LOS ANGELES COUNTY REGIONAL PARK AND OPEN SPACE DISTRICT

MEMORANDUM

DATE   September 14, 2017

TO   Measure A Steering Committee

FROM   Los Angeles County Regional Park and Open Space District (RPOSD)

SUBJECT   Use of Measure A Funds - Bonding

Measure A will potentially generate $96 million per year to fund parks, open space, beaches, rivers protection, and water conservation projects throughout Los Angeles County. This memorandum explores how bonding and other financing mechanisms could be employed to bring forward annual revenue flows to pay for capital improvements up front.

Because bonding is the most commonly used and least costly means to bring funding forward, the majority of this memo covers the bonding process. Table 1 at the end of this memo provides examples illustrating the amount of annual debt service and the proceeds from bond issuance for each study area.

The memo describes relevant provisions of Measure A and how it allocates funding based in part on information from the 2016 *Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment Final Report* (PNA). This memo assumes the reader's familiarity with the PNA.

1. MEASURE A BACKGROUND

1.1   Special Tax Revenue

Approved by Los Angeles County voters on November 8, 2016, Measure A established a special tax on improved parcels at a rate of $0.015 per square foot of structural improvements, excluding improvements for parking. As of the 2016 Assessor Tax Roll, there were 6,453,696,929 square feet of improvements subject to the special tax. Thus, the Measure A special tax would generate $96,805,453.

The funds generated by the tax will first become available for expenditures beginning with the fiscal year starting July 1, 2018. The first collection of the tax will be based on the 2017 Assessor Tax Roll, so the actual amount collected may be higher than $96.8 million estimated for this memo.

The measure allows, but does not require, the Board of Supervisors to adjust the rate of the tax by an amount up to the cumulative increases in the consumer price index from July 1, 2017 onward. Thus, in future years, the tax revenue generated by Measure A can be expected to increase from increases in improvement square footage and potential increases in the tax rate.

1.2 Annual Expenditures

1.2.1 Major Functional Groups

The funds generated by the special tax will be administered by the Regional Parks and Open Space District (RPOSD) to fund eligible project types described in the measure. The measure divides annual revenue into three major functional groups with specific percentage allocations:[1]

+ Projects and Programs [divided into five categories, see Section1.2.2], 77.8 percent
+ Maintenance and Service, 15 percent
+ Administration and Planning, 7.2 percent

The measure does not identify debt service as an eligible use of funds for the second and third functional groups. Therefore, this memorandum restricts its review and analysis to the first functional group, projects and programs.

1.2.2 Expenditure Schedule for Projects and Programs

For the functional group Projects and Programs, the measure establishes five allocation categories. The data in parentheses indicate the percentage of total special tax revenue allocated to each category[2]:

+ Category 1: Community Based Park Investment Program (35 percent)
+ Category 2: Safe Parks, Healthy Communities, Urban Greening Program (13 percent)
+ Category 3: Protecting Open Spaces, Beaches, Watershed Program (13 percent)
+ Category 4: Regional Recreational Facilities, Trail and Accessibility Program (13 percent)
+ Category 5: Youth and Veteran Job Training Placement Opportunities (3.8 percent)

For Categories 1 and 2, the revenues are intended to be distributed to each study area based on the per capita and structural improvement formula. Category 1 includes all study areas; Category 2 includes only those study areas identified as high need and very high need in the 2016 Countywide Parks Needs Assessment.

For Category 3, Measure A requires RPOSD to prioritize the funding allocation to projects with the greatest regional benefit and projects addressing the greatest regional need. For Category 4, Measure A requires RPOSD to prioritize projects that provide linkages among various regional recreational assets. For Category 5, RPOSD will allocate funding to organizations, with a priority on areas of high need and very high need.

The measure ensures an annual allocation of revenue to each study area for Categories 1 and 2, and this annual allocation could be used to secure bond financing. RPOSD expects funding in the remaining categories to be allocated through an annual competitive grant process. Nevertheless, Measure A clearly allows RPOSD to use funding from all five categories for debt service[3]. This memorandum focuses on the use of bonding for Categories 1 and 2, but the issues discussed herein would be applicable if RPOSD were to issue debt for projects in Categories 3, 4, or 5.

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[1] Measure A, Sections 6(e)(1)–(3)
[2] Measure A, Sections 5(b)(1)–(5)
[3] Measure A, Section 6(e)(1)

1.2.3   Per Capita and Structural Improvement Formula

Measure A establishes a per capita and structural improvement formula to determine the percentage of revenues allocated to each study area. Each study area's share of revenue is based on the study area's percentage share of the total population among study areas and its percentage share of total square footage of improvements (excluding parking) among study areas. The formula is weighted such that the allocation percentage equals two thirds the percentage share of population plus one third the percentage share of square footage of improvements ([Per Capita + Per Capita + Structural Improvements]/3).

Table 1 provides preliminary estimates of the ratios derived from the per capita and structural improvement formula. These estimates are intended only for the purpose of illustrating how bonding could be applied to Measure A funds. The actual ratios that RPOSD will use to allocate Measure A funds will be determined by RPOSD at a later a date.

For allocation Category 1, all study areas are included, so the total population is the total countywide population and the total structural improvements is the total countywide square footage of improvements. For allocation Category 2, only high and very high need study areas are included, so the total population is the total population across the high and very high need study areas and the total improvements is the total square footage of improvements across the high and very high need study areas.

Study Area 82, which consists of the area within the City of Alhambra provides an example. The study area's population, 84,903, is 0.84 percent of the countywide population, 10,069,287. The total non-parking improvements in the study area, 45,795,666 square feet, is 0.73 percent of the total countywide non-parking improvements, 6,305,293,386 square feet. Thus, study area 82 would receive (0.84 + 0.84 + 0.73) ÷ 3, or 0.80 percent, of the Category 1 allocation.

