



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

April 14, 2017

Town of Norwood
Attn: Patti Grafmyer, Town Administrator
P.O. Box 528
Norwood, CO 81423

RE: Notice to Proceed – WSRF Grant – **POGG1 2017-874** - Town of Norwood Raw Water System
in the Southwest River Basin

Dear Patti,

This letter is to inform you that purchase order to assist in the above WSRF grant project has been approved. The original contract documents in the email serve as your copy.

With the executed agreement, you are now able to proceed with the project and invoice the State of Colorado for costs incurred through June 30, 2018 according to the Exhibit A schedule. Please provide the project name, contract/PO number, and basin when corresponding with or invoicing for your project along with back-up documentation of cost incurred for the WSRF portion of the grant according to the original scope of work. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 30 days after review and signed approval of the project manager.

Please refer to the WSRF Criteria & Guidelines reporting requirements for the six month progress reports and final deliverable details in order to avoid a delay in payment. A 30-day advance notice is required in the event you are seeking an amendment to the term of the contract and will require an official letter of request to the CWCB project manager briefly describing the need for the extension, updated insurance certificates and updated schedule.

If you have any questions or concerns regarding this project, please contact Anna Mauss, Project Manager at 303-866-3441 ext. 3234 or at Anna.mausse@state.co.us. When submitting invoices and progress reports, send them to Anna and cc me at dori.vigil@state.co.us. You can contact me at 303-866-3441 ext. 3250 for additional invoicing and payment disbursement questions.

Thank you.

Sincerely,

//s//

Doriann Vigil
Program Assistant II
O 303-866-3441 ext. 3250
1313 Sherman Street, Rm. 719, Denver, CO 80203
Dori.vigil@state.co.us / cwcb.state.co.com
Attachments





STATE OF COLORADO
Department of Natural Resources

ORDER		** IMPORTANT **				
Number: POGG1 PDAA 201700000874		The order number and line number must appear on all invoices, packing slips, cartons and correspondence				
Date: 04/14/17						
Description: pdaa 2500 WSRF grant Town of Norwood to fund Raw Water System		BILL TO				
Effective Date: 04/14/17 Expiration Date: 06/30/18		COLORADO WATER BOARD CONSERVATION 1313 SHERMAN STREET, ROOM 718 DENVER, CO 80203				
BUYER		SHIP TO				
Buyer:		COLORADO WATER BOARD CONSERVATION				
Email:		1313 SHERMAN STREET, ROOM 718 DENVER, CO 80203				
VENDOR		SHIPPING INSTRUCTIONS				
TOWN OF NORWOOD		Delivery/Install Date:				
PO BOX 528		F.O.B: FOB Dest, Freight Allowed				
NORWOOD, CO 81423-0528		VENDOR INSTRUCTIONS:				
Contact: .						
Phone: .						
Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
1	G1000		0	0.00	\$50,000.00	☐
Description: pdaa 2500 WSRF grant Town of Norwood to fund Raw Water System						
Service From: 04/14/17 Service To: 06/30/18						
TERMS AND CONDITIONS						
https://www.colorado.gov/osc/purchase-order-terms-conditions						
DOCUMENT TOTAL = \$50,000.00						

Exhibit A
Statement of Work
Date: 01/02/2017

WATER ACTIVITY NAME -Town of Norwood Raw Water System

GRANT RECIPIENT –Town of Norwood

FUNDING SOURCE -Basin Account

INTRODUCTION AND BACKGROUND

Provide a brief description of the project. (Please limit to no more than 200 words; this will be used to inform reviewers and the public about your proposal)

The Town of Norwood Raw Water System (RWS) will deliver a portion of current agricultural water shares to Town water customers for lawn and garden irrigation purposes. The multi-purpose project is designed to increase Norwood's overall water security during draught; decrease the usage of the Town's municipal water supply for irrigation, thus freeing up municipal water for future growth and development; lessen demand upon the Norwood water treatment plant and defer the need for plant expansion; and to provide chloramine-free water for gardens, lawns, trees, shrubs and other irrigation needs.

OBJECTIVES

List the objectives of the project

- 1) Provide chloramine-free water from currently owned agricultural water shares to Norwood residents

TASKS

TASK 1 – Construction of Raw Water System

Description of Task

This task accomplishes three important components of the RWS: 1) the completion of the groundwork for the entire project, including: water diversion and water storage reservoir improvements 2) the installation of the main water delivery pipeline into Norwood 3) the construction of a water station that tap owners can obtain and haul water from. The water station will make raw water available to tap owners who do not live within Town limits. The station will also provide in-Town tap owners access to raw water before the final build-out of the system is complete within Town boundaries in 2018. In addition raw water will be delivered to all tap owners within Town limits.

Method/Procedure

- 1) Improvements to existing water storage reservoir, including: expanding the size of the reservoir, grading, lining and spillway improvement. Other action items include: installation of new headgate, intake and screen/strainer, and master meter.
- 2) Installation of main RWS pipeline from water storage reservoir to the raw water station
- 3) Construction of water station.
- 4) Installation of taps to owners within Town limits.

Deliverable

Completion of a raw water station where tap owners and remote tap owners can collect raw water for irrigation purposes. Completion of necessary reservoir improvements and the installation of the main raw water system pipeline from the reservoir into Town boundaries. Final as-built drawings will be submitted to the CWCB upon completion of the project.

Project Maps

See Exhibit B.

BUDGET

1. Estimated Project Costs

Phase 2 and 3, as listed in the below budget, will not be funded from the 2017 request from the Basin WSRF Grant.

Table 7. Opinion of Probable Cost
Town of Norwood

Revised: 7/28/2016

Item No.	Unit	Description	Unit Price	Water Station		Phase 1A		Phase 1B		Phase 2		Phase 3	
				Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
1	EA	New Headgate	\$10,000	1	\$ 10,000	-	\$ -	-	\$ -	-	\$ -	-	\$ -
2	EA	18" culvert	\$5,000	1	\$ 5,000	-	\$ -	-	\$ -	-	\$ -	-	\$ -
3	EA	Reservoir improvements	\$65,000	1	\$ 65,000	-	\$ -	-	\$ -	-	\$ -	1	\$ 65,000
4	EA	Intake and screen/strainer	\$12,500	1	\$ 12,500	-	\$ -	-	\$ -	-	\$ -	-	\$ -
5	EA	Master meter	\$7,500	1	\$ 7,500	-	\$ -	-	\$ -	-	\$ -	-	\$ -
6	LF	4" PVC pipe - C900	\$20	-	\$ -	7,370	\$ 147,400	6,835	\$ 136,700	7,205	\$ 144,100	4,446	\$ 88,920
7	LF	6" PVC pipe - C900	\$25	-	\$ -	-	\$ -	-	\$ -	7,242	\$ 181,050	3,820	\$ 95,500
8	LF	8" PVC pipe - C900	\$30	1,300	\$ 39,000	6,000	\$ 180,000	4,910	\$ 147,300	-	\$ -	-	\$ -
9	LF	10" PVC pipe - C900	\$35	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
10	LF	12" PVC pipe - C900	\$40	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
11	LF	14" PVC pipe - C901	\$45	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
12	LF	16" PVC pipe - C900	\$50	3,575	\$ 178,750	-	\$ -	-	\$ -	-	\$ -	-	\$ -
13	LF	1" PVC pipe - C900	\$15	15	\$ 225	1,600	\$ 24,000	1,600	\$ 24,000	1,000	\$ 15,000	750	\$ 11,250
14	EA	Meter and pit	\$300	1	\$ 300	-	\$ -	-	\$ -	-	\$ -	-	\$ -
15	EA	Water Shack Facility	\$10,000	1	\$ 10,000	-	\$ -	-	\$ -	-	\$ -	-	\$ -
16	EA	Hose bib	\$100	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
17	LS	Road repair	\$50,000	-	\$ -	1	\$ 50,000	1	\$ 50,000	1	\$ 50,000	1	\$ 50,000
18	LS	Utility repair	\$50,000	-	\$ -	1	\$ 50,000	1	\$ 50,000	1	\$ 50,000	1	\$ 50,000
19	LS	Landscape repair	\$25,000	-	\$ -	1	\$ 25,000	1	\$ 25,000	1	\$ 25,000	1	\$ 25,000
20	%	Contingency	20%	1	\$ 65,655	1	\$ 95,280	1	\$ 86,600	1	\$ 93,030	1	\$ 77,134
21	%	Construction Management	10%	1	\$ 39,393	1	\$ 57,168	1	\$ 51,960	1	\$ 55,818	1	\$ 46,280
22	%	Engineering (survey/design/construction)	7.5%	1	\$ 29,545	1	\$ 42,876	1	\$ 38,970	1	\$ 41,864	1	\$ 34,710
Total Cost:					\$ 462,868		\$ 671,724		\$ 610,530		\$ 655,862		\$ 543,795

