No. 141, Original

In the

SUPREME COURT OF THE UNITED STATES

STATE OF TEXAS,

Plaintiff,

v.

STATE OF NEW MEXICO and

STATE OF COLORADO,

Defendants.

OFFICE OF THE SPECIAL MASTER

DECLARATION OF GREGORY K. SULLIVAN, P.E.

IN SUPPORT OF JOINT MOTION OF THE STATE OF TEXAS, STATE OF NEW MEXICO, AND STATE OF COLORADO FOR ENTRY OF CONSENT DECREE SUPPORTING THE RIO GRANDE COMPACT

November 14, 2022

I, Gregory K. Sullivan, P.E., hereby declare as follows:

1. I am over 18 years of age and have personal knowledge of the information stated herein.

2. I am a disclosed expert in this case.

3. I have a Bachelor of Science degree in Civil Engineering from Colorado State University (1985), and a Master of Science degree in Civil Engineering from the University of Colorado, Denver (1990).

4. From 1985 until 1990, I was employed as a water resources engineer by J.W. Patterson and Associates in Denver, Colorado.

5. From December 1990 to the present, I have been employed by Spronk Water Engineers, Inc. ("SWE") in Denver, Colorado. My current position at SWE is President and Senior Water Resources Engineer.

6. Throughout my career with SWE, I have served as a primary consultant to numerous water providers in the areas of water supply planning and water rights engineering. In that role, I have been responsible for technical analyses supporting changes of water rights, exchanges, augmentation plans, and other water right matters.

7. I have led the development of complex surface water operations models that simulate water demands and how those demands may be met by available water supplies and water rights. On behalf of the State of Kansas, I operated and maintained the Hydrologic-Institutional Model of the Arkansas River Basin that supported Kansas' successful original action lawsuit in Kansas v. Colorado in the U.S. Supreme Court (No. 105 Original), and I provided expert testimony in that role before the Special Master in that case. Since 1996, I have served on the

Eastern Snake Hydrologic Modeling Committee that guides the development and use of a regional ground water model of the Eastern Snake River Plain Aquifer in Idaho.

8. I have been accepted by various courts as an expert in water resources engineering, water rights engineering, hydrologic modeling, groundwater modeling, hydrology, water measurement, evaluation of beneficial use, and data analysis.

9. My professional involvement with Lower Rio Grande issues in New Mexico and Texas began in 1999 and my work has involved, among other things:

    a. Compilation and review of hydrologic and water use data in the Lower Rio Grande area.

    b. Development of a surface water database that supports New Mexico's technical analyses and hydrologic modeling.

    c. Development of canal and farm budget models of the irrigation systems of the Rio Grande Project ("Project"), the Hudspeth County Conservation and Reclamation District No. 1 ("HCCRD"), and the Juarez Irrigation District ("JID) in Mexico.

    d. Review and analysis of the 2008 Operating Agreement ("2008 OA") for the Project.

    e. Review and analysis of historical Project operations.

    f. Development of the Integrated Lower Rio Grande Model ("ILRG Model").

    g. Use of the ILRG Model to analyze the claims and counterclaims of the parties to this case.

    h. Review of technical analyses and modeling submitted by experts for the State of Texas and the United States.

    i. Litigation support for New Mexico Counsel.

10. My curriculum vitae is attached.

Proposed Decree

11. The proposed Consent Decree establishes an index-based methodology termed the Effective El Paso Index ("EEPI") for computing and accounting New Mexico's annual delivery to Texas consistent with the equitable apportionment of water between Texas and New Mexico downstream of Caballo Reservoir under the Rio Grande Compact. The proposed Consent Decree includes an appendix that contains technical information related to the EEPI methodology and accounting.

12. On behalf of New Mexico, I participated as a primary member of the technical review and support committee that assisted the States' counsel in extensive negotiations and drafting of the Consent Decree and supporting index appendix. I worked closely with counsel on evaluating the Index methodology and all data supporting the calculations for the Index methodology. The States' final Consent Decree and supporting appendix are a result of my work with counsel and other State technical representatives. The statements in this declaration are my opinions and derived from my direct involvement in evaluating and assisting with drafting the Consent Decree and supporting materials.

13. Key provisions of the proposed Consent Decree and the EEPI methodology are described in a concurrent declaration prepared by New Mexico expert, Dr. Margaret Barroll. I have reviewed Dr. Barroll's declaration and agree with her description of the EEPI methodology.