For Category 2, the study area's population is 1.60 percent of the total population across high-need and very high-need study areas, 5,294,919. The total non-parking improvements in the study area is 1.69 percent of the total non-parking improvements across the high-need and very high-need study areas, 2,713,174,198 square feet. Thus, study area 82 would receive (1.60 + 1.60 + 1.69) / 3, or 1.63 percent, of the Category 2 allocation.

2. FINANCING MECHANISMS GENERALLY

There are two ways that local governments can pay for projects and programs: pay-as-you-go funding and borrowing. An example of each is provided below.

A local government whose highest parks and recreation priority is repairing and upgrading existing facilities could use its annual Measure A Category 1 allocation to fund the repairs and upgrades. Depending on the extent of improvements, pay-as-you-go funding could take several years. However, all the revenue would go toward improvements, and none would go to interest payments. The local government also could supplement the Measure A revenue allocation with its general fund and with grants from other governmental agencies and nongovernmental organizations.

A local government whose highest parks and recreation priority is the construction of a new community center and public swimming pool would likely find that it is not practical to spread the construction out of the many years it would take to pay the cost with the annual Measure A allocation alone. The local government would most likely need to rely on borrowed money to pay for the improvement. The community would benefit early on from the new facility, but most, if not all, of the study area's Measure

A special tax allocation would be used for debt service. In addition, a third of the Measure A revenue would be used for interest payments and other financing costs.

2.1 Bonding

Issuing bonds is the most common way governmental agencies borrow money to finance expensive projects.

Borrowing, or debt financing, is accomplished by issuing bonds to pay for specific projects or services. A bond is a debt instrument bearing a stated rate of interest that matures on a certain date, at which time a fixed sum of money plus interest is payable to the bondholder. Bond issuance is often structured with a series of bonds, in which case a different bond matures in each year over 20- to 30-year period.

Municipal bonds are very attractive to certain investors because they carry a lower risk of default than similar investment-grade corporate bonds and because the interest earned by the investor is exempt from federal and state taxes. Consequently, investors will accept a lower interest rate on tax-exempt issues, which reflects their reduced tax burden. This lower rate reduces borrowing costs for state and local governments by approximately 25 percent.

Municipal securities consist of both short-term issues (often called notes, which typically mature in one year or less) and long-term issues (commonly known as bonds, which mature in more than one year). Short-term notes are used by an issuer to raise money for a variety of reasons, but are not applicable to the present discussion of forwarding Measure A special tax revenues.

In the case of Measure A, Los Angeles County would most likely issues on behalf of RPOSD, as with previous RPOSD bonds. The office of the Los Angeles County Treasure and Tax Collector (TTC) oversees bond sales for the County, and was consulted in the preparation of this memo.

2.1.1 Key Terms

Principal

The amount that the municipality is borrowing up front, also called the "par".

Maturity

Maturity is the date when the principal will be paid back. There are two kinds of bond maturities – term bonds mature on a single date, while serial bonds have maturities that are staggered over single years. Serial bonds are less risky for investors because they quickly begin getting principal back, and it's cheaper for issuers because they only pay interest on the principal they have left. Usually, the final maturity is between 21 and 26 years after the bond issue.

Coupon

The coupon is the amount of interest paid to bondholders on an annual or semiannual basis. The coupon can be fixed or variable.

Callability

If a bond has a call provision, it may be "called" or paid off earlier than the maturity date, at a slight premium to par.

Revenue Bond

Revenue bonds are paid back using revenue made from the project. For example, UC school bonds are paid back using tuition, multi-family housing bonds can be paid back using rent, and toll roads can be paid back using tolls. Bonding under Measure A would be revenue bonds because revenue from the special tax would be pledged for bond repayment.

Serial Bond

A series of bonds which mature in consecutive years or other intervals and are not subject to sinking fund provisions.

Term Bond

Bonds that come due in a single maturity. The issuer usually must make payments into a sinking fund to provide for redemption of the bonds before maturity or for payment at maturity.

2.1.2 Key People

There are several important roles and responsibilities in municipal bonding. For present purposes, it is likely that County staff would fill these roles, as indicated below.

Municipal Issuer

The agency raising money through bonds. For Measure A, the County of Los Angeles would be the municipal issuer. Measure A authorizes the RPOSD to issue bonds. It may appear to be a matter of semantics, the RPOSD would be a distinct and separate entity when issuing bonds, although the same Measure A special tax would be used to secure repayment of bonds whether issued by the County or by the RPOSD. Because it would take time for the RPOSD to establish a credit rating and be certified, it is likely that at least the initial bond issuance will be through the County of Los Angeles.

Municipal Advisor

Acts in the interest of and advises the municipal issuer, and serves as the liaison between the municipality, underwriters, and credit rating agency. Utilization of a municipal advisor became more common following the Dodd-Frank Wall Street Reform and Consumer Protection Act which requires issuers to appoint a municipal advisor or file to opt out.

Bond Counsel

Legal professionals who verify the legal details and ensure the issuance complies with all applicable laws and regulations. They also draft the core documentation. The County Counsel of Los Angeles County may provide some early assistance in the bonding process, the County would retain outside counsel to serve as the official bond counsel for bond issuance.

Underwriter

Publicly administers the issuance and distributes the bonds, and serve as the bridge between the buy and sell side of the bonds. The underwriter will decide the price, return, and time span of the bonds.

Brokers

Brokers are the step between the underwriter and the bond holders. The distribution and sale of bonds relies on a legacy system that requires tremendous overhead, and so most sales are made only to high net worth individuals and organizations that will buy large quantities of bonds.

