



PUBLIC FINANCE
& MANAGEMENT
RESOLVED

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Reclamation District 900

Drainage Operations and Maintenance Assessment

FINAL ENGINEER'S REPORT

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1. Introduction

Background

Reclamation District 900 (RD 900) is responsible for operating and maintaining 14.4 miles of levees that surround West Sacramento. It is also responsible for operating and maintaining the internal drainage system (canals, ditches, pump stations, and detention basins) that collects and removes rain and storm waters to prevent flooding.

Since its formation, RD 900 has levied a property assessment under the Reclamation District Act to pay for operation and maintenance of both the levees and the internal drainage system. The levee operation and maintenance portion of the assessment was eliminated when WSAFCA adopted its flood control assessment in 2007 and committed a portion of that assessment to RD 900 for levee operation and maintenance. The remainder of the existing RD 900 assessment has been used to pay for operation and maintenance of the internal drainage system. RD 900's assessment rates have not been increased since 1990. However, in the past 26 years, the costs of operating and maintaining the internal drainage system have increased due to:

- Development (more concrete and asphalt increasing water runoff)
- Additional storm water facilities (pumps and detention ponds)
- Aging pump stations (average lifespan is 20 years) and water conveyance facilities (canals, ditches, and pumps)
- Encroachment by homes/businesses on ditches and canals, restricting maintenance access.
- Vandalism of facilities due to urbanization.
- Limited capacity in storm water conveyance pipes, increasing costs for pumping.

RD 900 is proposing to levy a new assessment under the Benefit Assessment Act of 1982 for internal drainage to adequately fund required operation and maintenance activities, and minimize the need for long-term debt financing for facility replacement. If the new assessment described herein is levied, funds collected for levee operation and maintenance may not be spent on the internal drainage system, and vice versa. Also, if approved by property owners, the new assessment described herein would replace the existing assessment under the Reclamation District Act.

Purpose of Engineer's Report

This Engineer's Report describes, in detail, the methodology for levying an assessment upon parcels that receive special benefit from the internal drainage operations and maintenance services provided by RD 900. As further described within this report, the assessment is intended to provide RD 900 with sufficient funding to continue providing the current drainage services over the next 30 years.

Report Organization

This report is divided into six sections. **Section 1** provides the background and purpose; **Section 2** of this report outlines the authorization and process for imposing the proposed assessment; **Section 3** describes the funding plan for drainage services; **Section 4** details the methodology for levying an assessment that is proportional to the special benefits received by each parcel being assessed; **Section 5** describes how the assessment would be administered on an annual basis; and **Section 6** provides the special benefit findings and certification by the Assessment Engineer.

Appendix A provides the annual budget assumed for the purpose of developing the funding plan for RD 900.

Appendix B provides the proposed assessment roll.

2. Authority and Process

The Drainage Operations and Maintenance Assessment (Assessment) would be imposed by RD 900 pursuant to the Benefit Assessment Act of 1982 (1982 Act) codified in California Government Code §§ 54703 - 54719. Under Government Code §54710 (a), RD 900 is authorized to levy an assessment to finance the maintenance and operation costs for drainage services. Furthermore under §54710.5, the assessment may include the cost of installation and improvement of the facilities providing the drainage services. As further detailed in Section 3, the Assessment will finance the annual cost of operations and maintenance, as well as create a reserve for repairs, rehabilitation, and replacement of the drainage facilities.

Under Government Code §54711, the assessment must meet the following requirements:

1. The amount of the assessment imposed on any parcel must be related to the benefit received by the parcel;
2. The aggregate amount of the assessment cannot exceed the annual cost of providing the service; and
3. The revenue derived from the assessment must only be used for the services identified as the basis for assessment.

In addition, all special benefit assessments must also comply with Article XIID of the State Constitution, commonly referred to as Proposition 218, and the Proposition 218 Omnibus Implementation Act (Government Code §53750 et seq.). These requirements outline the process for imposing the Assessment, including the requirement that this Engineer's Report documents the special benefits conferred by the service provided, the process for imposing the Assessment, and property owner approval through a balloting process.

This Engineer's Report has been prepared to:

1. Contain the information required pursuant to Government Code §54716 (a), including;
 - a. a description of the services proposed to be financed through the revenue derived from the Assessment;
 - b. a description of each lot or parcel of property to be subject to the Assessment;
 - c. the amount of the proposed Assessment for each lot or parcel;
 - d. the basis of the Assessment; and,
 - e. the schedule of the Assessment;
2. Determine the special benefits received from the services provided by RD 900 by benefiting properties; and,
3. Assign a method of apportioning the Assessment to benefiting parcels.

Following submittal of this report to the RD 900 Board of Trustees (Board) for preliminary approval, the Board may, by resolution, call for an assessment ballot proceeding and public hearing on the establishment of the proposed Assessment.

If the Board approves such a resolution, the secretary of the Board will initiate the notice, protest, and hearing procedure required by Government Code §54716 and Article XIID. A notice and assessment ballot will be mailed to property owners within the RD 900 boundaries. Such notice would include a description of the services to be funded by the proposed

Assessment, the proposed Assessment amount for each parcel owned, the duration of the Assessment, an explanation of the method of voting on the Assessment, and the name and telephone number of the person designated by the Board to answer inquiries regarding the protest hearing. Each notice would also specify the date, time, and place of the public hearing and a summary of the ballot return procedures. Finally, each notice would include a ballot upon which the property owner can mark his or her approval or disapproval of the proposed Assessment, as well as affix his or her signature, and a postage prepaid envelope in which to return the ballot.