Effective El Paso Index Derived from D2 Period (1951-1978) Data

14. The EEPI was derived based on analysis of historical Project operations during the D2 Period from 1951-1978. This is the same period that was used by Reclamation to derive the D1/D2 method of Project allocation. From 1979 – 2005, Reclamation used the D1/D2 method to

determine annual Project Allocations to EBID and EPCWID and the annual obligation to Mexico at the Acequia Madre pursuant to the Convention of 1906. Since 2005, the annual Project Allocation to EPCWID and the obligation to Mexico have continued to be based on the D1/D2 method, while the Project Allocation to EBID was changed by Reclamation to the different method described in the 2008 Operating Agreement.

15. Since the EEPI was also developed using data from the D2 Period, both the D1/D2 allocation procedure and the EEPI reflect the same D2 "Baseline" Condition. This Baseline Condition effectively incorporates the historical effect on Project Supply and Rio Grande flows resulting from New Mexico pumping in the Rincon and Mesilla basins and Texas pumping in the Texas portion of the Mesilla basin during the D2 Period.

EEPI Departures

16. There are various factors that will prevent the Index Delivery from matching the Index Obligation each year resulting in positive and negative Index Departures. Factors that will contribute to Index Departures include the following:

    a. Changing river conditions between Caballo Reservoir and the El Paso gage caused in part by variations in surface water and groundwater uses by New Mexico and Texas water users.

    b. EPCWID carrying over portions of its Project Allocation in the current year for delivery in subsequent year(s).

    c. Variations in return flows from that accrue upstream of the El Paso Gage during the non-release season.

d. Use of release accounting when only one District is ordering Project water[1].

e. Differences between the EEPI accounting and Project Accounting for the Texas Mesilla[2].

In consideration of the above factors, the proposed EEPI methodology allows for departures between the annual Index Deliveries and annual Index Obligations provided that the accrued Index Departures remain within certain limits.

17. The accrued Negative Departure limits of 150,000 acre-feet during the first five years and 120,000 acre-feet thereafter are necessary to accommodate potential Index Departures that may result from the factors listed above, many of which are not within New Mexico's control.

18. The accrued Negative Departure limits of 150,000 acre-feet during the first five years and 120,000 acre-feet thereafter are relatively small considering the amounts of water that are typically delivered to Texas.

19. In my opinion, the EEPI methodology results in annual Index Obligations to Texas that are on average consistent with the historical average annual deliveries to Texas during the D2 Period.

Rio Grande Project Allocation and Accounting Adjustments for Consistency with EEPI

20. The Rio Grande Project is operated by Reclamation to deliver water ordered by EBID, and EPCWID, and to deliver water to Mexico pursuant to the Convention of 1906. Reclamation

[1] Under release accounting, when only one District is ordering that District is charged for the Caballo Release rather than the amount of water delivered.
[2] EEPI accounting is based on El Paso stream gage flows and Texas Mesilla agricultural consumptive use from surface water and groundwater, while Project Accounting is based on surface water deliveries for irrigation use.

compiles the daily orders, assesses the river conveyances losses, and then sets the Caballo Release to deliver the orders with a minimum of waste.

21. Project operation and accounting must be consistent with the Index Obligation and therefore, as detailed in the Appendix to the proposed Consent Decree, the following adjustments will be necessary:

    a. The Index Obligation is determined based on Caballo Releases during the current year and the prior year. Consistent with this, the EPCWID Project Allocation will be calculated using the Modified D2 Equation (two-year D2 equation) described in paragraph 39.a of the Barroll declaration and in paragraphs 79-82 of the declaration by Texas Expert, William Hutchison.

    b. The Index Delivery is quantified at the El Paso Gage[3]. Consistent with this, deliveries of Project Supply to EPCWID in the El Paso Valley will be measured and quantified at the El Paso Gage and will no longer be quantified at the canal headings of the Franklin and Riverside Canals and the El Paso Water municipal intakes. Changing the accounting point will align the accounting point with the Index point at the El Paso gage and reduce the potential locations involved in determining Project Deliveries.[4] Details of the proposed El Paso Gage charge point

[3] The remainder of the Index Delivery is quantified based on computed depletions to Rio Grande flow from surface water and groundwater use for irrigation and non-irrigation purposes in the Texas Mesilla upstream of the El Paso gage.