Bond Holder

Can purchase bonds at time of issuance or from other bond holders at some time after issuance. The bond holder receives payments over time, composed of interest on the invested principal (or loan) and a return of the principal itself.

2.2   Certificates of Participation

Certificates of participation (COPs) can be used to finance capital projects. COPs are sold to investors in much the same was as tax-exempt municipal bonds, and the interest earned by investors is generally exempt from taxation. COPs are typically used when local governments want to avoid a public vote, as is required for the issuance of general obligation bonds.

Because Measure A authorizes RPOSD to issue bonds and to use the special tax revenue to repay the bonds, no further public vote is necessary. Thus, COPs would have no benefit over straight-forward municipal bonding for Measure A projects.

2.3   Short-Term Notes and Loans

Short-term notes, commercial paper, and loans are financing mechanisms that local governments use to bridge the gap between the immediate opportunity for a desired project and the length of time needed to secure long-term bond financing. Short-term financing is more expensive, i.e., a larger percentage of the special tax revenue will be spent on interest and financing costs, than bonding. It seems unlikely that RPOSD will need to use short-term financing for projects funded under Measure A.

One exception may be for land acquisition for new park development. Oftentimes, opportunities to purchase land at affordable prices are time-constrained decisions. This is especially true in many Los Angeles County communities that are mostly built out. RPOSD may want to explore opportunities for short-term financing as part of a strategy to facilitate land acquisition for new parks.

3. MEASURE A BONDING - KEY ISSUES

3.1   Identification of Projects

Projects to be funded with bonds will need to be specified prior to the issuance of bonds. Not every municipally-issued bond is exempt from taxes. As part of the issuance process, the bond counsel will certify that the projects being funded qualify the interest paid on the bonds to be exempt from taxes.

This does not mean that projects cannot change. However, RPOSD will need to have a policy on the level of project description necessary for proposed projects to be included in a bond issuance.

3.2 Timely Completion of Projects

RPOSD will need to establish a policy on the readiness of proposed projects to proceed to construction as a prerequisite for inclusion in a bond issuance because projects will need to be completed within three years to comply with requirements.

A key advantage for investors in municipal bonds is that the interest payments they receive are exempt from taxes. The interest rate paid on these bonds will be lower than the interest that the County may earn when it invests the bond proceeds until they are actually spent. The difference between the interests the County earns on the short-term investment of the bond proceeds and the interests the County pays on the bonds is known as arbitrage. For the interests paid on bonds to be exempt from taxes, federal regulations limit arbitrage. While the Los Angeles County Treasurer and Tax Collector (TTC) will bear some responsibility for complying with arbitrage requirements for invested bond proceeds, a key factor in compliance will be completing projects within three years.

3.3 Changing Allocation Ratios

Study areas that experience a decline in their percentage share of population and/or their percentage share of total non-parking improvement square footage could see a reduction in their percentage share of Category 1 and 2 funds. Hopefully, the annual increase in countywide improvement square footage will outpace the possible declines in study area percentages so that no study area will experience an absolute decrease in the annual dollar amount of allocations. However, it is theoretically possible that actual dollar allocations could decrease from year to year in some study areas, affecting their individual ability to pay their share of the debt service.

The overall Measure A special tax revenue will be available for RPOSD to make debt service payments, so this should not be an issue with bond issuance. The overall special tax revenue would only decline if there were a decrease in the total improved square footage across Los Angeles County.

However, it is possible that the allocation to a study area could decline below the level of debt service attributable to that study area. RPOSD may want to consider a policy that limits the percentage of an individual study area's allocation that can be used for debt service in order to avoid problems should that allocation decline.

4. EXAMPLES OF POTENTIAL BONDING PROCEEDS

Table 1 provides two examples to illustrate the amount of funding that could be brought forward through bonding against Measure A special tax revenue for allocation Categories 1 and 2. The first example generates the minimum bond issuance recommended by the TTC, $100 million. The second illustrates the bonding proceeds if the total anticipated Category 1 and 2 revenues were used for debt service.

The data in Table 1 assume that every study area participates in the bond issuance. In practice, not every study area will participate, and some study areas may only use a portion of their Category 1 and 2 allocation for debt service, reserving the remainder for pay-as-you-go projects. In order to issue the minimum $100 million in bonds, RPOSD will need a sufficient number of study areas with more than the minimum amount shown in Table 1 or a combination of such study areas and projects under Categories 3, 4, and 5.

Agencies wishing to participate in the bond issuance can expect to receive between 14.2 and 15.9 times their annual allocation, depending on the specifics of the bonding amount and maturity date (refer to Sections 4.1 and 4.2 for additional information). For example, a city with an annual allocation of $100,000 could expect to receive between $1.42 million and $1.59 million if they participated in the bond issuance. RPOSD would then be responsible for making annual payments on these funds until the bond reaches maturity (20 to 25 years, depending on the specifics of the bond).

Finally, it is important to note that even for study areas that use their entire Category 1 and 2 revenue stream for bonding, additional revenue may be available for pay-as-you-go projects in subsequent years if the countywide total improvement square footage increases and, hence, the Measure A special tax revenue increases.

Table 2 provides bonding samples provided by the TTC. The data in Table 1 are based on the data in Table 2. The maturity for the bonds will be based on the actual projects that are proposed and may be as long as 30 years. The data provided by TTC and the two examples use 20- and 25-year maturities. The data provided by TTC use a base case reflecting current interest rates and cases with interest rates increased by 100 basis points to reflect what market conditions might be when bonds are issued in the future. The two examples are based on the current interest rates plus 100 basis points.