Engineer's Disclaimer on the Engineer Estimate of Probable Cost

This ENGINEER'S opinion of probable construction cost is made on the basis of ENGINEER'S experience and qualifications and represents the ENGINEER'S best judgment as an experienced and qualified professional generally familiar with the industry. However, since the ENGINEER has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, ENGINEER cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable construction cost as prepared by ENGINEER. If OWNER wishes greater assurance as to probable construction costs, OWNER shall employ an independent cost estimator or contractor.

Assumptions:

- 1) Cost estimate was prepared based on preliminary design. The scope of work includes installing a raw water irrigation system for the Town of Norwood.
- 2) Unit cost data are based on similar project and available data and are not guaranteed.
- 3) Cost Estimate does not include any municipal permitting fees.
- 4) Cost estimate is based on preliminary design and layout; a 20 percent contingency has been applied.
- 5) Pipe cost includes trenching, bedding, and appurtenances (valves, tees, fittings, etc.).

Notes:

LF = linear feet
EA = each
LS = lump sum

In order to best ensure that the Town of Norwood Raw Water System maintains its high level of momentum, several possible construction phases have been identified. The Town's immediate goal is to complete construction of Phase 1 by the Summer of 2018. Phase 1 consists of the full build-out of the Raw Water System within Norwood Town Boundaries. The completion of the full RWS is contingent upon Norwood's procurement of funds from the Colorado Department of Local Affairs' (DOLA) Energy and Mineral Impact Assistance Program and/or a loan from the CWCB. The Town will apply for DOLA funding in February of 2017 and, if successful, these funds will be combined with matching dollars to fully finance Phase 1. In the event that DOLA funding is not awarded or only partially awarded in the February grant cycle, the project will seek out a loan from the CWCB for the remaining costs of Phase 1.

If funding from DOLA and/or the CWCB were to be delayed, the construction of the water station has been identified as a means to get raw water to Norwood in 2017 and ensure the project maintains its forward progress. The raw water dispensed at the station will be available for tap owners to purchase and haul to their properties for lawn and garden irrigation. This step would also lay the groundwork for Phase 1 as improvements to the upper diversion and raw water supply reservoir and the installation of the mainline into town would be completed.

Phases 1A and 1B have also been identified as possible construction stages. Phase 1A includes the installation of 8" and 6" PVC lines off the mainline which will service a portion of tap owners within the greater Phase 1 area. Phase 1B finishes installation of the RWS within Town boundaries, thus completing the entirety of Phase 1.

The intent is to utilize Basin WSRA Grant money to fund Phase 1 and see the completion of the RWS within Town limits by the Summer of 2018. If DOLA and/or CWCB funding is delayed, WSRA Grant money will be combined with current matching dollars to finance the construction of the water station in 2017.

Phases 2 and 3 include the expansion of the Raw Water System beyond Norwood Town Boundaries in 2022 and 2032 respectively.

2. Amount requested form the WSRA Grant: \$50,000.00

|

SCHEDULE—Completion of Phase 1

Task	First Six Months				Second Six Months			
Water Station	5/17-8/17	8/17-11/17			11/17-2/18	2/18-5/18		
Diversion improvements								
Reservoir Improvements								
Pipe installation								
Construct water station								
Phase 1								
Install pipeline througout Town limits								
Install individual taps								
System turned on								
Administrative								
Reporting								

Funding Source	Cash	In-Kind	Total
Colorado Department of Local Affairs' Energy/Mineral Impact Assistance Fund	\$690,767.50		\$690,767.50
CWCB Loan	\$200,000		\$200,000
Town of Norwood	\$25,000		\$25,000
San Miguel County	\$25,000		\$25,000
Norwood Water Commission	\$2,500		\$2,500
Hermitage Trust	\$5,000		\$5,000
Southwestern Water Conservation District	\$175,000		\$175,000
76 raw water taps sold as of 3/1/2017	\$190,000		\$190,000
5 additional taps from interested parties	\$13,267.50		\$13,267.50
San Miguel Water Conservancy District	\$5,000		\$5,000
Subtotal Matching Funds:	\$1,331,535.00		\$1,331,535.00
WSRA Southwest Basin Account	\$50,000		\$50,000
Total Project Costs:	\$1,381,535.00		\$1,381,535.00

Engineer's Opinion of Probable Cost**Owner:** Town of Norwood**Project:** Raw Water System - Tasks 1 and 2**Location:** Norwood, CO**Design Development - 1/24/17**

Item #	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Mobilization	1	LS	\$ 10,000.00	\$ 10,000
2	Erosion Control	1	LS	\$ 5,000.00	\$ 5,000
3	Remove Existing Structure	-	EA	\$ 1,500.00	-
4	3/4" Tap and Service Line	76	EA	\$ 1,000.00	\$ 76,000
5	2" Tap and Service Line	3	EA	\$ 3,000.00	\$ 9,000
6	4" HDPE	7,641	LF	\$ 27.00	\$ 206,307
7	6" HDPE	1,828	LF	\$ 29.00	\$ 53,012
8	8" HDPE	11,370	LF	\$ 31.00	\$ 352,470
9	12" HDPE	3,595	LF	\$ 42.00	\$ 150,990
10	16" HDPE	-	LF	\$ 60.00	-
11	Valve	30	EA	\$ 1,000.00	\$ 30,000
12	ARV / Air Vac Valve	24	EA	\$ 750.00	\$ 18,000
13	Drain Facility	2	EA	\$ 2,500.00	\$ 5,000
14	Water Station	1	LS	\$ 20,000.00	\$ 20,000
15	Reservoir Inlet Improvements	1	LS	\$ 5,000.00	\$ 5,000
16	Reservoir Outlet	1	EA	\$ 5,000.00	\$ 5,000
17	Headgate/Turnout Structure	1	EA	\$ 5,000.00	\$ 5,000
18	18" CMP	30	LF	\$ 50.00	\$ 1,500
19	18" FES	2	EA	\$ 500.00	\$ 1,000
20	Rip Rap Protection	50	CY	\$ 25.00	\$ 1,250
21	Reservoir Mass Grading (cut/fill)	2,600	CY	\$ 7.50	\$ 19,500
22	Pond Liner	18,500	SF	\$ 1.25	\$ 23,125
23	Pond Access Road	200	LF	\$ 15.00	\$ 3,000
24	Remove/Replace Gravel or Chip Seal	464	SY	\$ 15.00	\$ 6,963
25	Sawcut/Remove/Replace Asphalt	147	SY	\$ 50.00	\$ 7,350
26	Concrete Repair	1	LS	\$ 5,000.00	\$ 5,000
27	Landscape Repair	1	LS	\$ 10,000.00	\$ 10,000
28	Easements	1	LS	\$ 6,000.00	\$ 6,000
Sub Total Project Construction Cost					\$ 1,035,467
1	<i>Final Engineering and Surveying (Consultant)</i>	5	%		\$ 23,236
2	<i>Construction Phase Support (Consultant)</i>	2.5	%		\$ 26,618
3	<i>General Conditions (Contractor)</i>	10	%		\$ 106,472
Sub Total Project Softs Costs					\$ 156,326
1	<i>Contingency</i>	15	%		\$ 178,768
Total Project Cost					\$ 1,381,535