[4] Proposed locations include the El Paso Gage and Acequia Madre. Current potential locations include Franklin Canal Gage, Ascarate Wasteway, Riverside Canal Gage, Jon Rogers WTP, Robertson Umbenhauer WTP, Haskell WWTP, Bustamante WWTP, and Fabens drain diversions. Not all potential locations are currently used in Project accounting.

for Project deliveries are described in paragraph 39.b, 39.c, and 39.d of the Barroll declaration.

c. Project Carryover accounting will include reducing Carryover volumes for reservoir evaporation losses and adjusting Carryover for differences in Project delivery performance between the year that Carryover accrues and the year that Carryover is delivered. These adjustments will reduce the effect of Project Carryover accounting on Project Supply. Details of the proposed modifications to Carryover accounting are described in paragraph 40 of the Barroll declaration.

d. For the reasons described in paragraph 16 above, operation of the EEPI will result in positive and negative annual and accrued Index Departures. To keep accrued positive and negative departures within reasonable limits, transfers of Project allocation from one district to the other will be needed from time to time. Details of the Project allocation transfers are described in paragraph 32 of the Barroll declaration.

22. Without the adjustments to Project allocation and accounting described above, annual and accrued Index Departures could substantially increase and adversely affect the viability of the EEPI as a mechanism to achieve apportionment of Rio Grande water below Elephant Butte Reservoir between New Mexico and Texas in accordance with the Compact.

Technical Support for Project Allocation and Accounting Adjustments

23. The differences between computing the annual EPCWID allocation using the current one-year D2 equation and the two-year D2 equation are illustrated in Figure 1 for a current year

Caballo Release of 500,000 acre-feet and prior year Caballo Releases ranging from 200,000 acre-feet to 790,000 acre-feet.

a. The orange line represents the one-year D2 allocation to EPCWID of approximately 235,000 acre-feet for a current year release of 500,000 acre-feet. The one-year D2 allocation does not vary for different prior year Caballo Releases.

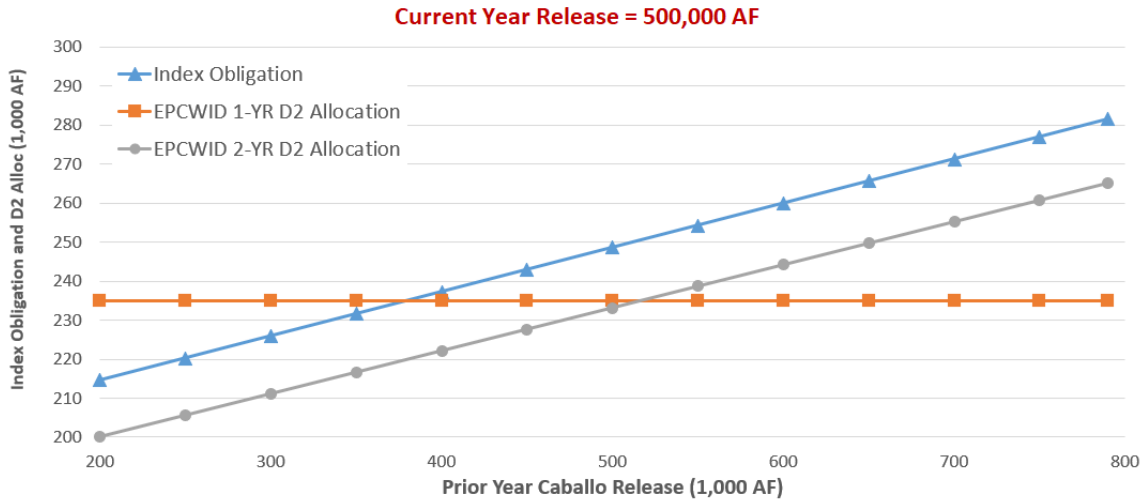
b. The grey line represents the two-year D2 allocation to EPCWID for a current year Caballo Release of 500,000 acre-feet. The two-year D2 allocation to EPCWID ranges from approximately 200,000 acre-feet for a prior year Caballo Release of 200,000 acre-feet to approximately 266,000 acre-feet for a prior year Caballo Release of 790,000 acre-feet.

c. The blue line represents the computed Index Obligation to Texas for a current year Caballo Release of 500,000 acre-feet. The Index Obligation parallels the two-year D2 allocation and is shifted upward by roughly 14,000 acre-feet because of differences in how the non-release season flows and Texas Mesilla DCMI pumping are accounted in the EEPI compared to Project accounting. Recognizing these differences, the Index Obligation and two-year D2 allocation to EPCWID are substantially the same over the range of current and prior year Caballo Releases.