4.1 Minimum Bonding Amount

The TTC has indicated that the most efficient use of bonding is a minimum of $100 million in proceeds. A $100,761,002.85 serial bond issuance with maturity over 20 years would generate $100 million in proceeds. The largest annual debt service payment would be $7,040,625.00, out of the total Category 1 and 2 allocation of $45,537,286. The proceeds equal 14.2 times the maximum annual debt service, and the debt service represents 15.5 percent of the annual Category 1 and 2 allocation.

Table 1 provides the estimated largest annual debt service and the estimated bond proceeds for each study area, based on $100 million bond proceeds, a 20-year maturity, and true interest cost of 3.65 percent.

4.2 Maximum Bonding Amount

The Category 1 and 2 allocation preliminarily estimated for the first year of collection of the Measure A special tax is $45,537,286. The second example in Table 2 estimates the bond proceeds if the entire Category 1 and 2 allocation were pledged to repay the debt.

A $729,781,236.17 serial bond issuance with maturity over 25 years would generate $726,180,000.00 in bond proceeds. The largest annual debt service would be $45,537,286.00. The proceeds equal 15.9 times the maximum annual debt service, and the debt service equals 100 percent of the annual Category 1 and 2 allocation. For future planning, RPOSD may use a multiplier lower than 15.9 to limit the maximum amount of Category 1 and 2 revenue that can be used for debt services, as discussed in Section 3.3.

Table 1 provides the estimated largest annual debt service and the estimated bond proceeds for each study areas based on $726 million bond proceeds, 25-year maturity, and true interest cost of 3.93 percent.

Table 1: Category 1 and 2 Allocation Ratios and Example Bond Proceeds and Debt Service, By Study Area

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
Agoura Hills	Very Low	0.2%	0.0%	81,293	12,569	178,519	81,293	1,296,371
Alhambra	High	0.8%	1.6%	468,266	72,400	1,028,313	468,266	7,467,401
Arcadia	Low	0.6%	0.0%	214,229	33,122	470,447	214,229	3,416,295
Artesia	High	0.2%	0.3%	91,126	14,089	200,113	91,126	1,453,184
Avalon / UI Channel Islands North	Very Low	0.0%	0.0%	14,549	2,249	31,950	14,549	232,016
Azusa	Moderate	0.4%	0.0%	148,172	22,909	325,386	148,172	2,362,890
Baldwin Park	Very High	0.7%	1.3%	382,706	59,171	840,423	382,706	6,102,982
Bell	Very High	0.3%	0.6%	181,022	27,988	397,524	181,022	2,886,741
Bell Gardens	Very High	0.3%	0.7%	200,165	30,948	439,562	200,165	3,192,010
Bellflower	Very High	0.7%	1.4%	392,675	60,712	862,314	392,675	6,261,955
Beverly Hills	Moderate	0.5%	0.0%	170,411	26,348	374,222	170,411	2,717,527
Bradbury / UI Bradbury	Very Low	0.0%	0.0%	5,756	890	12,640	5,756	91,791
Burbank	Low	1.2%	0.0%	388,437	60,057	853,009	388,437	6,194,379
Calabasas	Very Low	0.3%	0.0%	96,403	14,905	211,702	96,403	1,537,335
Carson	High	1.1%	2.2%	627,689	97,048	1,378,407	627,689	10,009,713
Cerritos / UI Cerritos	Low	0.6%	0.0%	195,664	30,252	429,679	195,664	3,120,246
Claremont / UI Claremont	Low	0.4%	0.0%	135,090	20,887	296,657	135,090	2,154,265
Commerce	Moderate	0.4%	0.0%	117,263	18,130	257,510	117,263	1,869,986
Compton	High	0.9%	1.8%	526,882	81,463	1,157,035	526,882	8,402,158
Covina	Moderate	0.5%	0.0%	162,057	25,056	355,879	162,057	2,584,320
Cudahy	Very High	0.2%	0.4%	112,336	17,369	246,690	112,336	1,791,412
Culver City	Moderate	0.5%	0.0%	154,370	23,868	338,998	154,370	2,461,733
Diamond Bar	Low	0.6%	0.0%	193,763	29,958	425,504	193,763	3,089,925
Downey	High	1.1%	2.2%	625,862	96,766	1,374,395	625,862	9,980,580
Duarte	Low	0.2%	0.0%	70,073	10,834	153,880	70,073	1,117,446
El Monte	Very High	1.0%	2.0%	582,303	90,031	1,278,739	582,303	9,285,947

