City of Willows Submission

Information needed to characterize individual Ag Dominated Water Bodies

(to be used in conjunction with Water Body Categorization Flow Chart 1 and completed in partnership with the entity that manages/operates the Water Bodies evaluated within this document)

Water Body Categorization Information

I. General

1. Entity or district name and mailing address (include website address, if applicable)

   Applicant:
   City of Willows
   Willows City Hall
   201 N. Lassen Street
   Willows, CA 95988

   Managing/operating entity:
   Glenn-Colusa Irrigation District
   344 East Laurel Street
   Willows, CA 95988

2. Manager or Contact Person (include phone and email)

   Skyler Lipski
   Public Works Director
   slipski@cityofwillows.org
   530-934-7041

   Zac Dickens
   Lead Engineer
   zdickens@gcid.net
   530-518-7134

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3. Complete the information needed in Table 1 as provided, with a separate record for each water body to be evaluated:

Table 1 Water Body Information

Name of water body	**Type** *(natural, modified, or constructed)*	**Ag Dominated Water Body Category** *(from Flow chart 1)*	**For Constructed or Modified**			**Length of water body or segment**	**Water Type** *(e.g., Supply Water only, Ag return flows subsurface tile drainage water, municipal or industrial wastewater, storm water)*	**Flow Characteristics/ Flow Period**		**Channel Mainte-nance Activities and Frequency**
			Type of Construction or Modification *(e.g. earth-lined, concrete, underground pipe)*	**Year of Construction or Modification**	**Purpose(s) of Construc-tion**			**Natural**	**Managed**	
Ag Drain C (Logan Creek)	*Modified*	*M1*	*Earthlined*	*Early 1900s*	*Ag Drainage*	*17 miles*	*Ag return flows, treated municipal wastewater, wetlands drainage*	*Head-waters are cut off, so no natural flow*	*Intermittent flow conditions/ Year-round mgmt. related to irrigation and wetlands flows*	*Excavation as needed (no set frequency, may be every other year or up to 5 years apart)*

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4. List sources, documents, reports or references used for making the Water Body Category (Flow Chart 1) determination provided in Table 1 for the area under consideration. Links to websites can also be provided if applicable.

    - GCID district maps – A map from the 1920's shows Ag Drain C much as it looks now. The natural headwaters of North Fork Logan Creek and Logan Creek west of Highway 5 had been diverted and significant hydro-modifications were made to the channel throughout its extent for the purpose of agricultural drainage. Historic maps are located at the district office in Willows.

      More information on the history and management practices of the Glenn-Colusa Irrigation District can be found at: http://www.gcid.net/documents/Water%20Supply/History_of_GCID_Water_Supply.pdf

    - National Hydrography Dataset –Ag Drain C (Logan Creek) has a feature type attribute of "Stream/River" (U.S. Environmental Protection Agency and the U.S. Geological Survey, 2005)

    - Central Valley Water Board Staff Site Surveys of the Willows area on 3/6/2012 and 3/14/2012 (Central Valley Water Board, 2012b) (Central Valley Water Board, 2012c)

    - Central Valley Water Board Meeting Notes for a meeting on 3/6/2012 with GCID and City of Willows representatives. (Central Valley Water Board, 2012a)

    - Central Valley Water Board Meeting Notes for a meeting on 3/17/2014 with GCID and City of Willows representatives. (Central Valley Water Board, 2014)

    - 1992 Inland Surface Water Plan report – section of Ag Drain C were classified as a C3 (modified) water body (Central Valley Water Board, 1992)

    - Appendix A of this report shows photographs of hydro-modifications along Ag Drain C

    - Appendix B shows Flow-related Photos of Ag Drain C

    - Appendix C shows Flow Data for Ag Drain C, downstream of the Logan Creek Weir for the time period of April 2012 through September 2013