Property owners will have at least 45 days to return the assessment ballots. On the last day of the balloting period, the public hearing will be held for the purpose of receiving public testimony regarding the proposed Assessment. At the public hearing, property owners will have the opportunity to address the Board about the proposed Assessment. Ballots must be submitted prior to the close of the public hearing. Property owners may also revise previously submitted ballots prior to the close of the public hearing.

If the votes received in favor of the Assessment outweigh the votes received opposing the Assessment (weighted by the proportional financial obligation of the property for which the ballots are submitted), the Board may continue with the process of imposing the proposed Assessment and its future levy. If the assessments are so confirmed and approved by the Board, the Assessment roll would be submitted in future years to the County Auditor Controller for inclusion on the secured property tax rolls, or RD 900 may directly bill the property owner for the Assessment pursuant to Government Code §54718. As outlined in Government Code §53739, the Board may levy the Assessment in future years without conducting a new ballot proceeding so long as the Assessment is within the stated inflation-adjusted Assessment Rate authorized by the original balloting proceeding.

3. Proposed Services and Funding Plan

Services Funded by the Assessment

The services to be funded by the proposed Assessment include all activities associated with the collection, conveyance, and discharge of storm water within the boundary of RD 900. These services include drainage canal maintenance, pump station operations and maintenance, and detention basin maintenance. In addition to the on-going performance of these services, the proposed assessment will also provide adequate reserves to support long-term repair, rehabilitation, and replacement of drainage facilities in order to ensure an adequate level of service over the duration of the Assessment. Collectively, these services are herein referred to as "Drainage Services."

Annual Budget for Drainage Services Provided by RD 900

The annual revenue and expenses for all services provided by RD 900 were reviewed and updated with input from RD 900 staff and the District Engineer. The revenue and expenses for levee operations and maintenance, and for contract services provided to Reclamation District 537, Reclamation District 827, and the Washington Unified School District were separated from the revenue and expenses associated with the Drainage Services. **Table 1** summarizes RD 900's annual budget required for FY 2016/17. Future year's expenses and required revenue for Drainage Services are expected to increase annually, as discussed in **Section 5** under "Escalation of the Assessment".

RD 900 currently plans to perform the long-term repair, rehabilitation, and replacement of drainage facilities on a *pay-as-you-go* basis. The future periodic costs associated with these activities have been annualized based on the frequency of occurrence, current cost estimates for 2016, and a savings interest rate of 0.5% on reserve funds. The savings rate is based on the average Yolo County Treasurer's Pooled Interest Rate for the last five years. The cost estimates do not consider the impact of inflation on future costs for labor and materials. The escalation of the Assessment is intended to offset these cost increases.

It should be noted that the budget for Drainage Services shown within this Engineer's Report was developed for the purpose of determining the annual revenue required for this proposed Assessment. Future budgets for Drainage Services approved by the RD 900 Board of Trustees may vary from year to year according to actual anticipated expenses and revenues. In addition, although the budget was developed with a *pay-as-you-go* approach, the RD 900 Board of Trustees may elect to finance certain activities and use Assessment revenues to pay debt service.

Table 1 – Proposed Budget for FY 2016/17

Proposed RD 900 Budget	Drainage	Flood Control	<u>Contract Services</u>			Totals
			RD 537	RD 827	WUSD	
Expenditures						
<i>District Operations</i>						
Salaries and Fringe Benefits	496,570	188,950	15,430	880	3,670	705,500
Equipment and Supplies	145,760	48,080	-	-	1,860	195,700
Administrative Expenses	188,650	68,140	5,570	320	1,320	264,000
<i>Subtotal District Operations</i>	<i>830,980</i>	<i>305,170</i>	<i>21,000</i>	<i>1,200</i>	<i>6,850</i>	<i>1,165,200</i>
<i>Facility Operations and Maintenance (O&M)</i>						
Levee O&M	-	209,600	-	-	-	209,600
Pump Station O&M	725,400	-	-	-	10,500	735,900
Detention Basin O&M	90,600	-	-	-	-	90,600
Canal Maintenance	89,800	-	-	-	-	89,800
<i>Subtotal Facility O&M</i>	<i>905,800</i>	<i>209,600</i>	<i>-</i>	<i>-</i>	<i>10,500</i>	<i>1,125,900</i>
<i>Reserve Funding for Repairs, Rehabilitation and Replacement (RR&R)</i>						
Capital Projects	80,870	24,180	-	-	-	105,050
Levee RR&R	-	56,150	-	-	-	56,150
Pump Station RR&R	542,050	-	-	-	650	542,700
Detention Basin RR&R	8,750	-	-	-	-	8,750
Canal RR&R	152,100	-	-	-	-	152,100
Contingencies	79,450	-	-	-	-	79,450
<i>Subtotal Reserve Funding for RR&R</i>	<i>863,220</i>	<i>80,330</i>	<i>-</i>	<i>-</i>	<i>650</i>	<i>944,200</i>
Total Expenditures	\$2,600,000	\$595,100	\$21,000	\$1,200	\$18,000	\$3,235,300
Revenues						
WSAFCA Assessment		595,100				595,100
RD 537 Administration Contract			21,000			21,000
RD 827 Administration Contract				1,200		1,200
WUSD O&M Contract					18,000	18,000
Proposed RD 900 Assessment	2,600,000					2,600,000
Total Revenues	\$2,600,000	\$595,100	\$21,000	\$1,200	\$18,000	\$3,235,300
Net Income	\$0	\$0	\$0	\$0	\$0	\$0