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
El Segundo	Low	0.3%	0.0%	101,779	15,736	223,506	101,779	1,623,057
Gardena	High	0.6%	1.2%	354,993	54,886	779,566	354,993	5,661,054
Glendale - Northside	Low	1.1%	0.0%	375,954	58,127	825,595	375,954	5,995,306
Glendale - Southside	Very High	0.8%	1.7%	486,200	75,173	1,067,697	486,200	7,753,402
Glendora / UI Glendora	Low	0.5%	0.0%	175,926	27,200	386,335	175,926	2,805,484
Hawaiian Gardens	Moderate	0.1%	0.0%	39,960	6,178	87,752	39,960	637,237
Hawthorne	Very High	0.8%	1.6%	471,857	72,955	1,036,198	471,857	7,524,666
Hermosa Beach	Moderate	0.2%	0.0%	70,271	10,865	154,316	70,271	1,120,612
Hidden Hills	Not Participating	0.0%	0.0%	9,976	1,542	21,907	9,976	159,087
Huntington Park	Very High	0.5%	1.0%	294,474	45,529	646,666	294,474	4,695,962
Industry	Very Low	0.4%	0.0%	127,836	19,765	280,727	127,836	2,038,586
Inglewood	Very High	1.0%	2.1%	599,346	92,666	1,316,166	599,346	9,557,736
Irwindale	Very Low	0.1%	0.0%	27,752	4,291	60,943	27,752	442,560
LA Arleta - Pacoima	High	0.9%	1.8%	510,950	78,999	1,122,048	510,950	8,148,086
LA Baldwin Hills - Leimert - Hyde Park	High	0.8%	1.6%	454,494	70,270	998,070	454,494	7,247,788
LA Bel Air - Beverly Crest/ UN Hollywood Hills	Very Low	0.3%	0.0%	102,404	15,833	224,880	102,404	1,633,036
LA Boyle Heights	Very High	0.8%	1.6%	451,021	69,733	990,444	451,021	7,192,408
LA Brentwood - Pacific Palisades	Moderate	0.7%	0.0%	248,374	38,402	545,430	248,374	3,960,806
LA Canada Flintridge	Very Low	0.2%	0.0%	81,304	12,571	178,543	81,304	1,296,543
LA Canoga Park - Winnetka	Very High	0.9%	1.7%	494,977	76,529	1,086,970	494,977	7,893,360
LA Central City	Very High	0.8%	1.8%	498,927	77,140	1,095,644	498,927	7,956,351
LA Central City North	High	0.3%	0.6%	171,080	26,451	375,691	171,080	2,728,194
LA Chatsworth - Porter Ranch / UI Chatsworth	Low	1.2%	0.0%	389,340	60,197	854,992	389,340	6,208,781
LA Encino - Tarzana	Moderate	0.9%	0.0%	287,551	44,459	631,463	287,551	4,585,557
LA Exposition Park - University Park - Vermont Sq	Very High	1.5%	3.0%	858,224	132,692	1,884,662	858,224	13,686,036
LA Granada Hills - Knollwood	Moderate	0.6%	0.0%	203,993	31,540	447,970	203,993	3,253,070
LA Harbor Gateway	High	0.4%	0.9%	261,654	40,455	574,593	261,654	4,172,578

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
LA Hollywood - North	Moderate	1.1%	0.0%	361,479	55,889	793,808	361,479	5,764,478
LA Hollywood - South	Very High	1.0%	2.1%	596,885	92,286	1,310,760	596,885	9,518,479
LA Mission Hills - Panorama City - North Hills	Very High	1.3%	2.6%	755,630	116,830	1,659,366	755,630	12,049,981
LA North Hollywood - Valley Village	Very High	1.3%	2.7%	781,118	120,770	1,715,336	781,118	12,456,430
LA Northeast Los Angeles - North	Moderate	1.3%	0.0%	447,806	69,236	983,384	447,806	7,141,138
LA Northeast Los Angeles - South	Moderate	0.8%	0.0%	279,030	43,141	612,750	279,030	4,449,670
LA Northridge	High	0.7%	1.4%	401,770	62,119	882,289	401,770	6,407,003
LA Palms - Mar Vista - Del Rey	Very High	1.1%	2.2%	637,179	98,516	1,399,247	637,179	10,161,051
LA Reseda - West Van Nuys	High	1.0%	2.1%	610,699	94,422	1,341,096	610,699	9,738,768
LA San Pedro / Port of Los Angeles / UI La Rambla	Moderate	0.8%	0.0%	259,770	40,164	570,455	259,770	4,142,531
LA Sherman Oaks - Studio City / UI Universal City	Low	1.0%	0.0%	318,468	49,239	699,357	318,468	5,078,588
LA Silver Lake - Echo Park - Elysian Valley	Moderate	0.7%	0.0%	220,766	34,133	484,803	220,766	3,520,543
LA South Los Angeles	Very High	0.9%	1.9%	540,135	83,512	1,186,138	540,135	8,613,500
LA Southeast Los Angeles	Very High	1.3%	2.5%	721,137	111,497	1,583,620	721,137	11,499,930
LA Southeast Los Angeles - North	Very High	1.2%	2.4%	692,453	107,062	1,520,629	692,453	11,042,506
LA Sun Valley - La Tuna Canyon	High	0.9%	1.8%	514,252	79,510	1,129,298	514,252	8,200,740
LA Sunland-Tujunga-Lake View Terr-Shadow Hills	Low	0.6%	0.0%	198,859	30,746	436,695	198,859	3,171,195
LA Sylmar	Moderate	0.7%	0.0%	244,260	37,766	536,396	244,260	3,895,201
LA Valley Glen - North Sherman Oaks	High	0.8%	1.6%	456,091	70,517	1,001,577	456,091	7,273,249
LA Van Nuys - North Sherman Oaks	Very High	0.8%	1.6%	463,426	71,651	1,017,684	463,426	7,390,220
LA Venice	Very High	0.4%	0.8%	230,271	35,603	505,677	230,271	3,672,122
LA West Adams	Very High	0.9%	1.7%	504,018	77,927	1,106,825	504,018	8,037,541
LA West Hills - Woodland Hills / UI Canoga Park	Moderate	1.1%	0.0%	355,340	54,940	780,329	355,340	5,666,590
LA West Los Angeles	High	1.0%	2.0%	572,906	88,578	1,258,103	572,906	9,136,095
LA Westchester - Playa del Rey / LAX	High	0.7%	1.4%	408,550	63,167	897,177	408,550	6,515,119
LA Westlake	Very High	1.0%	2.0%	585,058	90,457	1,284,788	585,058	9,329,876
LA Westwood / UI Sawtelle VA Center	Very High	0.6%	1.1%	327,194	50,588	718,519	327,194	5,217,739