Notes and Assumptions

- 1) Opinion of Probable cost is based on design development drawings dated 1/20/17
- 2) 15% Contingency for scope changes during final design

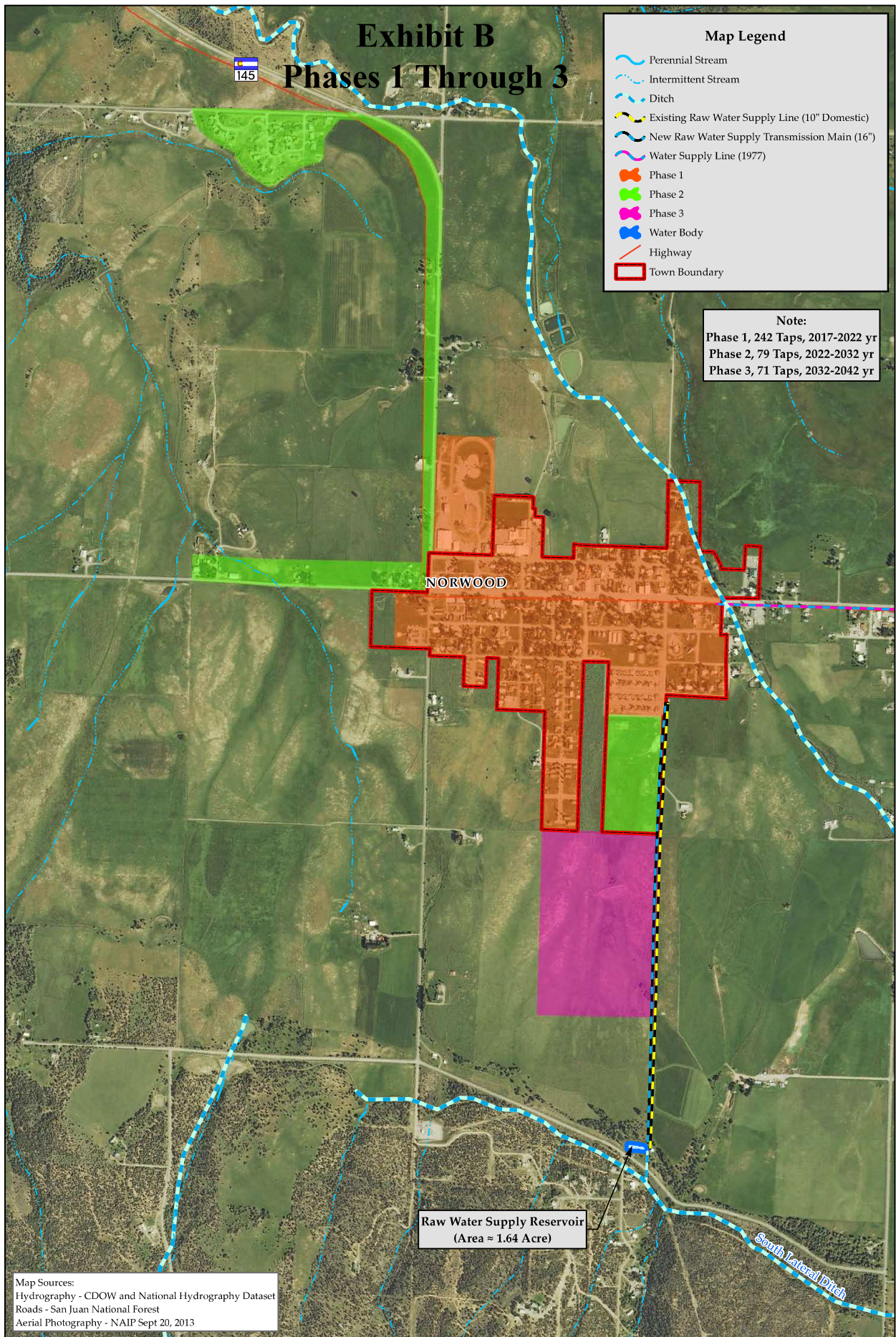
Engineer's Disclaimer on the Engineer Estimate of Probable Cost

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Exhibit B Phases 1 Through 3



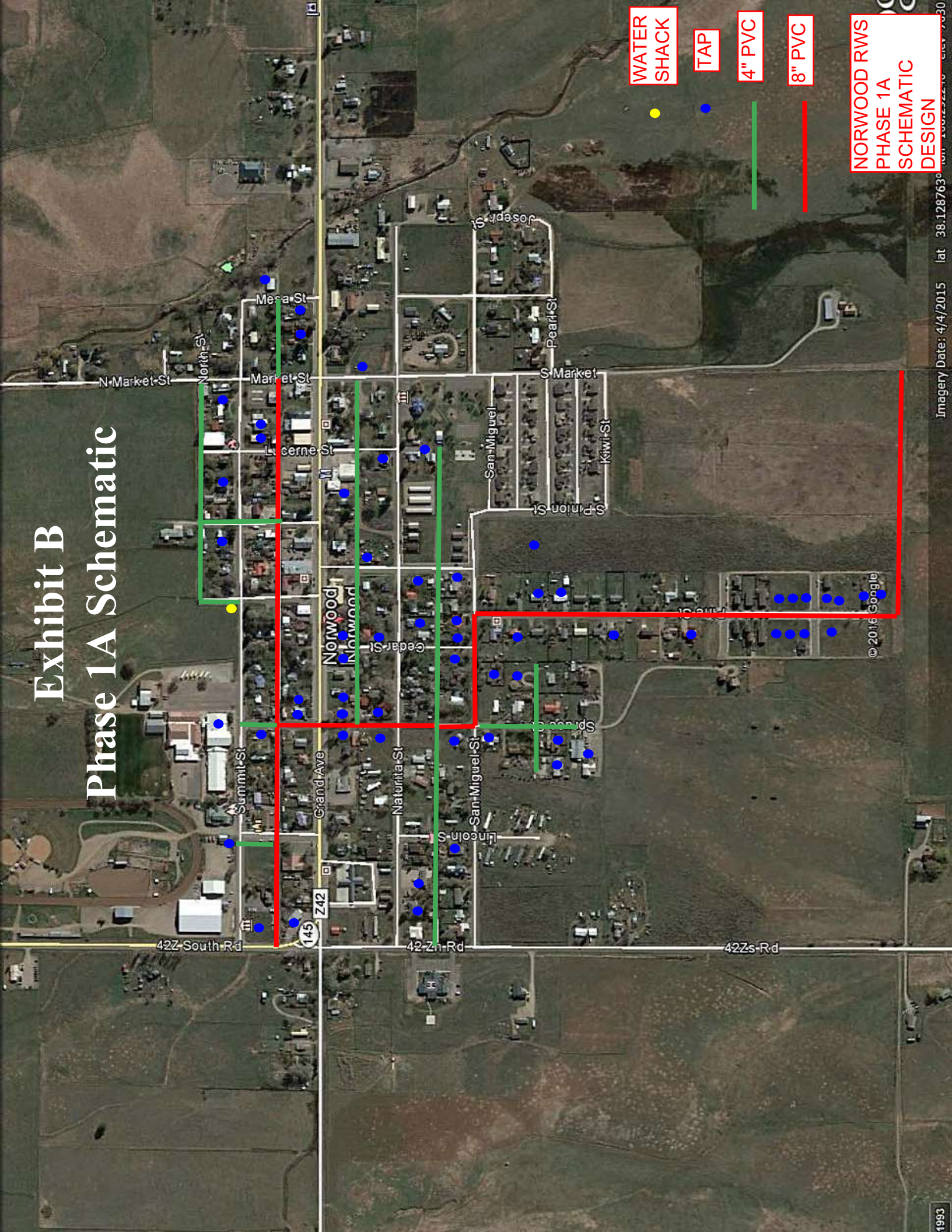
Note:
Phase 1, 242 Taps, 2017-2022 yr
Phase 2, 79 Taps, 2022-2032 yr
Phase 3, 71 Taps, 2032-2042 yr