The parallel grey and blue lines reflect consistency between the proposed two-year D2 allocation to EPCWID and the Index Obligation to Texas. The crossing of the orange line over the blue line reflects inconsistency between the current one-year D2 allocation to EPCWID and the Index Obligation. At a low prior year Caballo Release of 200,000 acre-feet, the orange line is significantly above the blue line indicating that the current one-year D2 allocation would cause over deliveries of the Index Obligation (Positive Departures). At

a high prior year Caballo Release of 790,000 acre-feet, the orange line is significantly below the blue line indicating that the current one-year D2 allocation would cause under-deliveries (Negative Departures).

Figure 1: Comparison of Index Obligation and Annual EPCWID D2 Allocations (acre-feet per year)



Note: EPCWID 1-YR D2 Allocation and EPCWID 2-YR D2 Allocation do not include non-release season charges.

Modeling Analysis of the EEPI

24. The Integrated Lower Rio Grande Model ("ILRGM") developed by the New Mexico experts for the litigation was used to evaluate implementation of the EEPI, with modifications to simulate most of the elements of the EEPI described in the proposed Consent Decree.

25. The modified ILRGM was used to project the effects of implementation of EEPI methodology during a 78-year projection period using hydrologic inputs from the historical period of record arranged in the following sequence:

    a. 2000-2019 – Repeat of the recent relatively dry period (projection years 1-20).

b. 1940-1986 – Long historical sequence that starts with the relatively wet period of the 1940s, continues with the relatively dry D2 Period, and ends with onset of the relatively wet period of the 1980s (projection years 21-67).

c. 1954-1964 – Repeat of the mixed hydrologic conditions of the late 1950s and early 1960s (projection years 68-78).

This simulated 78-year sequence of hydrologic conditions reflects a wide variety of conditions including a mix of dry, average, and wet years. Simulation of a wide variety of conditions shows how the EEPI will operate under a range of hydrologic conditions [5].

26. The simulated annual Index Obligations and Index Deliveries to Texas for the projection run are summarized in Figure 1 and Figure 2.

a. Figure 1 shows the simulated annual Index Obligations (black line) and Index Deliveries (orange line) during the 78-year projection period. The plotted results show that the Index Deliveries generally track the Index Obligations with slight or modest over-deliveries and under-deliveries from year to year. Deliveries and obligations are not shown for the simulated spill years.

b. Figure 2 shows the annual departures (grey bars) and accrued Index Departures (red line). Accrued Index Departure resetting events are indicated by the pink and green dots near the top of the chart. A pink dot indicates a reset of the accrued Index Departures because of a spill and a green dot indicates a reset of the accrued negative

[5] 2017 is the last year of the historical study period that was simulated for the ILRGM runs described in the New Mexico expert reports. Most other inputs to the ILRGM were simulated during the projection period based on 2017 conditions including crop distribution, non-irrigation pumping, irrigation efficiency, Project water demand factors, and irrigated area in Texas. The New Mexico irrigated area from 2017 was reduced by 7,000 acres to simulate New Mexico's proposed irrigated land fallowing. Reservoir storage was set at 2021 levels and groundwater storage was set at 2017 levels at the start of the projection period.

Index Departures because the three-year average EPCWID carryover exceeded 180,000 acre-feet. The large accrued Negative Departure in year 9 of the projection beyond the 120,000 acre-feet limit is due to absence in the model of the proposed immediate adjustment to the accrued departures for Project allocation transfers in the projection run.

Figure 2: Annual Index Obligation and Index Delivery (acre-feet per year)