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
LA Wilmington - Harbor City / LA Port of LA	Moderate	0.7%	0.0%	234,339	36,232	514,609	234,339	3,736,989
LA Wilshire - Koreatown	Very High	1.5%	3.1%	889,752	137,567	1,953,898	889,752	14,188,817
LA Wilshire - West	High	1.4%	2.9%	812,826	125,673	1,784,967	812,826	12,962,075
La Habra Heights	Very Low	0.1%	0.0%	21,799	3,370	47,872	21,799	347,635
La Mirada	Moderate	0.5%	0.0%	175,867	27,191	386,205	175,867	2,804,545
La Puente	High	0.3%	0.7%	196,298	30,350	431,070	196,298	3,130,345
La Verne / UI La Verne/ UI Claremont	Very Low	0.4%	0.0%	118,117	18,262	259,385	118,117	1,883,598
Lakewood / UI Lakewood	Low	0.8%	0.0%	252,697	39,070	554,922	252,697	4,029,736
Lancaster - Eastside	Moderate	0.6%	0.0%	206,468	31,923	453,405	206,468	3,292,534
Lancaster - Westside	Moderate	1.0%	0.0%	320,581	49,566	703,997	320,581	5,112,289
Lawndale	Very High	0.3%	0.6%	164,810	25,482	361,923	164,810	2,628,214
Lomita	Moderate	0.2%	0.0%	64,521	9,976	141,688	64,521	1,028,911
Long Beach Central	Low	0.4%	0.0%	118,075	18,256	259,294	118,075	1,882,940
Long Beach East / UI Long Beach	Low	0.8%	0.0%	262,941	40,654	577,420	262,941	4,193,106
Long Beach North	High	0.8%	1.6%	456,476	70,577	1,002,422	456,476	7,279,389
Long Beach South	High	1.8%	3.6%	1,025,154	158,501	2,251,240	1,025,154	16,348,055
Long Beach West	Very High	0.7%	1.4%	401,297	62,045	881,249	401,297	6,399,452
Lynwood/ UI Lynwood	High	0.6%	1.2%	342,470	52,950	752,064	342,470	5,461,339
Malibu	Very Low	0.2%	0.0%	57,909	8,954	127,169	57,909	923,477
Manhattan Beach	Low	0.4%	0.0%	140,005	21,647	307,452	140,005	2,232,653
Maywood	Very High	0.2%	0.4%	126,652	19,582	278,129	126,652	2,019,718
Monrovia	Low	0.4%	0.0%	126,866	19,615	278,599	126,866	2,023,129
Montebello	Moderate	0.6%	0.0%	207,141	32,027	454,882	207,141	3,303,264
Monterey Park	Moderate	0.6%	0.0%	199,616	30,863	438,357	199,616	3,183,261
Norwalk	High	0.9%	1.9%	535,264	82,758	1,175,441	535,264	8,535,818
Palmdale - Eastside / UI South Antelope Valley	Low	0.9%	0.0%	300,766	46,502	660,484	300,766	4,796,302
Palmdale - Westside	Low	0.6%	0.0%	210,061	32,478	461,294	210,061	3,349,822

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
Palos Verdes Estates	Very Low	0.2%	0.0%	57,936	8,958	127,228	57,936	923,906
Paramount	Very High	0.5%	1.0%	290,336	44,890	637,579	290,336	4,629,968
Pasadena - Eastside / UI Kinneloa Mesa	Moderate	0.6%	0.0%	207,092	32,019	454,774	207,092	3,302,477
Pasadena - Westside	Moderate	0.9%	0.0%	311,173	48,111	683,336	311,173	4,962,250
Pico Rivera	Low	0.6%	0.0%	197,192	30,488	433,035	197,192	3,144,613
Pomona - Northside	Moderate	0.8%	0.0%	263,595	40,755	578,856	263,595	4,203,533
Pomona - Southside	Moderate	0.6%	0.0%	209,468	32,386	459,993	209,468	3,340,374
Rancho Palos Verdes	Very Low	0.5%	0.0%	160,444	24,807	352,336	160,444	2,558,593
Redondo Beach	Moderate	0.7%	0.0%	241,571	37,350	530,490	241,571	3,852,313
Rolling Hills	Not Participating	0.0%	0.0%	9,148	1,414	20,089	9,148	145,886
Rolling Hills Estates / UI Westfield	Very Low	0.1%	0.0%	42,148	6,517	92,557	42,148	672,128
Rosemead	Moderate	0.5%	0.0%	161,428	24,959	354,496	161,428	2,574,276
San Dimas / UI San Dimas	Very Low	0.4%	0.0%	124,012	19,174	272,330	124,012	1,977,606
San Fernando	High	0.2%	0.5%	129,535	20,028	284,460	129,535	2,065,690
San Gabriel	Moderate	0.4%	0.0%	126,789	19,603	278,428	126,789	2,021,890
San Marino	Very Low	0.2%	0.0%	54,263	8,390	119,163	54,263	865,336
Santa Clarita - North	Moderate	1.3%	0.0%	424,878	65,691	933,034	424,878	6,775,505
Santa Clarita - South	Moderate	1.0%	0.0%	324,638	50,193	712,907	324,638	5,176,987
Santa Fe Springs	Low	0.4%	0.0%	144,969	22,414	318,352	144,969	2,311,812
Santa Monica	Moderate	1.1%	0.0%	352,177	54,451	773,381	352,177	5,616,139
Sierra Madre	Very Low	0.1%	0.0%	39,551	6,115	86,854	39,551	630,719
Signal Hill	Very Low	0.1%	0.0%	45,670	7,061	100,290	45,670	728,289
South El Monte/ UI El Monte/ UI Whittier Narrows	Low	0.2%	0.0%	81,852	12,655	179,747	81,852	1,305,288
South Gate	Very High	0.8%	1.7%	481,402	74,431	1,057,161	481,402	7,676,889
South Pasadena	Low	0.3%	0.0%	87,950	13,598	193,139	87,950	1,402,533
Temple City	High	0.3%	0.7%	200,770	31,042	440,892	200,770	3,201,671
Torrance - North	High	0.7%	1.5%	422,858	65,379	928,597	422,858	6,743,289