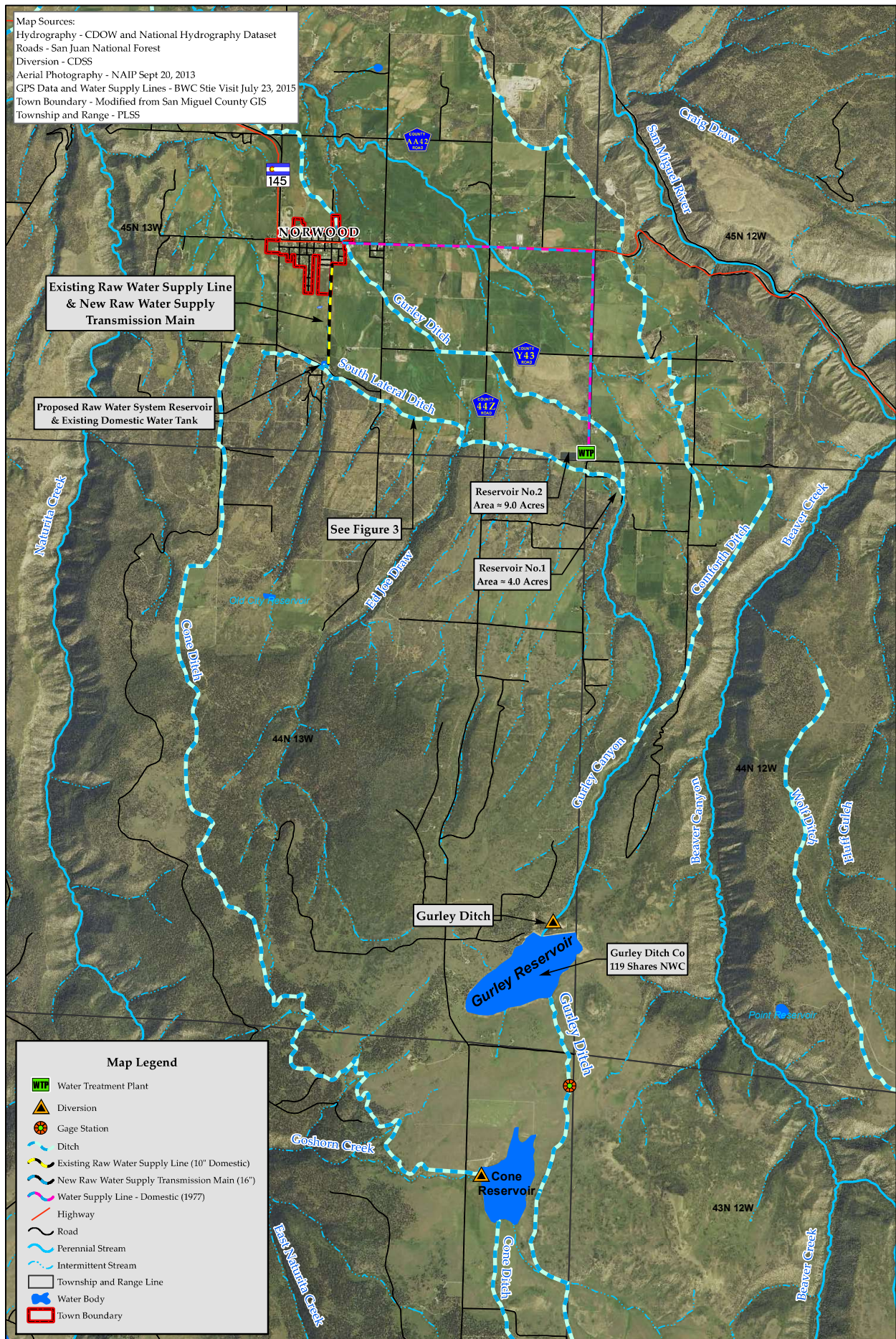
Map Sources:
Hydrography - CDOW and National Hydrography Dataset
Roads - San Juan National Forest
Aerial Photography - NAIP Sept 20, 2013

Exhibit B

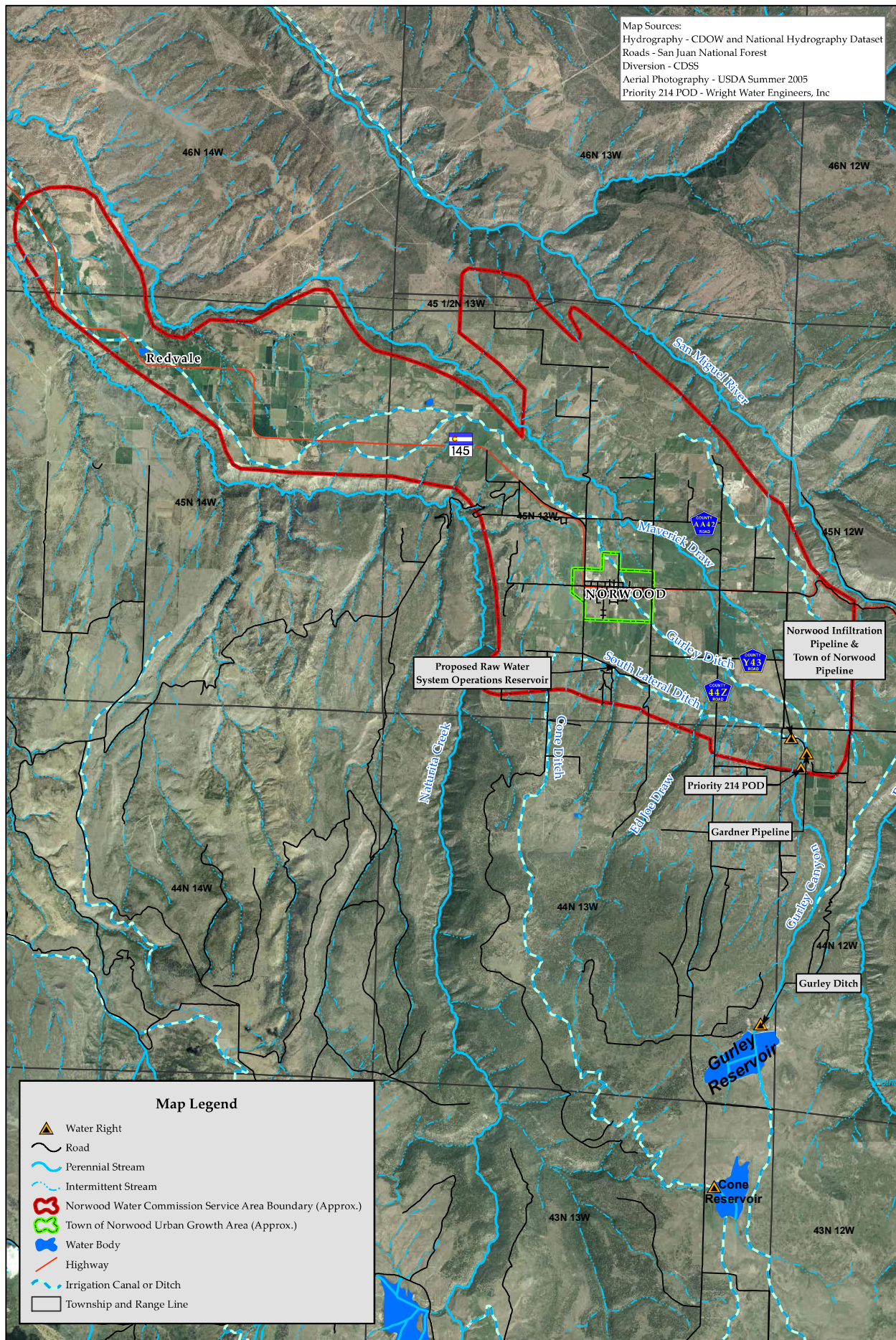
Phase 1A Schematic



Map Sources:
 Hydrography - CDOW and National Hydrography Dataset
 Roads - San Juan National Forest
 Diversion - CDSS
 Aerial Photography - NAIP Sept 20, 2013
 GPS Data and Water Supply Lines - BWC Stie Visit July 23, 2015
 Town Boundary - Modified from San Miguel County GIS
 Township and Range - PLSS