Reference: RD 900 Budget for ER 2016-01-28.xlsx

4. Assessment Methodology

General Discussion

Requirements of Proposition 218

To levy an assessment for a property related service such as drainage, Proposition 218 requires the local agency to:

- Separate the general benefits from the special benefits conferred on a parcel;
- Identify the parcels that have special benefits conferred on them by the facility and/or service;
- Calculate the proportionate special benefit for each parcel in relation to the entirety of the Capital and O&M expenses being funded; and
- Ensure the assessment does not exceed the reasonable cost of the proportionate special benefit conferred on each parcel.

Special Benefits vs. General Benefits

Proposition 218 requires any local agency proposing to increase or impose a special assessment to “separate the general benefits from the special benefits conferred on a parcel.” (Cal. Const. art. XIID §4). The rationale for separating special and general benefits is to ensure that property owners are not charged a special benefit assessment in order to pay for general benefits provided to the general public or to property outside the assessment district. Thus, a local agency carrying out a project that provides both special and general benefits may levy an assessment to pay for the special benefits, but must acquire separate funding to pay for the general benefits.¹

A special benefit is a particular and distinct benefit over and above the general benefits conferred on real property located in the district or to the public at large. The total cost of the services must be apportioned among the properties being assessed based on the proportionate special benefit the properties will receive. Moreover, the governmental agency must demonstrate through a balloting process that the ballots submitted in opposition to the assessment do not exceed the ballots submitted in favor of the assessment, weighted according to the proportional special benefit and financial obligation of the affected properties.

¹ *Silicon Valley Taxpayers' Assn., Inc. v. Santa Clara County Open Space Authority*, 44 Cal. 4th 431, 450; 2008

In this instance, the drainage activities of RD 900 provide a special benefit only to those properties located within the district boundaries. Specifically, all parcels within RD 900 boundaries receive a special benefit from the drainage services provided by RD 900. RD 900 provides Drainage Services through the operation and maintenance of a system of drainage canals, pump stations, and detention ponds. This system collects runoff from properties within the district and discharges excess drainage into either the Sacramento Deep Water Ship Channel or the Yolo Bypass. The removal of surface water prevents flooding and ponding of water that would otherwise damage or limit the usefulness of the properties located within the district.

The special benefit provided to each parcel within the RD 900 boundary varies based on parcel size, parcel use, and the services required to collect and discharge the runoff from the parcel. Every parcel contributes to the internal drainage system and ultimately to the demand for drainage services provided by RD 900.

The drainage services provided by RD 900 are a special benefit and not a general benefit. As noted above, special benefits are those “particular and distinct over and above general benefits conferred on real property located in the district or to the public at large.” (Cal. Const. art. XIII §2(i)) Because the drainage services and facilities protect particular, identifiable parcels (including any appurtenant facilities or improvements) from damage and/or loss of usefulness due to inundation, the benefits are provided directly to those parcels, and to none other. By contrast, general benefits provided to the public at large are discussed in terms of general enhanced property values, provision of general public services such as police and fire protection, and recreational opportunities that are available to people regardless of the location of their property. (See, e.g., Cal. Const. art. XIII §2(i), 6(2)(b)(5); Silicon Valley Taxpayers, 44 Cal. 4th 431. 450–56.)

The issue surrounding general benefits merits further discussion because Drainage Services have an obvious indirect relation to the very provision of general benefits. For example, the facilities and services will protect parks and schools that are used by people regardless of whether they live in the benefit area or not. But this indirect relation does not mean that the Drainage Services themselves will provide any general benefits. Rather, the Drainage Services will provide direct special benefits to the public parcels (such as parks and schools) that may themselves be used in the provision of general benefits.

More to the point, the public at large will be paying for the special benefits provided to specifically benefiting public property (e.g. a school), and specially benefited property owners’ assessments will not be used to subsidize general benefits provided to the public at large or to property outside the RD 900 boundaries. All property that receives a special benefit from the Drainage Services will be assessed, including parks, schools, city facilities, and other parcels used in the provision of general benefits. Thus, the general public may pay for a portion of the Assessment for Drainage Services because the assessed public agencies may use general taxes and other public revenue to pay their assessments.

Proposed Assessment Boundary

All parcels within RD 900 boundaries receiving special benefit from the operation and maintenance of the District’s drainage facilities are within the benefit area of the proposed assessment. Therefore, the boundary of the benefit area is the District boundary. The boundary area and the benefiting properties are shown in **Figure 1**, Assessment Boundary Map.

Assessment Apportionment Methodology

The methodology for apportioning the annual assessment is based on calculating the number of equivalent benefit units for each parcel based on the relative damage reduction benefit it receives, the relative quantity of runoff it contributes to the drainage system and the services required to collect and discharge runoff from the property. The methodology utilizes the following property characteristics:

1. The land use category assigned to each parcel;
2. The relative flood damage reduction factor assigned to each land use category;
3. The relative coefficient of runoff per acre assigned to each land use category;
4. A "drainage factor" assigned to each parcel based on the services required to collect and discharge the runoff from the parcel; and
5. The size (acreage) of each parcel.