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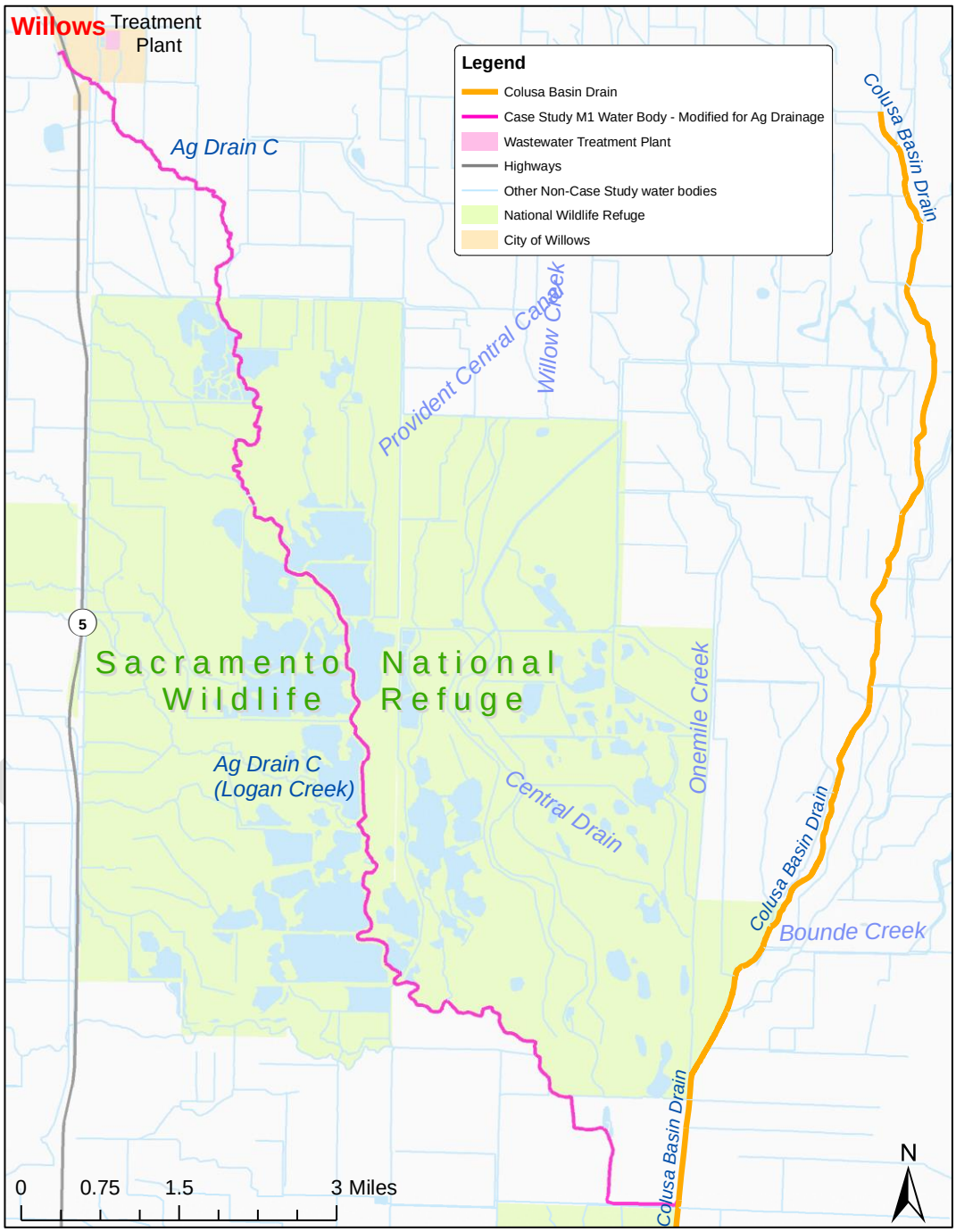
5. Provide a map showing boundaries of the water bodies under consideration (USGS Quad or other map. (If Geographical Information System (GIS) shape files are available, include as an attachment)

Figure 1. Willows Subarea



6. Source(s) of water for the area under consideration

-Agricultural return flows (the primary source of irrigation water is from the Sacramento River). GCID has 5 groundwater wells and there are 20-30 private groundwater wells throughout the GCID area, but their contribution to the drain water is minimal compared to that of the surface irrigation water. Groundwater use may increase if GCID's water rights are restricted due to lack of surface irrigation water.