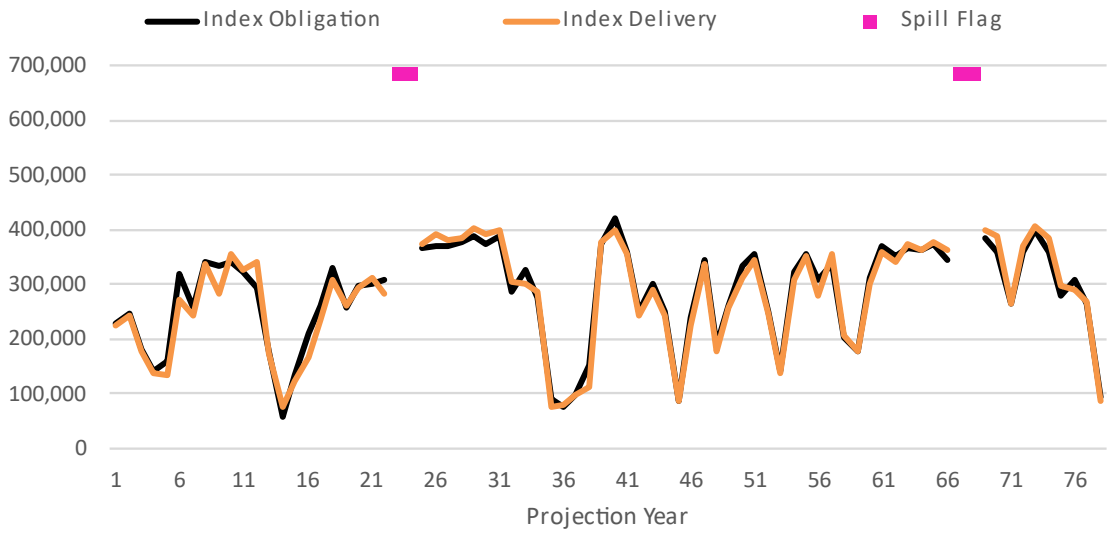
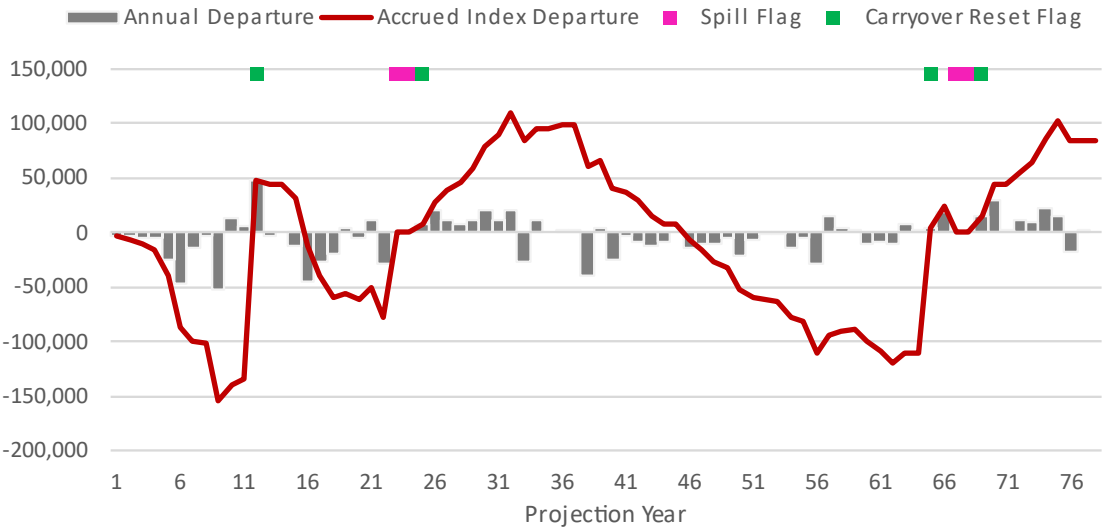


Figure 3: Annual and Accrued Index Departures (acre-feet per year)



27. The simulated annual deliveries to Texas and New Mexico during the Caballo Release season over the 78-year projection period are summarized in Table 1. Annual release season deliveries to Texas average 243,400 acre-feet and annual release season deliveries to New Mexico average 319,000 acre-feet.

Table 1: Summary of Simulated Diversions to Districts (acre-feet per year)

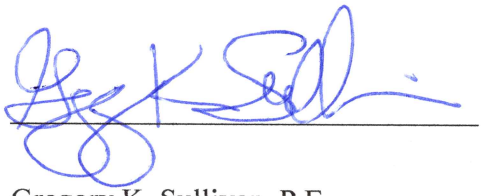
Projection Year	New Mexico District Diversions	Texas District Diversions
1	149,000	198,400
2	191,600	222,100
3	130,400	153,900
4	132,200	117,200
5	170,000	115,800
6	378,900	247,800
7	247,500	208,400
8	398,200	307,200
9	408,600	237,000
10	403,300	303,400
11	378,500	287,600
12	197,400	298,800
13	143,400	148,400
14	75,800	45,700
15	168,900	103,800
16	225,600	146,000
17	241,200	212,900
18	300,900	282,500
19	208,700	229,500
20	240,700	266,200
21	261,200	279,800
22	357,200	243,100
23	568,500	345,000
24	588,400	345,600
25	487,600	298,200
26	487,600	316,200
27	475,500	315,800
28	505,500	317,500