Land Use Categories

There are multiple land use codes used by the Yolo County Assessor to categorize the properties within RD 900. Each land use code was evaluated and assigned to a generalized land use category (e.g.: agricultural, residential, commercial, industrial) for the purpose of identifying the runoff characteristics of all parcels within each category for use in apportioning special benefit. A random 10 percent sample of parcels for each County land use code was checked to ensure that it had been assigned to the appropriate land use category by reviewing aerial photographs to confirm each parcel's use and runoff characteristics. Additional land use categories were added to classify parcels that were vacant, open space, or otherwise dissimilar from the generalized land use categories.

Parcels that provide Drainage Services do not receive a special benefit from the Assessment. An example of this would be the underlying parcel of a detention pond; the detention pond is not apportioned special benefit because it is utilized to provide Drainage Services. A special land use category, *Drainage Works*, was created to account for these parcels within RD 900.

Table 2 summarizes the catalog of land use categories, and the total number and acreage of parcels associated with each land use category.

Table 2 – Catalog of Land Use Categories

Land Use Category	Total Number of Parcels	Total Parcel Acreage
Single-Family Residential	10,161	2,498.57
Multi-Family Residential	403	375.59
Commercial	399	588.72
Industrial	393	1,265.70
School	15	207.72
Open Space	204	769.58
Agricultural	95	2,012.10
Vacant - Developed	32	147.31
Vacant - Undeveloped	495	1,268.16
Drainage Works	91	745.75

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Relative Damage Reduction Factor

The special benefit received by each parcel is proportional to the reduction in flood damage to the property that would otherwise occur without the services provided by RD 900. To properly apportion the flood damage reduction benefit, each land use category was assigned a relative flood damage reduction factor.

- Single and Multi-Family Residential properties less than or equal to 0.5 acres are used as the baseline and assigned a relative damage reduction factor of 1.0.
- Single-Family Residential properties greater than 0.5 acres are assessed by treating the first 0.5 acres as Single-Family Residential and the remaining acreage as Open Space.
- Commercial and Industrial properties are assigned a relative flood damage reduction factor of 1.6. This increase was based on a comparison of the U.S. Army Corps of Engineers’ depth damage curves for structure and contents for Commercial and Industrial properties relative to Single-Family Residential.
- For Agricultural, Vacant - Undeveloped, and Open Space properties, the relative flood damage reduction factor is determined to be 0.1 to account for crop loss, landscape damage, and/or minor erosion damage.
- The relative flood damage factor for Vacant - Developed properties is increased to 0.25 to account for increased damage to utilities, parking areas and other site improvements.

- School properties were evaluated to determine the weighted damage to buildings (Commercial), courtyards and athletic fields (Open Spaces), and parking lots (Vacant - Developed). Based on this evaluation, a relative flood damage reduction factor of 0.7 is assigned to school properties.

Table 3 summarizes the relative flood damage reduction factor assigned to each Land Use Category.

Relative Runoff Factor

To properly apportion benefit based on the relative quantity of runoff from each property, each land use category was assigned a relative runoff coefficient to compare the quantity of runoff per acre between land use categories. The runoff coefficient is a function of the percent impervious cover over the entire parcel. Therefore, land use categories with higher relative runoff coefficients (e.g.: Industrial) receive a relatively greater benefit because a greater quantity of runoff is generated per acre than those with lower relative runoff coefficients (e.g.: Open Space).

Single-Family Residential properties greater than 0.5 acres are assessed by treating the first 0.5 acres as Single-Family Residential and the remaining acreage as Open Space.

School properties are assigned a coefficient to reflect a weighted average runoff coefficient from the main building area (commercial), athletic fields and courtyards (open space), parking lots and blacktop areas (Vacant - Developed).

Table 4 summarizes the relative runoff coefficient assigned to each Land Use Category.

Table 3 – Relative Flood Damage Reduction Factors

Land Use Category	Relative Flood Damage Reduction Factor
Single-Family Residential	
First 1/2 Acre	1.0
Additional Acreage	0.1
Multi-Family Residential	1.0
Commercial	1.6
Industrial	1.6
School	0.7
Open Space	0.1
Agricultural	0.1
Vacant - Developed	0.25
Vacant - Undeveloped	0.1
Drainage Works	0

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Table 4 – Relative Runoff Factors

Land Use Category	Runoff Coefficient	Relative Runoff Factor
Single-Family Residential		
First 1/2 Acre	0.7	1.0
Additional Acreage	0.3	0.4
Multi-Family Residential	0.7	1
Commercial	0.9	1.3
Industrial	0.9	1.3
School	0.7	1.0
Open Space	0.3	0.4
Agricultural	0.3	0.4
Vacant - Developed	0.9	1.3
Vacant - Undeveloped	0.3	0.4
Drainage Works	0	0

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Drainage Factors

The special benefit received by each parcel is dependent on the services required to capture and convey the runoff from the parcel. The following drainage categories were developed to characterize the required drainage services and assign a relative drainage factor.

