acres
4. Unplatted acreage owned by Landhuis Properties	1,890 acres
5. 2022 fees for JCC	Drainage \$21,134
	Bridge \$989
	Surety \$7,285

The plattable acreage shown above was determined using the 14,028 acres presented in the 2014 DBPS less the areas within the County that has developed since 2014 (Lorson Ranch and the National Cemetery), and those areas of the County that were shown to be undevelopable, primarily that portion of the watershed that lie along the Corral Bluffs (reference Figure VII-2, 2014 DBPS). The drainage fee as currently assessed by the County theoretically includes the cost for stormwater storage facilities,

Costs for Major and Sub-drainageway Stabilization and Stormwater Storage

Using actual construction costs for the East Fork Jimmy Camp Creek within Lorson Ranch, a unit stabilization cost was estimated at \$1000 per lineal foot. The design of the drainageways upstream from Bull Hill and Rolling Meadows (42,600 lineal feet), would probably be similar to what was constructed for the East Fork Jimmy Camp Creek in Lorson Ranch. Using this unit cost a total major drainageway cost of \$42.6 million was estimated.

A 60 percent design has been completed by Matrix Engineering for the East Fork Jimmy Camp Creek drainageway through Bull Hill and Rolling Meadows (13,000 lineal feet). A 60 percent design cost of \$26.8 million has been estimated. Total estimate for the major drainageways in El Paso County is \$69.4 million.

Using the hydraulic design and channel sections developed in the 2014 DBPS for the sub-drainageways, a unit cost of \$600 per lineal foot was estimated. Using this unit cost the total cost for sub-drainageways in El Paso County was estimated at \$45.7 million.

In order to be consistent with the current fee structure that technically includes the cost of stormwater detention facilities, an estimate of the storage costs for the entire basin was made. The cost of the storage facilities was assumed to be equal to the per acre fee developed in the 2014 DBPS brought forward to 2022. Storage costs for El Paso County was estimated at \$22.7 million.

Total for the major and sub- drainageways and stormwater storage in El Paso County is estimated at \$137.8 million.

Total major and sub-tributary drainageway facility costs for Bull Hill and Rolling Meadows is estimated at \$28.0 million. (reference, Matrix 60 percent Opinion of Cost, Bull Hill and Rolling Meadows Channel Design). The estimated cost for stormwater storage within Bull Hill, Rolling Meadows and Lorson Ranch is \$5,3 million. Total stormwater facilities are estimated at \$33.3 million.

Drainage Fees for Bull Hill, Rolling Meadows and Lorson Ranch

Based upon the **current** fee structure for the Jimmy Camp Creek watershed total fees have been estimated. Fees have been estimated using 1,815 developable acres which assumes that the East Fork Jimmy Camp Creek 100-year floodplain is not subject to fee assessment (60 acres per 2018 El Paso County Flood Insurance Study).

Drainage and Surety Fees:	\$28,419/acre
Acreage of Landhuis property subject to fees	1,815 acres
Total drainage fees	\$51.6 million

The estimate for fees due on plattable land within Bull Hill, Rolling Meadows and Lorson Ranch far exceeds the total capital costs by a factor of 1.5. Note that this is using a conservative unit cost for the stabilization of the major and sub-drainageways (60 % design), within Bull Hill and Rolling Meadows. The unit costs for the offsite major drainageways will most likely be less than those applied herein because of the decreased discharges in the upper watershed due to lower densities of future development above Drennan Road. The conclusion that can only be reached is that the drainage and surety fees currently being assessed by El Paso County do not reflect the anticipated costs for stabilization and storage, and that the surety is not only excessive, but not necessary to cover future costs

Projected Drainage Fees for Jimmy Camp Creek Watershed

Using the estimated lengths of the major and sub-drainageways and the the unit costs presented above, a total stabilization cost for the watershed, inclusive of Bull Hill and Rolling Meadows was determined. The total cost was then used to develop a per acre fee:

Total major drainageway stabilization	\$69.4 million
Total sub-drainageways	\$45.7 million
Storage cost	<u>\$22.8 million</u>
Total stormwater facility costs	\$137.9 million
Total developable acreage (2022)	7,800 acres
Drainage fee for stabilization and storage	\$17,679 per acre

The above fee was then recalculated to reflect the removal of the 1,830 developable acres associated with Bull Hill, Rolling Meadows and Lorson Ranch. The cost for the stabilization of the major and sub- drainageways within Bull Hill and Rolling Meadows was removed from the total stabilization costs estimated for the entire watershed:

Total major drainageway stabilization	\$42.6 million
Total sub-drainageway cost	\$44.5 million
Total storage costs	<u>\$17.4 million</u>
Total stormwater facilities	\$104.5 million
Total developable acreage	5,970 acres
Drainage fee for stabilization and storage	\$17,410 per acre

As reflected in the the above fees estimates, removing the acreage and stabilization costs associated with Bull Hill, Rolling Meadows and Lorson Ranch from the fee calculation illustrates that there would be no increase in the drainage, feea and possibly a slight reduction. Accordingly, those properties that would remain within the County's Jimmy Camp Creek fee system would not be impacted by higher fees as a result of the property covered by Bull Hill,

Rolling Meadows and the remaining unplatted parcels within Lorson Ranch being removed from the calculation of fees.

The effect of taking into account the impervious acreage in the closing calculations may have an impact upon whether the drainage fee is increased, or decreased with the removal of Bull Hill, Rolling Meadows and Lorson Ranch from the overall watershed acreage. Calculations thus far have used gross acreage. An average impervious value of 57.5 percent was developed in the 2014 DBPS. It is very likely that the average imperviousness for the remaining areas of the County within the Jimmy Camp Creek watershed, including East Fork Jimmy Camp Creek, is less than 57.5 percent. Therefore future FSD storage facility costs would probably be less than that estimated in the 2014 DBPS

Feasibility of Closing the Basin

When requesting that property be closed from the overall watershed fee system what being proposed is that a subject property will not be assessed drainage fees in return for covering the cost of drainageway stabilization and storage as part of developing the property without reimbursement through the fee system. Past experience with basin closing issues is that exempting a property from fee assessment have only been considered when the subject fees are **not increased at all** for those properties that remain in the fee system. In this case it appears that removing the property encompassed by Bull Hill and Rolling Meadows as well and the remaining unplatted land within Lorson Ranch, **would not increase** the drainage fee. The cost estimates for drainageway stabilization shown herein and used for the calculation of fees shown above are feasibility level except for the 60 percent design produced by Matrix for Bull Hill and Rolling Meadows. Through further design analysis it may be possible to mitigate any possible increase in the fee. Drainageway planning for the property as well as the Jimmy Camp Creek watershed in general as is now being conducted needs to advance to a higher level of design. At that point a more accurate estimate of costs and fees can be applied. .

One other possibility to be considered could be to close the entire East Fork Jimmy Camp Basin related to the assessment of drainage fees. With what has already been constructed of the East Fork as part of the Lorson Ranch development and the 13,000 lineal feet that crosses through Bull Hill and Rolling Meadows, very little major drainageway remains in the East Fork watershed, all of which lies north of Drennan Road. The the land north of Drennan Road will more than likely develop at lower densities due to the topography of the upper watershed. Lower densities such a rural residential pay very little in drainage fees to begin with (due to lower imperviousness), and typically have lower overall stormwater facility costs.

VII. Conclusions and Recommendations

Based upon the feasibility level analysis conduct herein, conclusions and recommendations have been developed for consideration by Landhuis Development.

Conclusions

1. The current fee structure being used by the County for the assessment of drainage fees is overestimating the actual cost of future stabilization and storage measures and therefore causing high per acre fees. The assessment of a surety further inflates the fees being assessed.

2. The drainage fees as now assessed are not based upon a technically current concept for what the stabilization will look like going forward. Therefore the current drainage fees for

Jimmy Camp Creek within El Paso County are not founded on a firm technical basis. Updating the DBPS should help to remedy this situation.