29	524,600	317,000
30	492,800	303,600
31	540,800	309,800
32	275,200	258,600
33	393,100	258,600
34	279,600	244,400
35	114,900	42,400
36	133,200	54,500
37	129,300	76,400
38	190,000	90,700
39	507,600	333,700
40	533,700	328,600
41	427,700	302,000
42	262,500	205,700
43	335,300	260,800
44	258,300	211,800
45	97,500	55,700
46	205,300	205,500
47	297,200	313,500
48	113,300	151,700
49	218,400	238,800
50	311,200	286,400
51	320,400	318,400
52	156,000	220,900
53	116,900	111,700
54	311,800	285,000
55	325,900	321,600
56	277,300	250,100
57	313,400	323,100
58	133,600	173,300
59	140,800	153,000
60	273,400	276,900
61	379,300	331,600
62	382,000	307,000
63	403,000	329,400
64	454,800	309,100
65	491,900	304,600
66	441,200	290,600
67	481,400	306,800
68	559,600	348,600
69	509,500	307,600
70	438,100	330,800
71	262,000	224,500

72	496,500	302,500
73	529,400	322,000
74	451,300	311,000
75	271,300	255,600
76	372,000	256,900
77	296,000	227,800
78	126,400	41,500
Average	319,000	243,400
%	57%	43%

28. The annual release season diversions over the 78-year projection period average 57% to New Mexico and 43% to Texas. This conforms with the 57/43 apportionment of Project Supply between New Mexico and Texas downstream of Elephant Butte Reservoir.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed this 14TH day of November, 2022, at Sarasota, Florida.



Gregory K. Sullivan, P.E.

Gregory K. Sullivan, P.E.

President and Senior Water Resources Engineer

Education: M.S., Civil Engineering, 1990, University of Colorado - Denver
B.S., Civil Engineering, 1985, Colorado State University

Professional Registration: Professional Engineer in Colorado, Idaho, and New Mexico

Professional Experience:

1990 - Present: ***Spronk Water Engineers, Inc., President and Senior Water Resources Engineer***

Mr. Sullivan has over thirty-five years of experience completing a wide variety of water resources engineering projects. Mr. Sullivan has extensive experience performing historical consumptive use analyses, stream depletions analyses, and reservoir operations studies. Mr. Sullivan serves as the primary consultant to numerous water providers for water supply planning and water rights engineering. In that role, he has been responsible for technical analyses in supporting applications for adjudication of water rights, changes of water rights, exchanges, augmentation plans, and other water right matters. He has led the development of complex surface water operations models that simulate municipal water demands and how those demands maybe met by available water supplies and water rights. Mr. Sullivan has served on the Eastern Snake Hydrologic Modeling Committee that guides the development and use of a regional ground water model of the Eastern Snake River Plain Aquifer since 1996. Mr. Sullivan has provided expert testimony in the U.S. Supreme Court, Colorado Water Courts, Snake River Basin Adjudication Court (Idaho), and in administrative hearings before the Idaho Department of Water Resources.

Representative Projects:

Water Supply Modeling - Texas v. New Mexico and Colorado – Rio Grande Basin

Mr. Sullivan is the lead modeling expert for the State of New Mexico in an active lawsuit filed by the State of Texas in the U.S. Supreme Court concerning alleged violations of the 1938 Rio Grande Compact. Mr. Sullivan is leading a multidisciplinary team of renowned experts from across the country that is analyzing and modeling the historical operation of the Rio Grande Project and the effects of alleged compact violations asserted in the

claims and counterclaims of the parties. The ongoing work includes compilation and analysis of historical data from before the time of the compact to the present, and development of farm budget models of large irrigation systems in New Mexico, Texas, and Mexico. In addition, Mr. Sullivan is coordinating development and use of a linked surface water (RiverWare) and ground water (MODFLOW) models of the Lower Rio Grande area from Elephant Butte Reservoir in New Mexico to Fort Quitman, Texas. The Integrated Lower Rio Grande Model simulates the essential hydrologic and institutional/management processes associated with irrigation and municipal water systems in the study area, including the allocation, operation, and accounting mechanisms of the Rio Grande Project.