-Effluent from the City of Willows, year-round flow

-Wetlands drainage from Sacramento National Wildlife Refuge

-Rainfall during winter season

II. <u>Inflows and Outflows to Water Bodies</u>

1. Map or schematic showing the key components of the surface water supply and drainage in the water bodies under consideration. The figure should include inflows and outflows to the water bodies and include (*if applicable*) the following:

   a. Location of surface water supply (intake) points for the water bodies under consideration

   b. Location of ground water supply points for the water bodies under consideration (This should only include wells which pump directly into canals or drains or wells used to supply water outside the land owners' control)

   c. Location of operation spills from the water bodies under consideration

   The water body under consideration is primarily used for Ag Drainage. See Figure 2 on the next page that shows the inflows and outflows in Ag Drain C. The majority of inflows to Ag Drain C are from surrounding Ag Drains with the exception of a supply inflow from the Western Canal. The primary outflow is to the Colusa Basin Drain, although the water in Ag Drain C may be recirculated as supply water to surrounding farms to the south via the Logan Creek Lateral.

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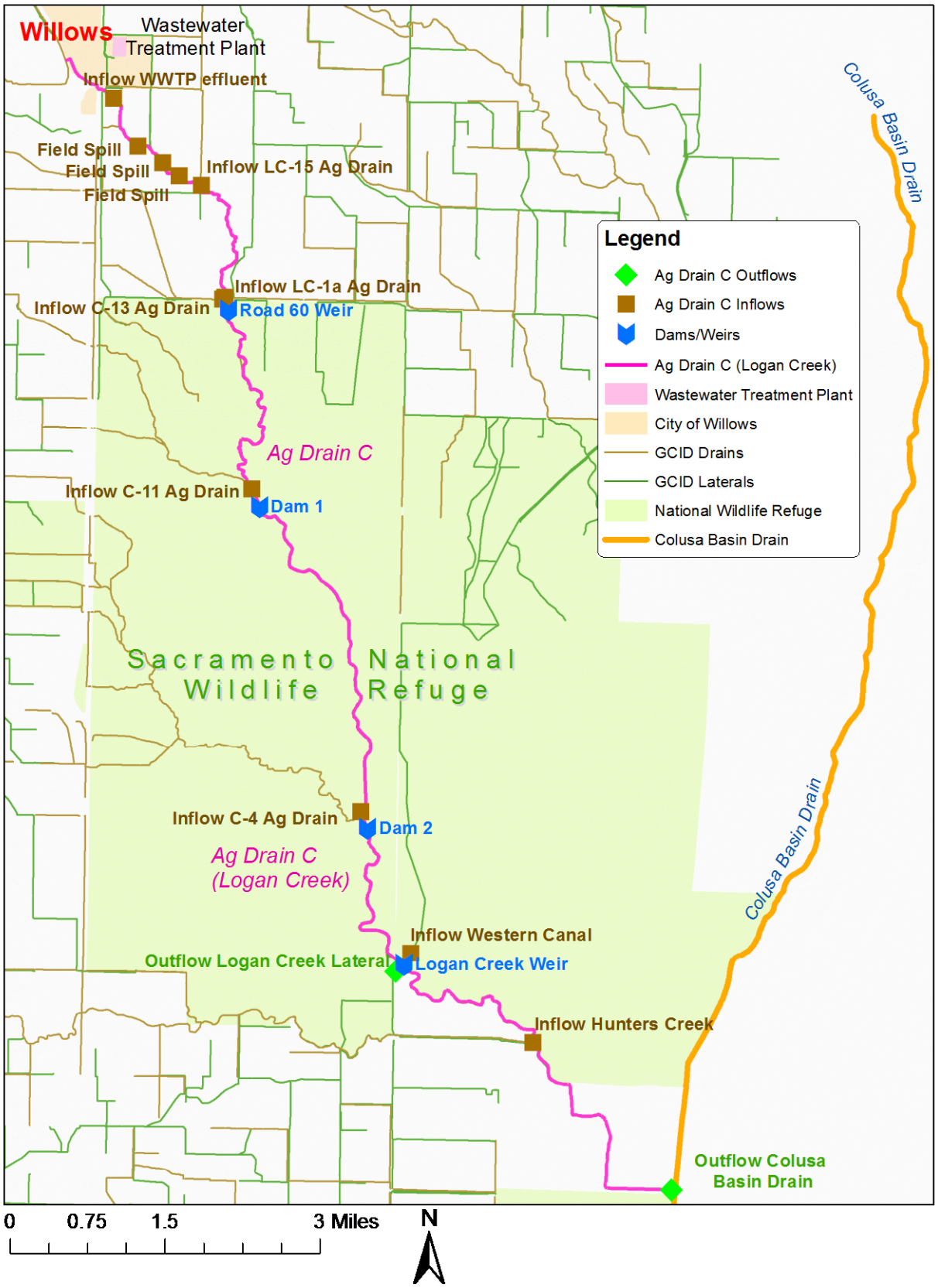
Figure 2 Willows Subarea - Inflows and Outflows