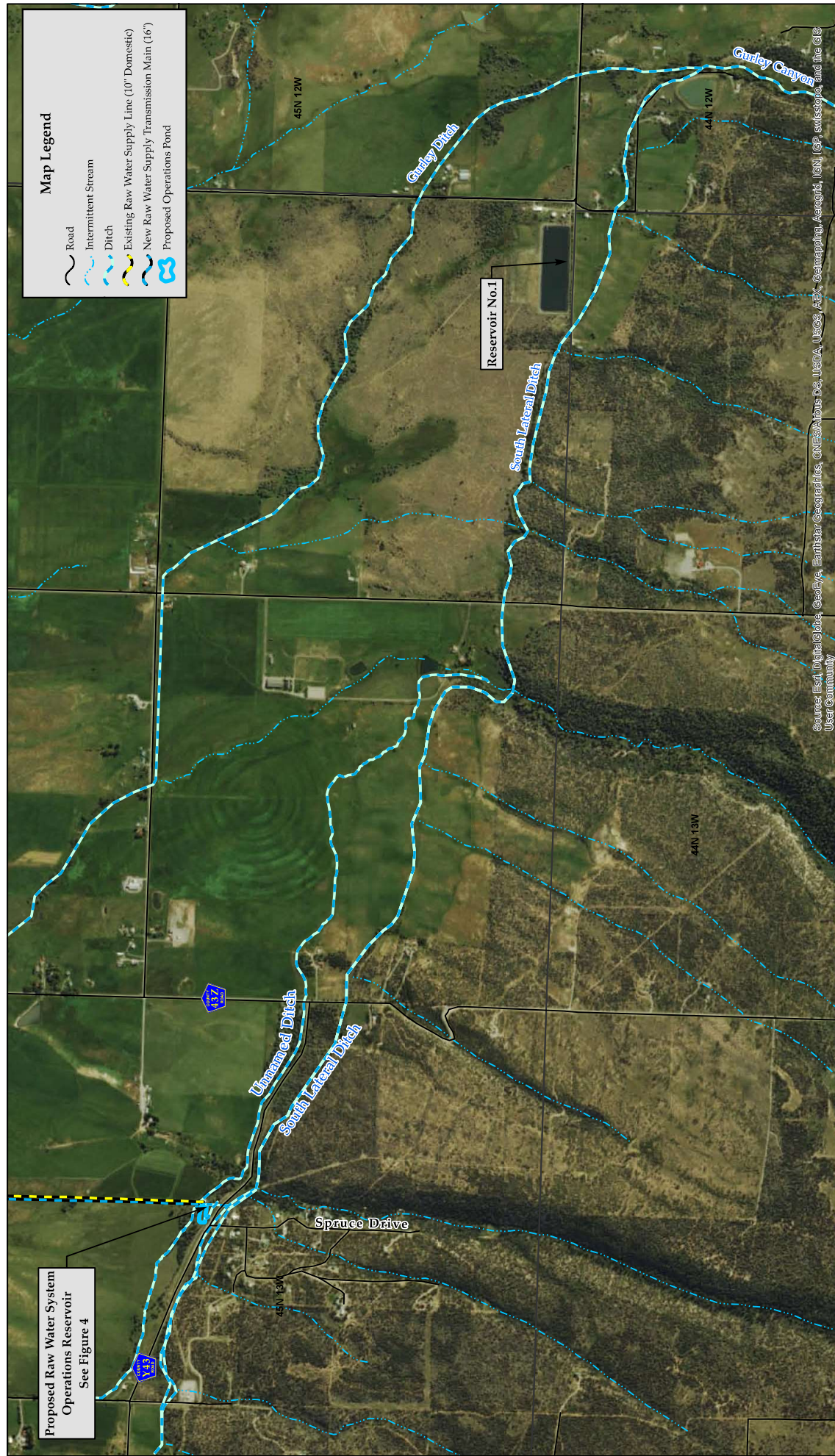
Map Sources:
 Hydrography - CDOW and National Hydrography Dataset
 Roads - San Juan National Forest
 Division - CDSS
 Aerial Photography - USDA Summer 2005
 Priority 214 POD - Wright Water Engineers, Inc



Map Legend

- Water Right
- Road
- Perennial Stream
- Intermittent Stream
- Norwood Water Commission Service Area Boundary (Approx.)
- Town of Norwood Urban Growth Area (Approx.)
- Water Body
- Highway
- Irrigation Canal or Ditch
- Township and Range Line

P:\Project Files\2015-1440001 Town of Norwood Mapping - ArcMap\2015 Norwood Water Supply-A.mxd



Proposed Raw Water System
Operations Reservoir
See Figure 4

Reservoir No.1

Unnamed Ditch

South Lateral Ditch

Spruce Drive

Gurley Ditch

Gurley Canyon

Map Legend

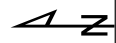
- Road
- Intermittent Stream
- Ditch
- Existing Raw Water Supply Line (10" Domestic)
- New Raw Water Supply Transmission Main (16")
- Proposed Operations Pond