3. There is feasibility in pursuing the concept of closing the Bull Hill, Rolling Meadows and Lorson Ranch properties to fee assessment. The finding of no impact upon fees as estimated herein may prove to be accurate, however further design analysis needs to be completed. Future planning needs to be completed to gain a more reliable estimate of future costs.

4. There appears not to be a reason to have a bridge fee in the Jimmy Camp Creek watershed. The construction of further arterial roadway bridges (which meet the County's definition of what qualifies to be considered a bridge), is not anticipated. Additionally the implementation of FSD by the County results in bridges only needing to have hydraulic capacity to pass existing condition discharges.

5. It is likely that the fees produced in the update to the DBPS will be lower than the fees as now assessed. Sureties paid thus far would then have to be refunded per the County resolution that established the surety.

Interim Recommendations

1. Establish and maintain contact with El Paso County Engineering regarding the status of the DBPS update. If possible Landhuis should establish itself as a stakeholder in the basin. This is pretty routine in the process of completing a DBPS, however at this time it is not known if outreach to stakeholders has taken place thus far in the process.

2. Update the Rolling Hills MDDP so as to be better prepared to provide design concepts for the drainageway and so that the concepts can be reflected in the updated DBPS. (It is not clear if the County's consultant has incorporated the East Fork Jimmy Camp design as shown in the approved Rolling Hills MDDP or the design shown in the 2014 DBPS for that matter).

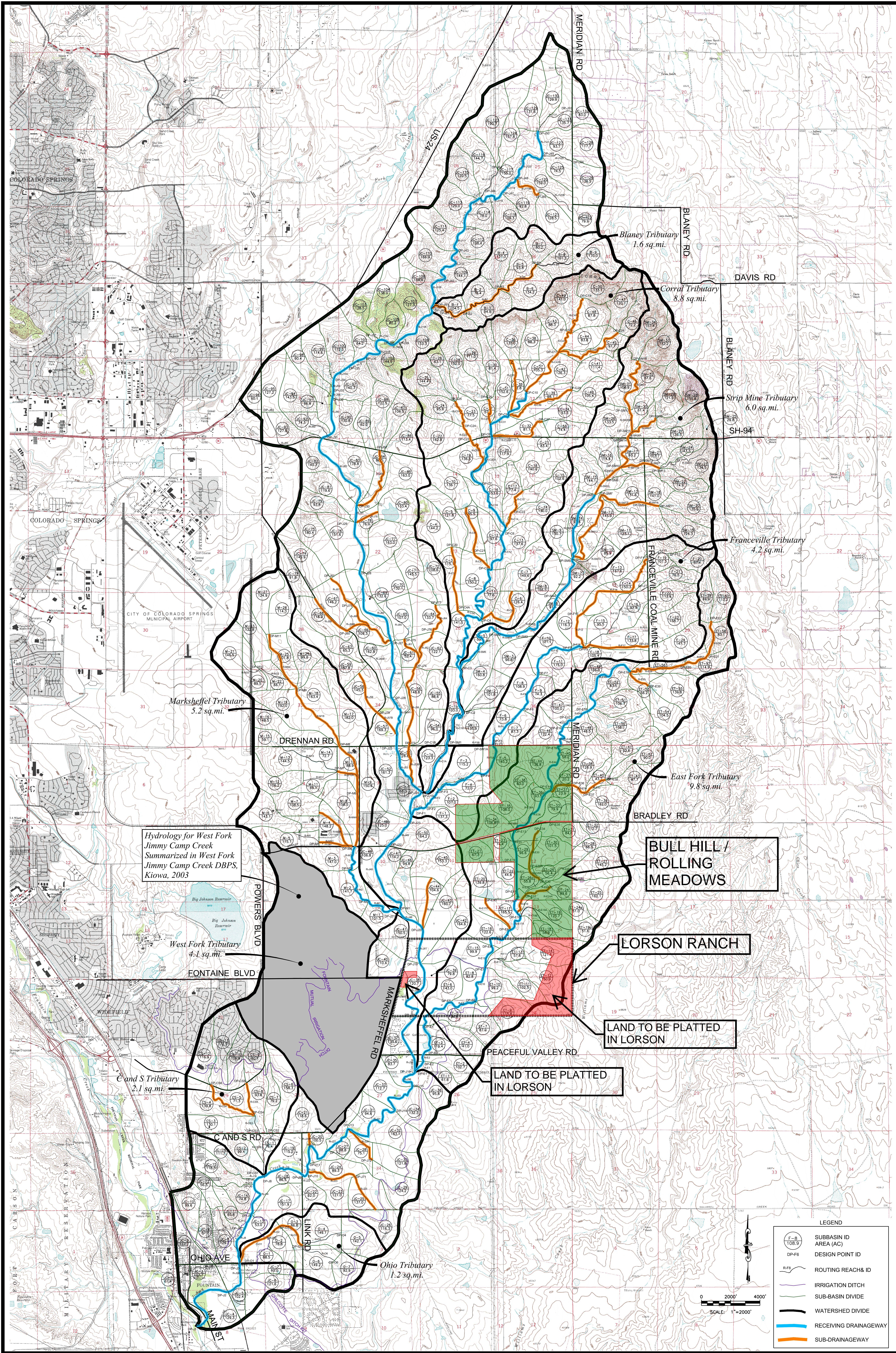
3. Landhuis should provide the County and its consultant updated development plans for Bull Hill and Rolling Meadows if they are available. If Landhuis is moving forward with the a revised site plan(s) the ODP will need to be updated as well. Siting of FSD's in the DBPS should be consistent with the what is envisioned in the ODP.