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
Torrance - South	Low	0.9%	0.0%	293,749	45,417	645,074	293,749	4,684,398
UI Acton/ UI South Antelope Valley	Very Low	0.1%	0.0%	40,681	6,290	89,335	40,681	648,730
UI Agua Dulce-Angeles NF-Canyon Country	Low	0.1%	0.0%	32,374	5,005	71,094	32,374	516,273
UI Altadena	Low	0.4%	0.0%	138,774	21,456	304,747	138,774	2,213,012
UI Angeles National Forest	Low	0.0%	0.0%	7,849	1,214	17,236	7,849	125,167
UI Azusa	Moderate	0.2%	0.0%	50,256	7,770	110,362	50,256	801,424
UI Bassett-West Puente Valley	Very High	0.2%	0.4%	115,050	17,788	252,651	115,050	1,834,699
UI Castaic	Moderate	0.4%	0.0%	128,239	19,827	281,613	128,239	2,045,015
UI Charter Oak Islands	High	0.2%	0.3%	99,706	15,416	218,956	99,706	1,590,011
UI Compton	Low	0.1%	0.0%	37,736	5,834	82,868	37,736	601,772
UI Covina Islands	Moderate	0.0%	0.0%	15,350	2,373	33,709	15,350	244,785
UI Covina-San Dimas	Low	0.0%	0.0%	15,914	2,460	34,947	15,914	253,777
UI Del Aire	High	0.1%	0.2%	54,098	8,364	118,800	54,098	862,702
UI East Los Angeles - Northwest	Very High	0.6%	1.1%	320,562	49,563	703,954	320,562	5,111,975
UI East Los Angeles - Southeast	Very High	0.5%	0.9%	269,495	41,667	591,812	269,495	4,297,617
UI East Rancho Dominguez	Very High	0.1%	0.2%	70,394	10,884	154,585	70,394	1,122,562
UI East San Gabriel/ UI Arcadia	Very High	0.2%	0.4%	127,556	19,722	280,114	127,556	2,034,133
UI Florence-Firestone	Very High	0.5%	1.0%	297,109	45,937	652,452	297,109	4,737,976
UI Hacienda Heights-Whittier	Low	0.6%	0.0%	193,497	29,917	424,919	193,497	3,085,679
UI Hawthorne/ UI Alondra Park	Very High	0.1%	0.2%	55,177	8,531	121,168	55,177	879,900
UI La Crescenta - Montrose	Very Low	0.2%	0.0%	64,032	9,900	140,615	64,032	1,021,120
UI Ladera Heights / View Park - Windsor Hills	Very Low	0.2%	0.0%	65,702	10,158	144,282	65,702	1,047,747
UI Lake LA\ UI Pearblossom\UI Liano\UI Valyermo	Very Low	0.1%	0.0%	45,440	7,026	99,787	45,440	724,630
UI Lennox	Very High	0.2%	0.4%	104,307	16,127	229,057	104,307	1,663,369
UI Leona Valley/ UI Lake Hughes	Low	0.0%	0.0%	12,163	1,880	26,709	12,163	193,955
UI Littlerock	Very Low	0.1%	0.0%	27,804	4,299	61,059	27,804	443,396
UI Malibu	Low	0.1%	0.0%	20,398	3,154	44,794	20,398	325,283

Table 1 continued

Study Area Name	Need Category	Category 1 Allocation Ratio (Estimate)	Category 2 Allocation Ratio (Estimate)	Categories 1 & 2 Allocation (Estimate)	$100M | 20 years | 3.65%		$726 M | 25 years | 3.93%	
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
UI Marina del Rey	Moderate	0.1%	0.0%	17,235	2,665	37,847	17,235	274,840
UI Monrovia	Low	0.1%	0.0%	47,213	7,300	103,679	47,213	752,898
UI Northeast Antelope Valley	Very Low	0.1%	0.0%	27,244	4,212	59,828	27,244	434,461
UI Northwest Antelope Valley	Low	0.1%	0.0%	17,616	2,724	38,684	17,616	280,915
UI Pellissier Village-Avocado Heights	Very Low	0.1%	0.0%	49,032	7,581	107,675	49,032	781,912
UI Quartz Hill-Lancaster	Moderate	0.2%	0.0%	60,514	9,356	132,890	60,514	965,019
UI Rowland Heights	Moderate	0.5%	0.0%	171,043	26,445	375,612	171,043	2,727,617
UI San Jose Hills	Moderate	0.2%	0.0%	54,801	8,473	120,343	54,801	873,907
UI San Pasqual/ UI East Pasadena	Very Low	0.1%	0.0%	29,748	4,599	65,326	29,748	474,386
UI Santa Monica Mountains/ UI Triunfo Canyon	Very Low	0.1%	0.0%	27,082	4,187	59,472	27,082	431,874
UI South Whittier/ UI East La Mirada	Moderate	0.6%	0.0%	193,305	29,887	424,499	193,305	3,082,624
UI Stevenson/Newhall Ranch	Very Low	0.2%	0.0%	74,681	11,547	163,999	74,681	1,190,928
UI Sunrise Village-S. San Gabriel-Whittier Narrows	Low	0.1%	0.0%	27,129	4,195	59,576	27,129	432,627
UI Topanga Canyon / Topanga	Very Low	0.1%	0.0%	26,722	4,132	58,682	26,722	426,135
UI Valinda	Moderate	0.2%	0.0%	64,178	9,923	140,934	64,178	1,023,437
UI Walnut Park	Very High	0.1%	0.3%	74,060	11,451	162,636	74,060	1,181,027
UI West Athens-Westmont	Very High	0.3%	0.7%	200,916	31,064	441,212	200,916	3,203,996
UI West Carson	High	0.2%	0.4%	125,788	19,448	276,231	125,788	2,005,936
UI West Rancho Dominguez	Very Low	0.1%	0.0%	32,773	5,067	71,969	32,773	522,622
UI West Whittier - Los Nietos	Low	0.2%	0.0%	74,652	11,542	163,935	74,652	1,190,466
UI Willowbrook	High	0.4%	0.7%	206,093	31,865	452,581	206,093	3,286,553
Vernon / UI Vernon	Very Low	0.3%	0.0%	85,100	13,158	186,881	85,100	1,357,092
Walnut	Very Low	0.3%	0.0%	105,252	16,273	231,134	105,252	1,678,452
West Covina	Moderate	1.0%	0.0%	340,068	52,579	746,790	340,068	5,423,037
West Hollywood	Very High	0.4%	0.9%	241,692	37,368	530,755	241,692	3,854,239
Westlake Village	Very Low	0.1%	0.0%	42,464	6,565	93,252	42,464	677,174
Whittier	Low	0.8%	0.0%	282,131	43,621	619,560	282,131	4,499,119