Bikis
Water Consultants
a division of SGM

305 RiverGate Lane Suite 104-2
Gresham, OR 97030
503.250.9100
www.bikiswater.com

0 600 1,200 2,400 Feet

1 inch = 1,200 feet

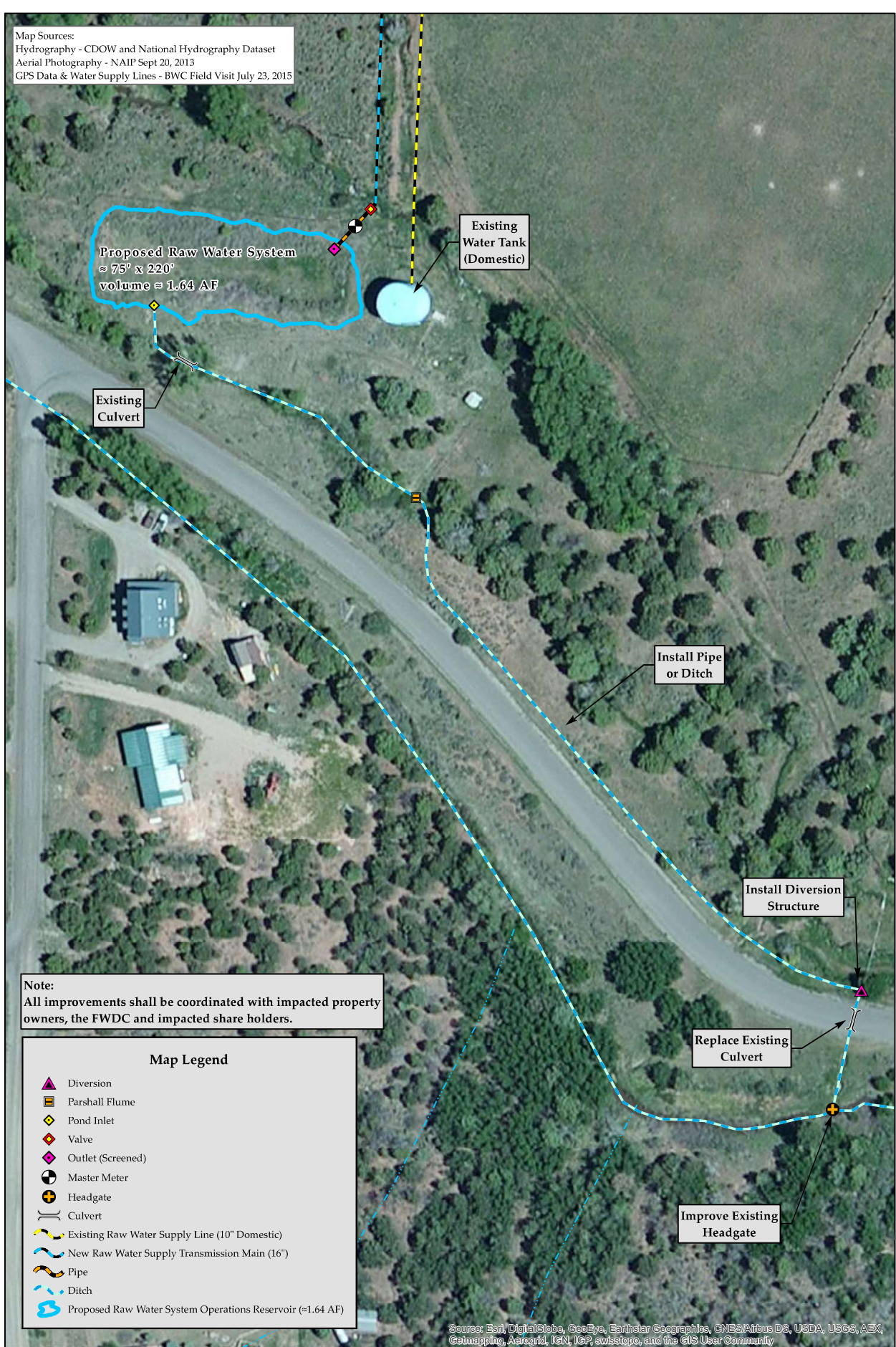


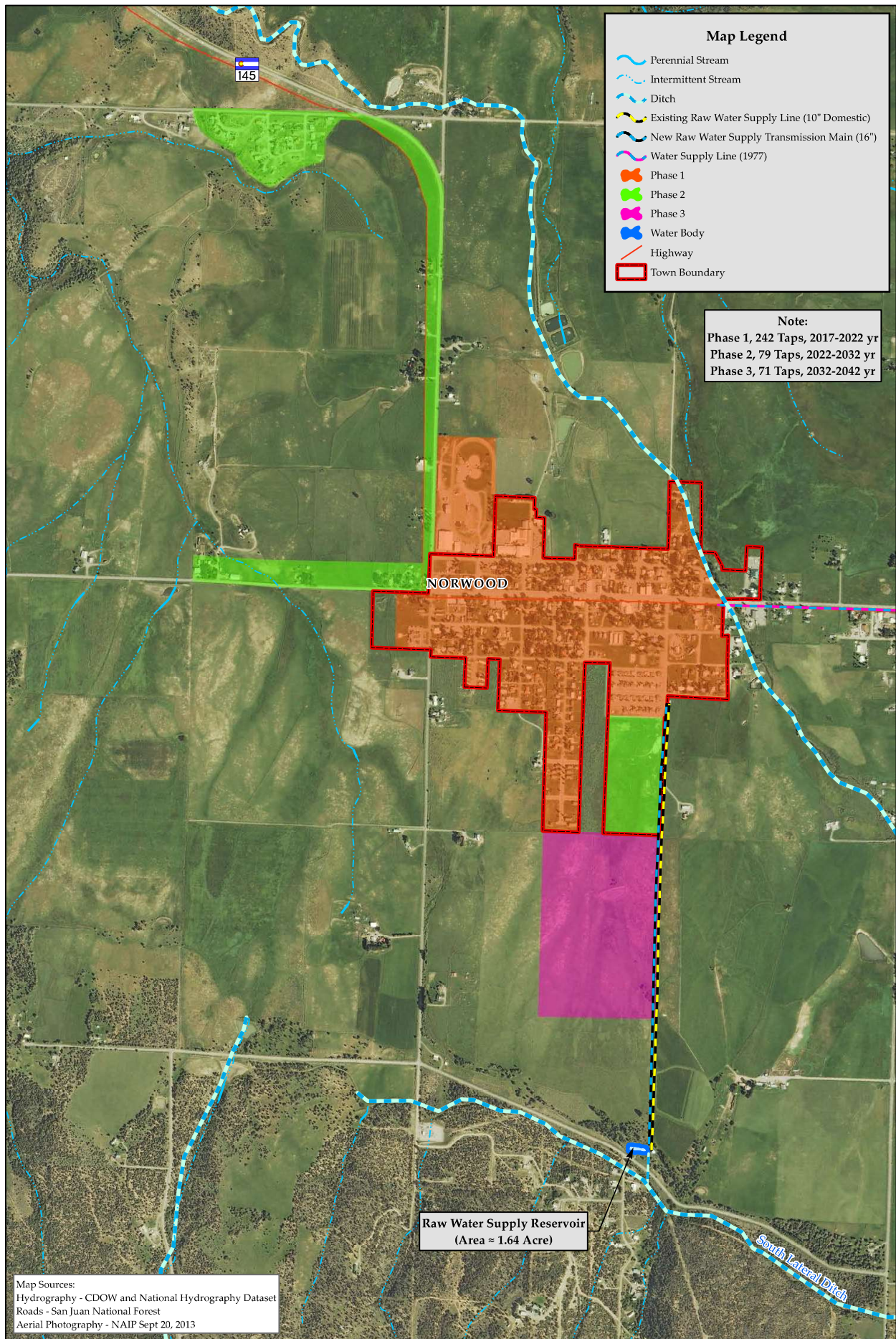
Map Sources:
Aerial Photography - NAD Sept 20, 2013
Hydrography - CDOW and National Hydrography Dataset
GPS Data & Water Supply Features - BWC Field Visit July 23, 2015

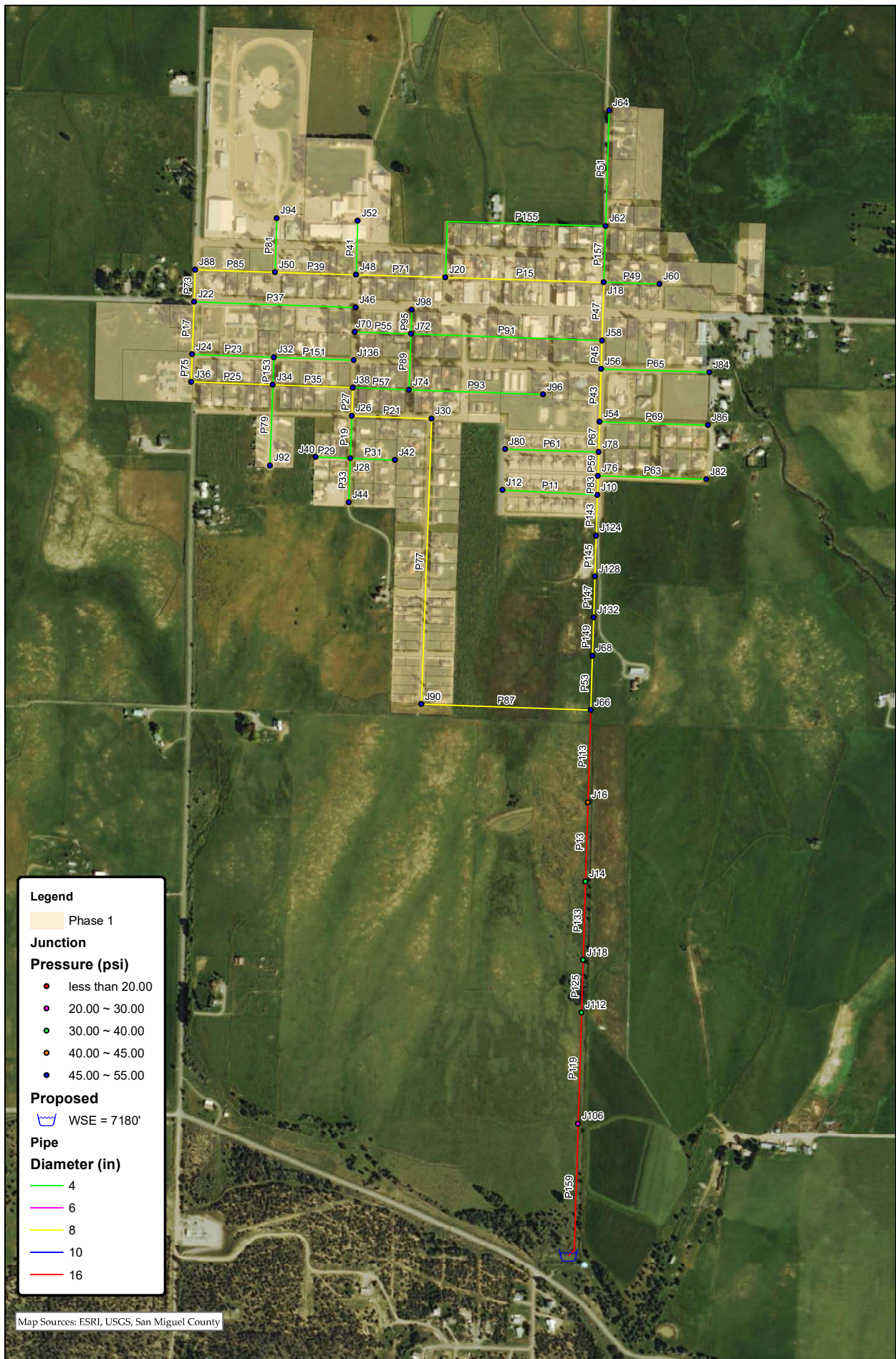
Designed by: SCV
Checked by: EAB
Date: 12/29/2015
Scale: 1:14,400