Water Supply Modeling - Kansas v. Colorado – Arkansas River Basin

Mr. Sullivan was involved in the refinement and use of the H-I Model of the Arkansas River system in Colorado that was developed to support claims by the State of Kansas that Colorado was violating the terms of the 1948 Arkansas River Compact. The model simulates daily operation of irrigation water uses under approximately two dozen canal systems along the Arkansas River in Colorado between the City of Pueblo and the Colorado-Kansas from 1950 to the present. In addition, the model simulates the operation of sole-source and supplemental irrigation wells, and the impact of those wells on the flow of the Arkansas River. Mr. Sullivan provided expert testimony before a Special Master appointed by the U.S. Supreme Court regarding the use of the H-I Model to evaluate the effects on state line flows resulting from post-compact well development in Colorado.

Injury Analysis - Kansas v. Colorado – Arkansas River Basin

Mr. Sullivan developed a model that was used as part of an analysis to compute the economic impacts and monetary damages to Kansas resulting from the compact violations by Colorado that were determined in the Kansas v. Colorado lawsuit. The model was used to translate monthly depletions to usable stateline flows over a 45-year period into impacts to (a) surface water users in Kansas, (b) to supplemental pumping demands in Kansas and (c) to recharge of the regional ground water system. Mr. Sullivan testified before the Special Master regarding the model development, operation, and results.

Analysis of Replacement Plans - Kansas v. Colorado – Arkansas River Basin

To continue use of post-compact Arkansas River alluvial wells, the well owners in Colorado were required to develop Replacement Plans to offset the impacts of pumping on senior surface water rights in Colorado and on usable stateline flows to Kansas. Mr. Sullivan analyzed the adequacy of these replacement plans through preparation of historical use analyses, water budgets, and other analyses. In addition, Mr. Sullivan used the H-I Model to simulate the effectiveness of the replacement plans in meeting Colorado's delivery obligations under the Arkansas River Compact. Mr. Sullivan provided expert testimony before the Special Master concerning his analyses of the Colorado Replacement Plans.

Change of Water Rights - City of Loveland, Colorado

Mr. Sullivan was the principal investigator for ditch-wide historical use analyses of the major Big Thompson River irrigation ditches that serve lands in and around the City of Loveland. These analyses served as the basis for successful changes of water rights that were approved by the Division 1 Water Court to allow the City to divert its ditch shares at the City's municipal water intakes to help meet its water supply needs. He also guided development of detailed water rights accounting for the City to Mr. Sullivan provided expert testimony in support of the changes of water rights in a contested trial.

Water Supply Yield Modeling - City of Loveland, Colorado

Mr. Sullivan led the development of a model to simulate the daily water supply and demand of the City of Loveland over a study period from 1950 - 2017. The water supplies that are simulated in the model include the ditch shares that have been changed to municipal use, Colorado-Big Thompson Project units, Windy Gap Project units, and the operation of the City's Green Ridge Glade Reservoir. The model is used by the City to evaluate the firm yield of its water supply, and how that yield can be increased through acquisition of additional supplies, development of additional storage, changes in water supply operations and other actions.

Water Supply Planning – ACWWA, Colorado

Mr. Sullivan has provided water resources and water rights consulting for the Arapahoe County Water and Wastewater Authority for over 30 years. ACWWA serves lands in the Cherry Creek basin south of Denver through a

combination of shallow alluvial wells and deep nontributary Denver Basin wells. Water use from these sources is integrated and optimized through operation of a complex plan for augmentation that provides for replacement of out-of-priority depletions to Cherry Creek to protect downstream senior water users. Mr. Sullivan has performed numerous analyses to evaluate the yield of ACWWA's water supplies, including completion of a raw water master plan in 2018.

Plan for Augmentation - Upper Cherry Creek Water Association, Colorado

Mr. Sullivan was instrumental in the development of an umbrella plan for augmentation for five major water users in the Cherry Creek Basin upstream of Cherry Creek Reservoir. The members have pooled their augmentation sources to replace the combined out-of-priority depletions resulting from alluvial well pumping and out-of-priority storage in Cherry Creek Reservoir. The plan includes an innovative method of computing depletions that considers times when Cherry Creek is dry in the vicinity of the member wells.