Table 1 continued

| Study Area Name | Need Category | Category 1 Allocation Ratio (Estimate) | Category 2 Allocation Ratio (Estimate) | Categories 1 & 2 Allocation (Estimate) | $100M \| 20 years \| 3.65% | | $726 M \| 25 years \| 3.93% | |
					Maximum Annual Debt Service	Bond Proceeds	Maximum Annual Debt Service	Bond Proceeds
TOTAL		100.0%	100.0%	45,537,286	7,040,625	100,000,000	45,537,286	726,180,000

Table 2: Bonding Scenarios Analysis

General Assumptions:
+ + Issue Date: 7/3/2017
+ Credit Rating: AAA
+ Reserve Fund: None
+ UW Discount: $4/bond
+ Rates as of: 6/28/2017

Group 1: $100 million deposit				
	A. 20 years, Base Case	B. 25 years, Base Case	C. 20 years, + 100bps	D. 25 years, + 100bps
Sources				
Par	$ 82,830,000.00	$ 83,245,000.00	$ 88,995,000.00	$ 89,720,000.00
Premium	17,901,358.15	17,489,193.70	11,766,002.85	11,042,009.85
Total	$ 100,731,358.15	$ 100,734,193.70	$ 100,761,002.85	$ 100,762,009.85
Uses				
Project Fund	$ 100,000,000.00	$ 100,000,000.00	$ 100,000,000.00	$ 100,000,000.00
COI + Add'l Proceeds	400,038.15	401,213.70	405,022.85	403,129.85
UW Discount	331,320.00	332,980.00	355,980.00	358,880.00
Total	$ 100,731,358.15	$ 100,734,193.70	$ 100,761,002.85	$ 100,762,009.85
True Interest Cost	2.884750%	3.251610%	3.652970%	3.932230%
Total D/S	$ 134,103,616.67	$148,922,188.89	$144,080,966.67	$160,506,327.78
Maximum Annual D/S	$ 6,553,625.00	$ 5,835,250.00	$ 7,040,625.00	$ 6,289,875.00
Other Assumptions:		$400,000 COI		

Table 2 **continued**

Group 2: $200 million deposit				
	A. 20 years, Base Case	B. 25 years, Base Case	C. 20 years, + 100bps	D. 25 years, + 100bps
Sources				
Par	$165,415,000.00	$166,240,000.00	$177,720,000.00	$179,165,000.00
Premium	35,749,293.05	34,926,398.60	23,495,868.70	22,051,820.35
Total	$ 201,164,293.05	$ 201,166,398.60	$ 201,215,868.70	$ 201,216,820.35
Uses				
Project Fund	$200,000,000.00	$200,000,000.00	$200,000,000.00	$200,000,000.00
COI + Add'l Proceeds	502,633.05	501,438.60	504,988.70	500,160.35
UW Discount	661,660.00	664,960.00	710,880.00	716,660.00
Total	$ 201,164,293.05	$ 201,166,398.60	$ 201,215,868.70	$ 201,216,820.35
True Interest Cost	2.884730%	3.251630%	3.653050%	3.932210%
Total D/S	$267,808,488.89	$297,402,072.22	$287,730,633.33	$320,527,794.44
Maximum Annual D/S	$ 13,084,250.00	$ 11,651,250.00	$ 14,058,125.00	$ 12,556,750.00
Other Assumptions:		$500,000 COI		

Table 2 **continued**

Group 2: $300 million deposit				
	A. 20 years, Base Case	B. 25 years, Base Case	C. 20 years, + 100bps	D. 25 years, + 100bps
Sources				
Par	$247,995,000.00	$249,235,000.00	$266,445,000.00	$268,615,000.00
Premium	53,597,029.95	52,363,041.45	35,225,450.65	33,060,715.90
Total	$ 301,592,029.95	$ 301,598,041.45	$ 301,670,450.65	$ 301,675,715.90
Uses				
Project Fund	$300,000,000.00	$300,000,000.00	$300,000,000.00	$300,000,000.00
COI + Add'l Proceeds	600,049.95	601,101.45	604,670.65	601,255.90
UW Discount	991,980.00	996,940.00	1,065,780.00	1,074,460.00
Total	$ 301,592,029.95	$ 301,598,041.45	$ 301,670,450.65	$ 301,675,715.90
True Interest Cost	2.884680%	3.251610%	3.653040%	3.932190%
Total D/S	$401,503,550.00	$445,874,205.56	$431,374,050.00	$480,545,072.22
Maximum Annual D/S	$ 19,616,250.00	$ 17,466,000.00	$ 21,075,750.00	$ 18,824,125.00
Other Assumptions:		$600,000 COI		