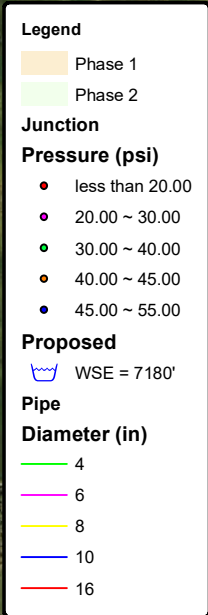
Norwood Proposed Raw Water Supply Map

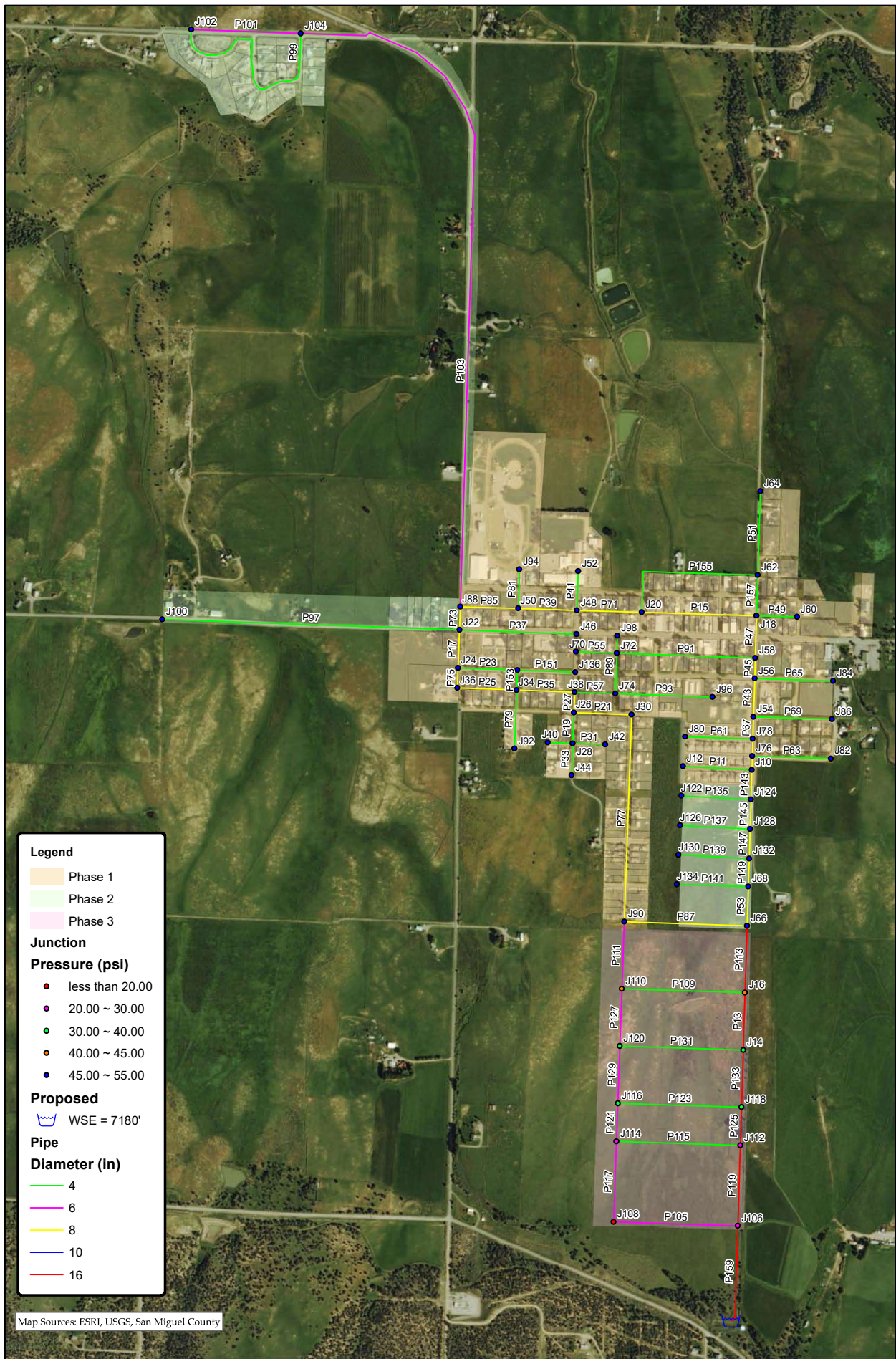
Map Sources:
 Hydrography - CDOW and National Hydrography Dataset
 Aerial Photography - NAIP Sept 20, 2013
 GPS Data & Water Supply Lines - BWC Field Visit July 23, 2015











Norwood Master Plan Future Land Use Plan

Legend

- Drain
 - Town
 - Trails
 - Norwood Master Plan Area
 - Shade
 - Future Streets
 - Parade
- | NAME | COMMERICAL | LIGHT INDUSTRIAL | PUBLIC | RESIDENTIAL |
|----------|------------|------------------|--------|-------------|
| [Symbol] | | | | |



NOT TO SCALE



PREPARED BY: San Miguel
 GIS (11/14/2009) 11
 (DISTRICTS IN COUNTY)
 ADMINISTRATION (W/ORD)
 NORWOOD (11/14/2009)