Cherry Creek Aquifer Modeling Project – Colorado

Mr. Sullivan led the development of a basin-wide simulation model of the hydrology and water use in the Cherry Creek basin upstream of Cherry Creek Reservoir. The model simulates the water supplies and water rights of all municipal water providers in the study area and optimizes the alluvial pumping of the water users and the use of Denver Basin ground water replacement supplies. The model also simulates the operation of Cherry Creek Reservoir and Rueter-Hess Reservoir. The model is used by the study participants to evaluate changes in water supply operations and acquisition of new water supplies.

Snake River Basin Adjudication - Idaho

Mr. Sullivan assisted the City of Pocatello in filing claims to adjudicate water rights as part of the SRBA. This work included historical research of facilities and water uses to document historical flow rates, volumes, and priority dates to assign to the claimed water rights. Mr. Sullivan provided expert testimony before the SRBA Court to help defend the City's claims that were disputed by others.

Snake River Delivery Calls - Idaho

Mr. Sullivan has provided technical analysis and expert testimony to the City of Pocatello in their participation in complex litigation involving water right delivery calls by senior surface water users on the Snake River in Idaho. Pocatello's water supply is derived primarily from junior priority wells that are tributary to the Snake River, and its water supply is threatened by the delivery calls. Mr. Sullivan analyzed the historical operation of seven major irrigation districts that placed the delivery calls to assess the extent of their claimed irrigation water shortages. The irrigation districts serve a combined area of 560,000 acres with annual diversions averaging 3.2 million acre-feet per year. Mr. Sullivan provide expert testimony is several hearings before the hearing officers in Idaho Depart of Water Resources.

ESPA Cities Mitigation Plan – Snake River Basin, Idaho

Mr. provided technical expertise and analysis in development of a mitigation plan for Pocatello, Idaho Falls, and more than a dozen other cities to mitigate the impacts of municipal groundwater pumping from the Eastern Snake Plain Aquifer in Idaho. The plan relies largely on aquifer recharge to mitigate the impacts of aquifer depletions from pumping that is projected to increase from about 60,000 acre-feet per year to over 120,000 acre-feet per year over the next 50 years.

Division 3 Rules Case - Rio Grande Basin, Colorado

Mr. Sullivan represented a group of surface water right owners that opposed the enactment of administrative rules governing the withdrawal and use of ground water in the Rio Grande Basin in Colorado (Water Division 3). The primary basis for their opposition was that the rules did not provide for mitigation of impacts to a large spring that was the source of their surface water rights and which dried up in conjunction with the large-scale development of ground water irrigation in the area. Mr. Sullivan's work included analysis of the historical irrigation water use by his clients, review of hydrologic data and records, and review of a ground water modeling of the San Luis Valley performed by the State of Colorado. Mr. Sullivan provided expert testimony on behalf of his clients in a trial before the Division 3 Water Court.

Ground Water Administrative Proceeding – Wood River Basin, Idaho

Mr. Sullivan represents the Sun Valley Company and the Cities of Ketchum, Hailey, and Bellevue in an administrative proceeding in the Wood River Valley in Idaho. Holders of senior surface water rights are seeking curtailment of junior ground water rights based on allegations of injury being suffered by the seniors, and the Idaho Department of Water Resources is proposing to implement conjunctive administration of groundwater rights and surface water rights to address the injury claims. A groundwater model of the Wood River Valley developed by IDWR with input from stakeholders is being used in the dispute to assess impacts from pumping on surface water supplies. Mr. Sullivan provided expert testimony on behalf of SVC and the Cities in a contested administrative hearing before the IDWR Director. Mr. Sullivan is also a member of a technical working group that has been assembled to develop a groundwater management plan that is hoped to settle the ongoing dispute.

1985 – 1990: ***J. W. Patterson & Associates, Inc., Water Resources Engineer***

Performed water supply, hydraulic and hydrologic analyses for agricultural, industrial, commercial, and municipal developments. Managed yield and impact analyses of water rights adjudications, transfers, exchanges and plans for augmentation. Conducted ground water studies including aquifer testing, project dewatering and water well design and construction monitoring.

Continuing Education:

Applied Ground-Water Flow Modeling. International Ground Water Modeling Center, Colorado School of Mines, Golden, CO. March 1993.

Introduction to Simulation Training in RiverWare, Center for Advanced Decision Support for Water and Environmental Systems, University of Colorado, May 2016.