- General Conveyance. This category is assigned to parcels that drain into RD 900 ditches. The runoff is conveyed to one of the District's main pumping plants and pumped out of the District into either the Sacramento Deep Water Ship Channel or the Yolo Bypass.
- Internal Detention and Pumping. This category is assigned to parcels that drain to an interior detention basin/pond maintained by RD 900. The water level in the detention basin is controlled by an RD 900 pump station that discharges into RD 900 general conveyance facilities. Parcels in this category receive twice the benefit of those in the General Conveyance drainage category.
- Internal Pumping Only. This category is assigned to parcels whose runoff drains to a collection area not maintained by RD 900 (e.g. a sports field graded to serve as a detention area, or a pond maintained by a homeowner's association) and then pumped into an RD 900 ditch by an interior pump station maintained by RD 900. Parcels in this category receive one-half of the incremental benefit received by parcels in the Internal Detention and Pumping category above the General Conveyance category.
- Gravity Drained. Parcels that drain by gravity outside of the District do not require conveyance or pumping from RD 900 facilities. However, these parcels still receive a special benefit from RD 900 collecting and pumping surrounding areas that would otherwise pond on parcels in this drainage category. The Engineer has determined that properties in this drainage category receive one-quarter of the benefit received by parcels in the General Conveyance category.

Table 5 summarizes the drainage categories and applicable drainage factors.

Parcel Size

The previous characteristics are used to determine the relative benefit between parcels of equal size. The final characteristic used to apportion the special benefit is the size of the parcel. Parcel acreage was obtained from Yolo County Assessor's data acquired through ParcelQuest. The data from ParcelQuest was compared to raw GIS parcel data downloaded from the Yolo County GIS Parcel Viewer. Parcels located along the boundary of the District were reviewed and the acreage adjusted to eliminate the portion beneath a levee footprint.

Table 5 – Drainage Categories and Factors

Drainage Category	Drainage Description	Drainage Factor
Gravity Drained	Parcels drain by gravity outside of the District without conveyance or pumping by RD 900.	0.25
General Conveyance	Parcels drain to RD 900 canals and conveyed to RD 900 pump stations for discharge out of the District.	1.0
Internal Pumping	Parcels drain to an interior detention basin maintained by others with pumps maintained by RD 900. Interior drainage discharges to RD 900 canals and conveyed to RD 900 pump stations for discharge out of the District.	1.5
Internal Detention & Pumping	Parcels drain to an interior detention maintained by RD 900 with pumps also maintained by RD 900. Interior drainage discharges to RD 900 canals and conveyed to RD 900 pump stations for discharge out of the District.	2.0

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Special Benefit Assessment Calculation

RD 900 analyzed the cost to provide Drainage Services over the long-term period of 30 years, including repair and replacement of equipment. It was determined the annual revenue required to continue to provide the Drainage Services over the next 30 years without incurring debt is \$2,600,000. This amount includes administration of the Assessment and contingency. A detailed budget is provided in **Appendix A**.

To determine the proposed assessment for an individual parcel, the amount of Equivalent Benefit Units (EBU) for the parcel is calculated and multiplied by the assessment rate per EBU. The proposed assessment rate per EBU is equal to the required annual cost divided by the total quantity of EBU's within the entire District. All factors to calculate the Parcel EBU can be found in the provided tables.

The proposed assessment for an individual parcel can be expressed by the following formulae:

$$[\text{Parcel EBU}] = \left[\begin{array}{c} \text{Relative Damage} \\ \text{Reduction Factor} \\ \text{(Table 3)} \end{array} \right] * \left[\begin{array}{c} \text{Relative} \\ \text{Runoff Factor} \\ \text{(Table 4)} \end{array} \right] * \left[\begin{array}{c} \text{Drainage} \\ \text{Factor} \\ \text{(Table 5)} \end{array} \right] * \left[\begin{array}{c} \text{Parcel} \\ \text{Acreage} \\ \text{(Assessor Data)} \end{array} \right]$$

$$[\text{Proposed Parcel Assessment}] = (\text{Parcel EBU}) * (\text{Assessment Rate per EBU})$$

The Assessment Rate required to collect the required annual revenue is **\$372.64** per EBU, with a minimum assessment of \$25 per parcel, consistent with CA Water Code §51335.5.

Example Assessment Calculations

Using the parcel assessment formula, parcel acreage, runoff coefficient from **Table 2**, drainage factor from **Table 3**, land damage reduction factor from **Table 4**, and the steps listed below, an individual parcel's assessment for either a current land use or potential future land use can be calculated.

- Step 1 – Determine the appropriate Land Use category and special benefit category for the property.
- Step 2 – Using **Table 3**, determine the relative flood damage reduction factor.
- Step 3 – Using **Table 4**, determine the relative runoff factor.
- Step 4 – Using **Table 5**, determine the drainage factor.
- Step 5 – Calculate the Parcel EBU using the formula above.
- Step 6 – Use the Assessment Rate per EBU from the above section.
- Step 7 – Calculate the parcel assessment by multiplying the Parcel EBU times the Assessment Rate.

The following examples illustrate the application of the assessment formula to determine the annual assessment for four hypothetical properties.

Example 1

Assume a 1.47 acre office complex whose runoff discharges to an RD 900 canal.

Land Use Category is Commercial

From **Table 3**, Relative Flood Damage Reduction Factor for Commercial is 1.6.

From **Table 4**, Relative Runoff Factor for Commercial is 1.3.