MUN Beneficial Use Evaluation

I. Municipal and Domestic Supply (MUN) use

a. List any known State Water Rights information pertaining to the municipal and/or domestic supply use in or downstream of the water bodies under consideration, even if the right has never been exercised (if applicable). *For more information on State Water Rights information and the use of database search and mapping tools, visit the following website: http://www.swrcb.ca.gov/waterrights/water_issues/programs/ewrims/*

No known State Water Rights records for a MUN use in the immediate water body under consideration or in the downstream water bodies prior to the Sacramento River.

b. Describe other municipal and/or domestic supply use of the surface water system since November 1975 (if applicable)

No known MUN use since November 1975. The City of Willows and surrounding vicinities rely on ground water as their municipal source.

c. Map showing any diversion points in or downstream of the area under consideration where water is used for municipal and/or domestic supply.

NA – no diversions prior to Sacramento River

II. Water Quality Monitoring Program

1. Is the area under consideration covered by water quality monitoring under the Central Valley Irrigated Lands Regulatory Program (ILRP) or any other monitoring program?

Yes, the area falls under the Central Valley Irrigated Lands Regulatory Program.

A significant portion of the area under consideration is covered as part of the California Rice Commission (contact – Tim Johnson).

The area is also covered as part of the Sacramento Valley Coalition (contact – Bruce Houdesheldt).

Information on monitoring sites, results and other information can be found at the following website:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/index.shtml

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Website links may be provided in lieu of separately answering questions 2-6, if they adequately provide the same information as requested below. If such links are utilized, a Table or Figure reference and page number should be provided if needed. Alternately, information for #2 may be added to the map provided for the water body characterization under A.II.

2. Map showing the location and identifying number of all current and proposed water quality and/or flow monitoring points for all of the following that exist in the area being considered including *as applicable*:

   a. Supply water to the area under consideration

   b. Collected subsurface and surface drainage entering the area under consideration

   c. Surface water drainage system

   d. Drains carrying subsurface drainage water or blended water

   ****The map must show monitoring station(s) that represent discharge of Ag drainage from the area under consideration**

   Figure 3 is a map of monitoring sites for the Sacramento Valley Water Quality Coalition and the City of Willows along Ag Drain C. GCID operates a flow and temperature station just downstream of the Logan Creek Weir (see Figure 2).