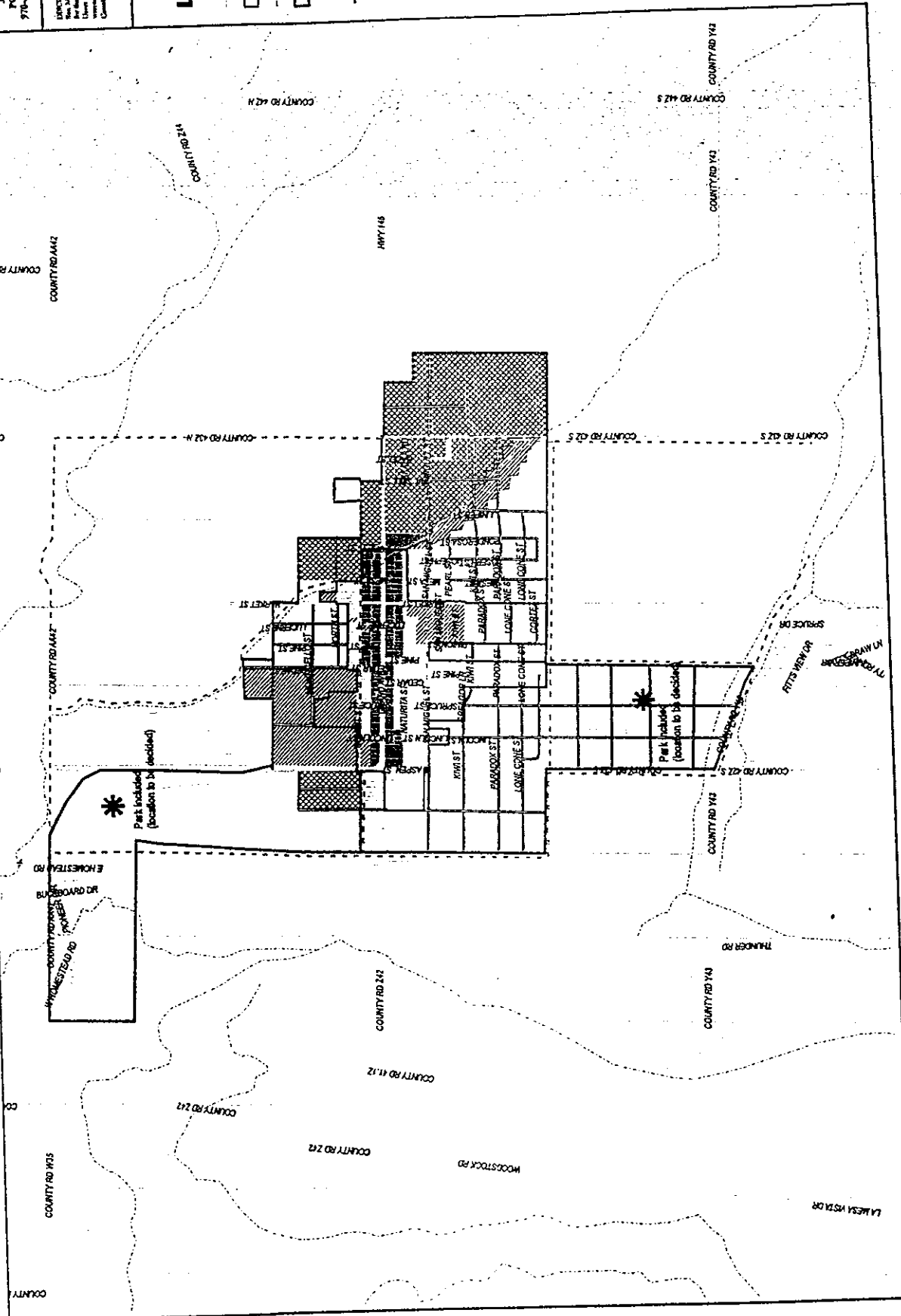
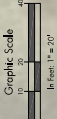


Figure 9



Preliminary
Not For
Construction



Town of Norwood
Raw Water System
Feasibility Study

#	Revision	Date	By
1			

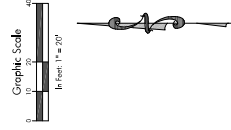
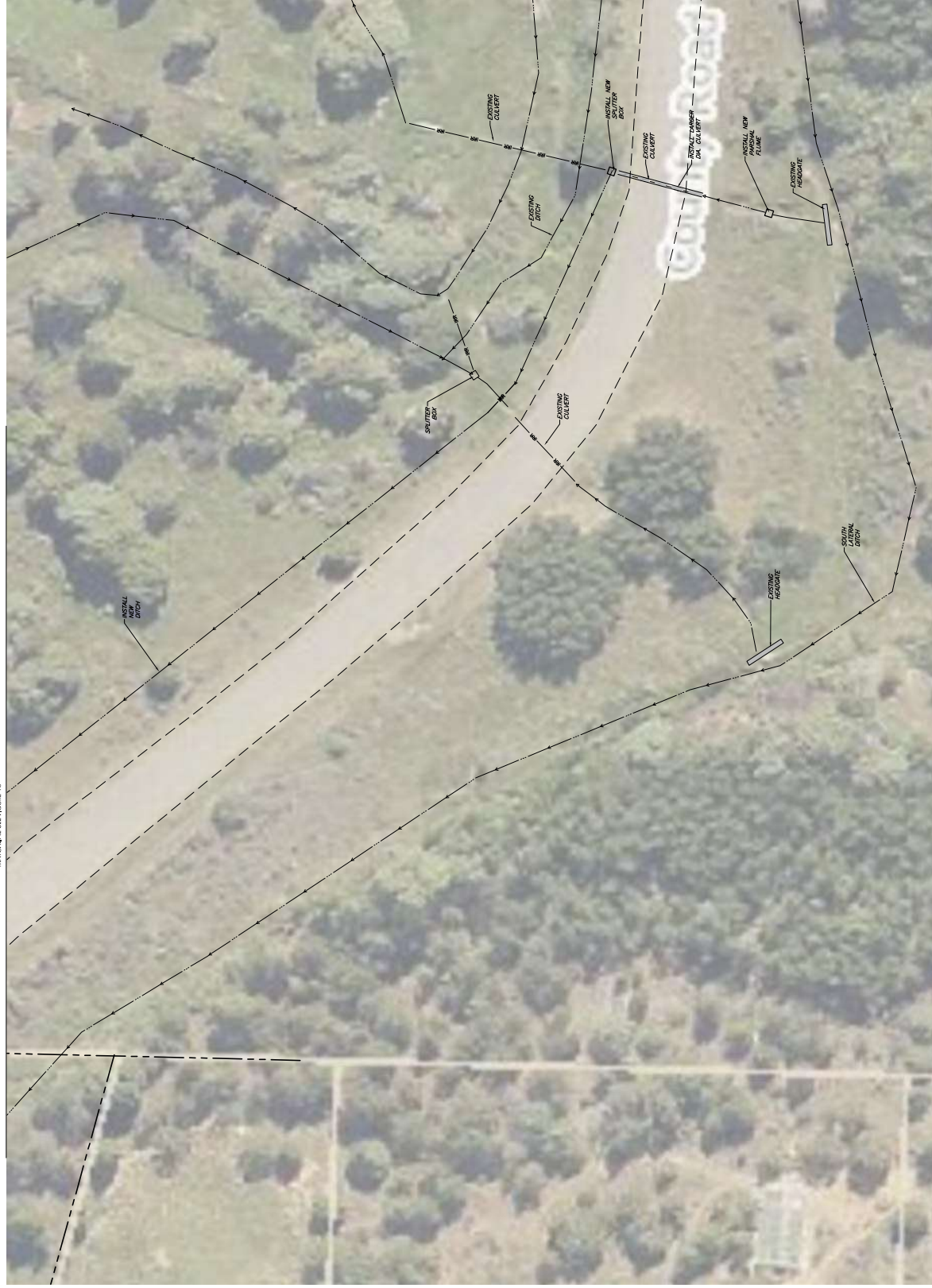
Preliminary Operations
Reservoir Layout

Job No.	2015-440.001
Drawn By	ABR
Date	07/18/2015
C.C.	PEC
File	2015-440.00_202.dwg

Fig. 10

Of

MATCHING SEE FIGURE 10



Town of Norwood
Raw Water System
Feasibility Study

#	Revision	Date	By
1			

Preliminary Operations
Reservoir Conveyance
Improvements

Job No.	2015-440.001
Drawn By	ABR
Date	07/18/2016
C.C.	PE
File	2015-440.001_2016

Fig. 11

Of

Preliminary
Not For
Construction