4. In the absence of timely approval of the updated Jimmy Camp Creek DBPS and the adoption of revised drainage fees (say two years from now or longer), Landhuis may want to seek an opinion as to whether or not the County can legally assess the drainage fees based upon the weak technical foundation related to capital drainageway costs as now represented in the current fee and surety. It has been established herein that the current fee is overestimating the actual costs of facilities.

5. As the DBPS update moves to completion, Landhuis should request to be included in the review capital costs and fee calculations. The calculation of a fee depends upon an accurate assessment of plattable acreage that remains in the basin. Once the plattable acreage is reestablished in the DBPS update, the potential impact of closing the basin can be more accurately assessed. Reviewing the updated DBPS in this regard is a key step.

6. Based upon the calculations presented, Landhuis Properties should have discussions with the County regarding reimbursement of sureties that have been paid today associated with the platting of Lorson Ranch.

7. Attend workshops that are used to inform the Drainage Board. Workshops have generally been conducted over one or two sessions depending upon the complexity of the watershed or the number of comments received by the Drainage Board regarding the update.



Hydrology for West Fork Jimmy Camp Creek Summarized in West Fork Jimmy Camp Creek DBPS, Kiowa, 2003

BULL HILL / ROLLING MEADOWS

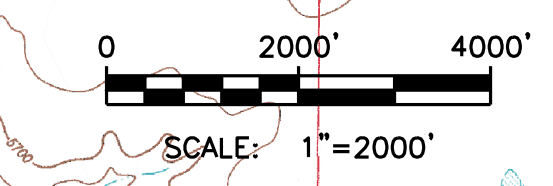
LORSON RANCH

LAND TO BE PLATTED IN LORSON

LAND TO BE PLATTED IN LORSON

LEGEND

	SUBBASIN ID
	AREA (AC)
	DESIGN POINT ID
	ROUTING REACH ID
	IRRIGATION DITCH
	SUB-BASIN DIVIDE
	WATERSHED DIVIDE
	RECEIVING DRAINAGEWAY
	SUB-DRAINAGEWAY



**JIMMY CAMP CREEK WATERSHED
DRAINAGE BASIN PLANNING STUDY
SUBBASIN MAP**
CITY OF COLORADO SPRINGS, COLORADO

Project No.:	14008
Date:	APRIL 2015
Design:	RNW
Drawn:	EAK
Check:	
Revisions:	