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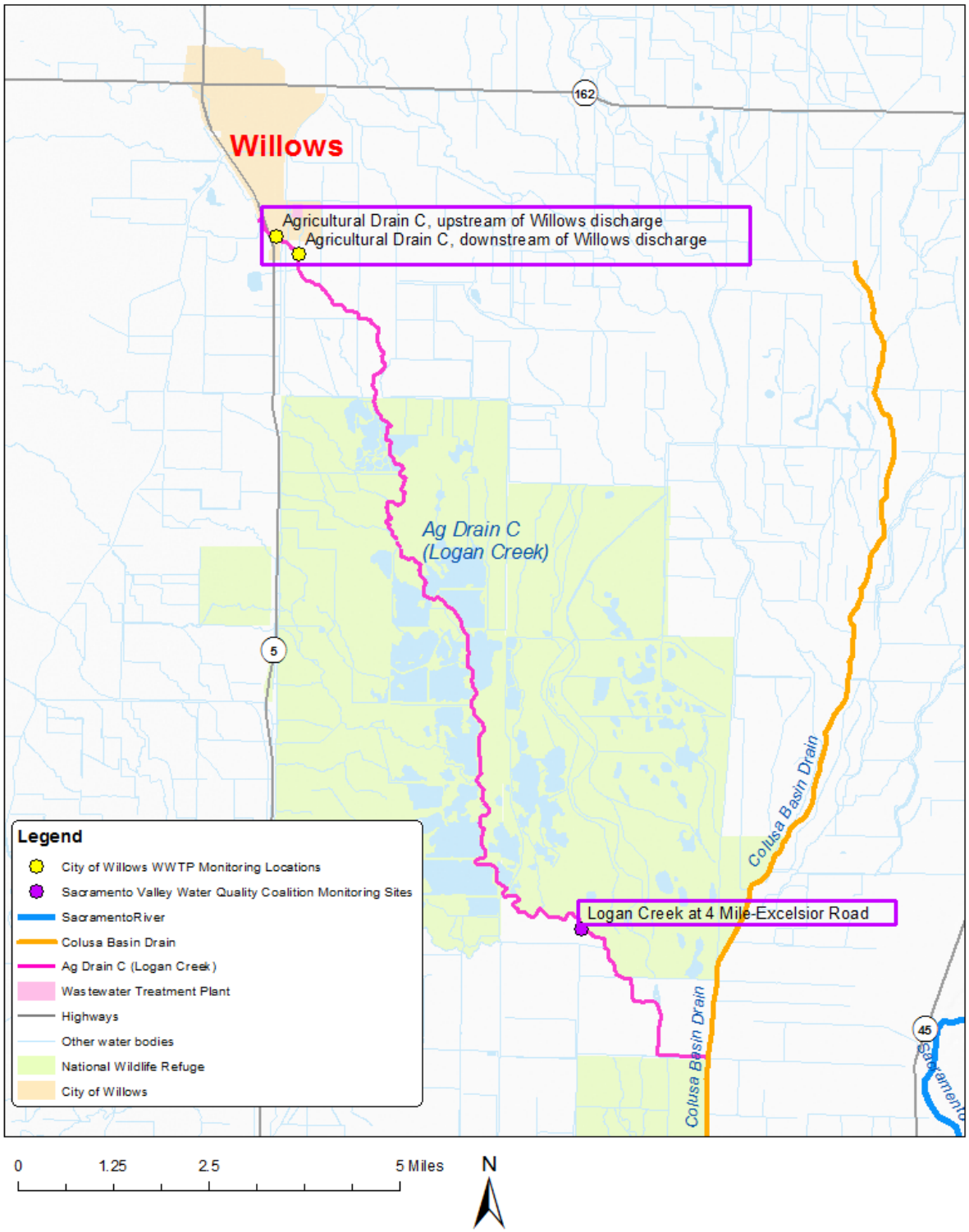
Figure 3 ILRP and NPDES Monitoring Locations in the area under consideration



3. Summarize in existing report or in an attached EXCEL format: monitoring location and identifying number, parameters measured, frequency, period of anticipated sampling (e.g.

2014-2016, ongoing, etc.) and location of resulting data.

Note - A full description of the monitoring and reporting plans for the Sacramento Water Quality Coalition and the California Rice Commission, including locations, frequency and sampling periods can be found in the links provided in answer 4 below.

Special Monitoring Site			
Site Identification	**Site Code**	**Latitude**	**Longitude**
Logan Creek (Ag Drain C) at 4 Mile-Excelsior Road	LGNCR	39.3653 N	-122.1161 W

Relevant monitoring site for Sacramento Water Quality Coalition in Ag Drain C:

Special Project sites are monitored as needed in a surface water quality management plan (SQMP) to evaluate commodity or management practice-specific effects on identified water quality problems, to evaluate sources of identified water quality problems, and to monitor continuing status of identified water quality problems. ***No monitoring is currently scheduled for this site.***

City of Willows Wastewater Treatment Plant NPDES Monitoring

City of Willows Wastewater Treatment Plan NPDES Self-monitoring (Receiving Waters) is conducted at RSW-001 (1500 feet upstream from Ag Drain C discharge point) and RSW-002 (100 feet downstream from Ag Drain C discharge point) for the following:

Monitoring Parameter	**Minimum Sampling Frequency**
pH	2/Month
EC	2/Month
Dissolved Oxygen	2/Month
Turbidity	2/Month
Temperature	2/Month
Hardness	1/Month
Nitrate (as N)	1/Month
Ammonia	1/Month[2]
Priority Pollutants	1/Year[1,2]
Dichlorobromomethane	1/Month
Chlorodibromomethane	1/Month
Fecal Coliform Bacteria	1/Quarter
Receiving Water Conditions	1/Month

1 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Central Valley Water Board or the State Water Board.