From **Table 5**, Drainage Factor for General Conveyance is 1.0.

$$[\text{Parcel EBU}] = (1.6) * (1.3) * (1.0) * (1.47) = 3.0576$$

$$[\text{Proposed Parcel Assessment}] = (3.0576) * (\$372.64) = \$1,139.38$$

Example 2

Assume a 0.12 acre single-family residential property in a subdivision with a detention basin and pumps maintained by RD 900.

Land Use Category is Single-Family Residential

From **Table 3**, Relative Flood Damage Reduction Factor for Single-Family Residential is 1.0.

From **Table 4**, Relative Runoff Factor for Single-Family Residential is 1.0.

From **Table 5**, Drainage Factor for Detention and Pumping is 2.0.

$$[\text{Parcel EBU}] = (1.0) * (1.0) * (2.0) * (0.12) = 0.24$$

$$[\text{Proposed Parcel Assessment}] = (0.24) * (\$372.64) = \$89.43$$

Example 3

Assume a 2.05 acre paved commercial parking lot drains to an RD 900 canal.

Land Use Category is Vacant - Developed

From **Table 3**, Relative Flood Damage Reduction Factor for Vacant - Developed is 0.25.

From **Table 4**, Relative Runoff Factor for Vacant - Developed is 1.3.

From **Table 5**, Drainage Factor for General Conveyance is 1.0.

$$[\text{Parcel EBU}] = (0.25) * (1.3) * (1.0) * (2.05) = 0.66625$$

$$[\text{Proposed Parcel Assessment}] = (0.66625) * (\$372.64) = \$248.27$$

Example 4

Assume a 5 acre residential property that drains to an RD 900 main canal.

Land Use Category is Single-Family Residential.

Since the property is Single-Family Residential and more than 0.5 acres, the first 0.5 acres will be calculated as Single-Family Residential and the remaining acreage will be calculated as Open Space.

For the first 0.5 Acres:

From **Table 3**, Relative Flood Damage Reduction Factor for Single-Family Residential is 1.0.

From **Table 4**, Relative Runoff Factor for Single-Family Residential is 1.0.

From **Table 5**, Drainage Factor for General Conveyance is 1.0.

$$[\text{Parcel EBU} - \text{First 0.5 Acres}] = (1.0) * (1.0) * (1.0) * (0.5) = 0.5$$

For the remaining 4.5 Acres:

From **Table 3**, Relative Flood Damage Reduction Factor for Open Space is 0.1.

From **Table 4**, Relative Runoff Factor for Open Space is .4 for the remaining 4.5 acres.

From **Table 5**, Drainage Factor for General Conveyance is 1.0.

$$[\text{Parcel EBU} - \text{Remaining Acreage}] = (0.1) * (0.4) * (1.0) * (4.5) = 0.18$$

$$[\text{Parcel EBU} - \text{Total}] = 0.5 + 0.18 = 0.68$$

$$[\text{Proposed Parcel Assessment}] = (0.68) * (\$372.64) = \$253.40$$

Summary of Assessments

Appendix B provides a detailed listing by Assessor's parcel number of the maximum assessments that will be voted on by the property owners for the proposed Assessment. The total proposed assessment for all parcels by land use category is summarized in **Table 6**.

Table 6 – Total Proposed Assessment by Land Use Category

Land Use Type	Relative Damage Reduction Factor	Relative Runoff Factor	Number of Parcels	Total Parcel Acreage	Drainage Factor	Equivalent Benefit Units	Total Proposed Assessment
Single-Family Residential							
Gravity Drained		1.0	791	123.06	0.25	31.21	\$19,836.64
General Conveyance	1.0	(Weighted if > 0.5 acre)	3727	1538.32	1.00	745.57	\$280,233.26
Internal Pumping	(Weighted if > 0.5 acre)		1453	199.80	1.50	301.27	\$112,848.76
Internal Detention & Pumping			4190	598.91	2.00	1194.51	\$450,622.24
Multi-Family Residential							
Gravity Drained			68	19.54	0.25	5.53	\$2,552.34
General Conveyance	1.0	1.0	287	273.50	1.00	291.17	\$108,540.88
Internal Pumping			33	10.27	1.50	38.95	\$14,763.66
Internal Detention & Pumping			15	25.22	2.00	72.64	\$27,070.28
Commercial							
Gravity Drained			24	61.20	0.25	37.34	\$13,920.64
General Conveyance	1.6	1.3	364	354.92	1.00	893.38	\$332,914.12
Internal Pumping			1	4	1.50	13.07	\$4,871.44
Internal Detention & Pumping			10	83.21	2.00	346.15	\$128,990.60
Industrial							
Gravity Drained			65	303.51	0.25	170.57	\$63,586.10
General Conveyance	1.6	1.3	299	668.51	1.00	1580.49	\$589,018.52
Internal Pumping			0	0	1.50	0.00	\$0.00
Internal Detention & Pumping			29	165.61	2.00	739.73	\$275,651.22
School							
Gravity Drained			1	0	0.25	1.64	\$609.94
General Conveyance	0.7	1	5	0.00	1.00	39.78	\$14,822.40
Internal Pumping			3	56	1.50	114.08	\$42,512.34
Internal Detention & Pumping			6	9.92	2.00	46.05	\$17,158.20

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Table 6 – Total Proposed Assessment by Land Use Category, continued