2 Concurrent with effluent priority pollutant sampling, including pH, temperature and hardness.

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4. Summary of the available monitoring data including parameters measured, number of analyses , and inclusive dates of sampling

Monitoring and Assessment Reports for the Irrigated Lands Regulatory Program for the California Rice Commission and the Sacramento Valley Water Quality Coalition can be found at:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/monitoring_plans_reports_reviews/index.shtml

Monitoring Data collected since 2004 under the Irrigated Lands Regulatory Program can be found at:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/water_quality_monitoring/index.shtml

All ILRP data is eventually loaded into the California Environmental Data Exchange Network (www.ceden.org)

Link to City of Willows NPDES Self-Monitoring Reports can be found via the CIWQS database at:

https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportEsmrAtGlanceServlet?inCommand=reset

Search Criteria:

Facility Name: "Willows Wastewater Treatment Plant"
Region: Region 5R – Redding
County: Glenn

If the area under consideration is covered by the Irrigated Regulatory Lands Program, list any Management Plans previously developed or currently under development. For areas not covered by the Irrigated Regulatory Lands Program, list any known or suspected water quality concerns (including elevated background concentrations in surface or groundwater supplies).

Sacramento Valley Coalition Management Plan

E.coli (Logan Creek at 4 mile road)

Link to website on Management Plans:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/sacramento_valley_waterquality/index.shtml

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California Rice Commission Management Plans:

2010 – Propanil

2010 – Algae

Link to website on Management Plans:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/california_rice_commission/index.shtml

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Works Cited

Central Valley Water Board. (1992). *Staff Report - Consideration of Water Body Designations to Comply with Provisions of the Water Quality Control Plan for Inland Surface Waters of California (ISWP).*

Central Valley Water Board. (2012a). *Meeting Notes - March 6, 2012 Glenn-Colusa Irrigation District.* Willows.

Central Valley Water Board. (2012b). *Staff Survey Write-up for the City of Willows/MUN Beneficial Use Project, March 6, 2012.* Willows.

Central Valley Water Board. (2012c). *Staff Survey Write-up for the City of Willows/MUN Beneficial Use Project, March 14, 2012.* Willows.

Central Valley Water Board. (2014). *Meeting Notes - March 17 2014 GCID.* Willows.

U.S. Environmental Protection Agency and the U.S. Geological Survey. (2005). National Hydrography Dataset Plus - NHDPlus, Edition 1.0.

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Appendix A – Photos of Ag Drain C

Photo 1. Ag Drain C downstream of effluent discharge (looking upstream) – April 17, 2012

Photo 2. Corrugated Metal Pipe Road Crossing over Ag drain C (looking downstream) – March 21, 2014

Photo 3. Lateral 26-2b Flume over Ag Drain C – March 21, 2014

Photo 4. Ag Field Spill to Ag Drain C – March 21, 2014

Photo 5. Ag Drain C at Road 60 Weir (looking downstream) – May 9, 2012

Photo 6. Ag Drain C at the dam downstream of the C-11 and Ag Drain C confluence in the Sacramento National Wildlife Refuge - May 9, 2012

Photo 7. Logan Creek Weir (looking upstream) – March 21, 2014

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Appendix B – Flow-related Photos for Ag Drain C

Photo 1. Low Flow Period, Ag Drain C at Road 60 (looking downstream) – March 12, 2013

Photo 2. High Flow Period, Ag Drain C at Road 60 (looking downstream) - July 24, 2013

Photo 3. Low Flow Period, Ag Drain C, upstream of effluent discharge (looking downstream) – March 27, 2013

Photo 4. High Flow Period, Ag Drain C, upstream of effluent discharge (looking downstream) - July 24, 2013

Appendix C – Flow Data for Ag Drain C, downstream of Logan Creek Weir (4/2012 – 9/2013)

Graph courtesy of Glenn Colusa Irrigation District, 2014