Land Use Type	Relative Damage Reduction Factor	Relative Runoff Factor	Number of Parcels	Total Parcel Acreage	Drainage Factor	Equivalent Benefit Units	Total Proposed Assessment
Open Space							
Gravity Drained			18	297.00	0.25	3.21	\$1,455.54
General Conveyance	0.1	0.4	149	204.47	1.00	15.84	\$7,989.76
Internal Pumping			7	0	1.50	0.93	\$392.42
Internal Detention & Pumping			30	11.75	2.00	2.95	\$1,396.14
Agricultural							
Gravity Drained			0	0.00	0.25	0.00	\$0.00
General Conveyance	0.1	0.4	80	1995.08	1.00	80.27	\$29,947.64
Internal Pumping			0	0	1.50	0.00	\$0.00
Internal Detention & Pumping			15	5.29	2.00	0.42	\$410.54
Vacant - Developed							
Gravity Drained			3	23	0.25	2.39	\$892.44
General Conveyance	0.25	1.3	22	11.36	1.00	10.98	\$4,130.72
Internal Pumping			3	0.46	1.50	0.32	\$133.56
Internal Detention & Pumping			4	76.84	2.00	54.22	\$20,202.94
Vacant - Undeveloped							
Gravity Drained			30	49.75	0.25	0.71	\$924.92
General Conveyance	0.1	0.4	320	679.07	1.00	28.55	\$15,220.18
Internal Pumping			5	2	1.50	0.21	\$132.64
Internal Detention & Pumping			140	426.17	2.00	38.39	\$16,225.58

Reference: 15200 RD 900 Benefit Allocation Model 2016 0413.xlsx

Special Considerations

Mobile Homes and Condominiums

Assessor parcels associated with a rental stall in a mobile home park or with an individual interest in a condominium unit are not included in this Assessment. Instead, the underlying property associated with the mobile home park or the condominium homeowner's association is included in the Assessment.

Large Properties with Multiple Land Uses

For large parcels with more than one land use, the factors used to calculate the total property benefits units are weighted by the proportional acreage of each land use.

Public Parcels

Consistent with the requirements of Proposition 218, all publicly owned parcels are assessed proportionately to the special drainage services benefit they receive from the district works. That is, public parcels are treated the same as privately owned parcels for assessment calculation purposes. To calculate assessments for these parcels, a land use category was assigned to each public parcel based on its current use.

Assessment Exclusions

All parcels within RD 900 that receive a special benefit from the drainage services provided are assessed. The only parcels excluded are those that are utilized to provide the drainage services, such as detention ponds and canals, or are located on the river-side of the levee and do not receive a benefit from the RD 900 Drainage Services.

Minimum Assessment Amount

Consistent with CA Water Code §51335.5, the minimum assessment will be \$25 to defray RD 900's cost of collecting each minimum assessment. All annual assessments calculated to be less than \$25 will be raised to the \$25 minimum.

Updating the Assessment Roll

Recalculating individual parcel assessments on an annual basis accommodates changes within the District over time. These changes can result from development activity such as recordation of subdivision maps, zoning changes, conditional use permits, and lot splits. Placement of a structure on an undeveloped parcel or other changes may trigger a recalculation of the assessment due if there is a change in land use category of the underlying property.

It is recognized that when compiling data for the thousands of parcels that constitute the Assessment, the data² used to derive individual parcel characteristics may not be accurate and may not precisely fit the intent of the District thus leading to errors and/or circumstances that result in inaccurate assessment calculations. Where such circumstance are discovered, either by the persons administering the assessment or by the owners of the properties affected, the General

² The Assessment Engineer has utilized data compiled from the Yolo County Assessor to determine the individual property characteristics used as the basis for apportioning special benefit. While the data from the Yolo County Assessor is assumed to be accurate, its primary purpose is for use by the Yolo County Assessor and is subject to the Assessor's standards for accuracy and frequency of update. As a result, the information may be inaccurate and not reflect the actual current property characteristics of every parcel.

Manager of RD 900 (or his or her designee) shall review such circumstances and determine if corrections or adjustments are appropriate. Any such corrections or adjustments are to be consistent with the concept, intent and parameters of the methodology for the Assessment as set forth within this Engineer's Report. Unless such proposed changes are appealed to the RD 900 Board of Trustees, they will be incorporated into the Assessment roll.

5. Assessment Administration

Implementation

Schedule for Collection

If property owners approve the proposed Assessment, RD 900 intends to commence collection of the Assessment in FY 2016/17 and continue every year thereafter. Beginning in FY 2016/17, the RD 900 Board of Trustees will establish the Assessment Rate each year which will not exceed the maximum approved by property owners plus an annual escalation as described below. The proposed Assessment will remain in effect until terminated by the RD 900 Board of Trustees.

Annual Escalation

In order to ensure that RD 900 is able to provide the needed services over time, it may be important to increase the Assessment Rate (as defined in **Section 4**) subject to the rising costs of labor and materials over time. The Assessment Engineer has determined that an appropriate escalation factor is reflective of construction labor and materials used for the services provided. Therefore, beginning in FY 2017/18, the maximum authorized Assessment Rate will be subject to an annual inflationary escalator pursuant to Government Code §53739 (b) based on the annual change in the Construction Cost Index (CCI) for the 20-city average with Base Year 1913 = 100, published by the Engineering News-Record, subject to a minimum of 0 percent and a maximum of 2.25% percent in any given year. The RD 900 Board may elect to levy the Assessment up to the maximum authorized Assessment Rate in any given year, based on an annual budget analysis.

Appeals of Assessments Levied to Property

Appeals Process

Any property owner who believes his or her property should be reclassified and the individual assessment adjusted may file a written appeal with the Chairman of the Board of Trustees of RD 900 (Chairman) or his or her designee. Any such appeal is limited to correction of an assessment during the then-current fiscal year and for future years.

All appeals must include a statement of reasons why the property should be reclassified, and may include supporting evidence. On the filing of any such appeal, the Chairman, or his or her designee, will promptly review the appeal and any information provided by the property owner and may investigate and assemble additional evidence necessary to evaluate the appeal. If the Chairman finds that the individual assessment should be modified, the appropriate changes will be made to the Assessment roll. If any such changes are approved after the Assessment roll has been filed with the County for collection, the Chairman is authorized to refund the property owner the amount of any approved reduction to the individual assessment for the then current fiscal year. In the event that an appeal is filed and a subsequent adjustment is resulting in a refund, refunds for any prior year's assessments paid before the appeal was filed will not be made.

If a landowner disputes the decision of the Chairman, a secondary appeal may be made to the RD 900 Board of Trustees, which will consider the matter at a regularly scheduled Board meeting. Any decision made by the Board of Trustees shall be final.

Impact of Appeals during Formation Period

The data being used by the Assessment Engineer to generate the Assessment Rate defined in **Section 4** comes from the Yolo County Assessor. While the data from the Yolo County Assessor is assumed to be accurate, its primary purpose is for use by the Yolo County Assessor and is subject to the Assessor's standards for accuracy and frequency of update. Because this data is not maintained by the Assessor in a form designed to support this special benefit assessment effort, the Assessment Engineer has worked to refine the data so it properly reflects the conditions present in the physical benefit area.

However, throughout the formation period, data errors and discrepancies with the data may surface and require modification of the assessment calculation for various parcels. Changes in the data for a particular parcel without a corresponding change in the Assessment Rate established by this report will, by definition, change the total amount of assessment levied and collected for that particular parcel. For example, if the data assumes the existence of a house and that house has since burned down and has not been reconstructed, once the database is corrected the rates will generate a smaller total assessment. On the other hand, if the data assumes an empty lot where a house has since been constructed, once the database is corrected the rates will generate a larger total assessment. Due to the database being constantly refined (either through internal review or an external appeal process), it is infeasible to fine-tune the rates between the Preliminary Engineer's Report and the Final Engineer's Report. In addition, because changes to the database will either increase or decrease the total amount assessed, it is presumed that these amounts will roughly offset each other. Therefore, although minor changes to the database will continue to be made during the formation period, the Assessment Rate proposed in this Report will not be fine-tuned, even though that will result in a total assessment which may be slightly less than or slightly more than the amount determined for the development of this report.

Future Land Use Changes

It is anticipated that changes in land use will occur in the District over time which will affect the level of drainage service provided by RD 900. To accommodate for these changes, individual property characteristics will be reviewed and updated as needed on an annual basis for determining the individual property assessments for the following fiscal year. The annual assessment would increase or decrease depending on the land use changes.

Example 1: Land Use Change Resulting in a Reduced Assessment.

A warehouse property is converted to a condominium complex. The following changes would be made to the assessment roll that would be effective the following year:

- Land Use: The Land Use Category would change from Industrial to Multi-Family Residential.
- Damage Reduction: The Damage Reduction Factor would decrease from 1.4 to 1.0 to reflect the land use change.
- Relative Runoff: The Relative Runoff Factor would decrease from 1.5 to 1.0 to reflect the land use change.

- **Drainage Factor:** The Drainage Factor would remain the same because there is no change in the drainage services required.

The resulting assessment for the condominium complex would be approximately 50% less than for the warehouse.

Example 2: New Subdivision Resulting in Increased Assessment

A large agricultural parcel is developed into a subdivision of single-family lots ready for home building. Furthermore, a pond is constructed in the middle of the subdivision as an aesthetic feature and for storm water detention. The following changes would be made to the assessment roll that would be effective the following year:

- **Parcel Listings:** The assessment roll would be updated to include the newly subdivided parcels and their respective acreage. Any retired APN's would be removed from the assessment roll.
- **Land Use:** The Land Use Category for the newly subdivided parcels would be defined as Vacant-Developed.
The Land Use Category for the parcel that includes the pond would be Drainage Works because the pond provides storm water detention.
- **Damage Reduction:** The Damage Reduction Factor for the vacant lots would increase from 0.1 to 0.25 to reflect the land use change.
- **Relative Runoff:** The Relative Runoff Factor for the lots would increase from 0.5 to 1.5 to reflect the land use.
- **Drainage Factor:** The Drainage Factor would remain 1.00 because the detention pond is to be maintained by the Homeowner's Association.

The annual assessment per acre for the vacant lots would increase by 7.5 times the prior assessment per acre for the agricultural lot. There would be no assessment for the acreage associated with public roads and the pond.

6. Conclusions

It is concluded that the proposed assessments do not exceed the reasonable cost of the proportional special benefit conferred on each property assessed.



Scott L. Brown, P.E.



Appendix A
Annual Budget

Appendix B

Proposed Assessment Roll

(Provided under Separate Cover)