Report of the Orinda Infrastructure Committee

Presented to the City Council

July 11, 2006

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Acknowledgements

The City of Orinda is facing a significant challenge in terms of its deteriorating public roads, storm drains and water lines that provide fire protection. Roads that were constructed 50 – 70 years ago according to standards that would be inadequate today are badly in need of reconstruction. The underground portions of the city's drainage system that traverses the public right-of-way are failing, causing flooding and accelerating the deterioration of the roadway network. A major failure of a large drainage pipe under a major arterial, such as Moraga Way, could cause a significant and extended disruption to traffic flow. In addition, the Moraga-Orinda Fire District (MOFD) has determined that the water system is inadequate in many areas of the city and cannot provide enough water for firefighting, thus it is in need of substantial improvement.

At its meeting of October 19, 2004, the City Council appointed a citizen's committee to tap the knowledge of residents with expertise in this area to meet the challenges faced by the community. The newly formed Infrastructure Committee was given the following objectives:

- Review and recommend a work plan for development of an infrastructure improvement and financing plan;
- Review and provide direction on a schedule for developing such a plan;
- Develop a plan for ongoing public outreach;
- Review a list of proposed infrastructure improvements;
- Review and recommend a construction schedule for implementing improvements;
- Review and recommend a financing plan, including a possible plan requiring voter approval;
- Review and recommend interagency (city and fire district) strategies for coordinating and implementing financing plans (e.g., separate or combined financing plan);
- Serve as an advisory body to the Orinda City Council and MOFD Board in finalizing plans for improving the community's infrastructure.

The initial charge to the committee anticipated that their work could be completed by June of 2005. The committee's research and the production of the following report took a full year longer than was initially anticipated. This report represents many hours of hard work on the part of the committee members working with city council members Bill Judge, Stephen Glazer, Laura Abrams, Victoria Smith, and Amy Worth, and with the representatives of the Moraga Orinda Fire District Board, especially Chief Jim Johnston, John Wyro, Pete Wilson and Gene Gottfried. City Manager Janet Keeter and her staff, Janice Carey, Danny Fay, Mary Alice Keeler, Mark Lowery, Kathleen Polkinghorn, and Radha Wood provided staff support for the committee's efforts. All meetings of the Infrastructure Committee were open to the public. Two residents, Clyde Vaughn and Vince Maiorana, distinguished themselves by attending nearly every meeting and thus contributed to the Committee's work.

The City of Orinda would like to thank the following Infrastructure Committee members who so generously donated their time and expertise and who compiled a technical strategic plan for the reconstruction and maintenance of the city's infrastructure.

Infrastructure Committee

Art Haigh, Chair
Dennis Fay, Roads Subcommittee Chair
Bob Mills, Drains Subcommittee Chair
John Wyro, Fire Flow (Water lines) Subcommittee Chair
Alex Evans, Finance Subcommittee Chair
Tomi Van de Brooke and Elisabeth Jewel,
Outreach & Communications Subcommittee Chairs
Bob McCleary, Roads Subcommittee
Rob Kobal, Roads and Drains Subcommittees
Roger James, Drains Subcommittee
Alan Hall, Drains Subcommittee
Bob Andrews, Drains Subcommittee
Michael Emmons, Committee Member
Mimi Liem, Committee Member

Summary of Key Findings and Recommendations

I. The City's Aging Infrastructure Problem

A. Public Roads and Storm Drains

1. 92 miles of public roads and 20 miles of storm drains were inherited in poor condition in 1985 upon incorporation. Orinda is a young city with an old infrastructure.
2. Upon incorporation, infrastructure maintenance became the responsibility of the city, NOT the county or the state.
3. Orinda's hilly terrain and soil conditions make maintenance difficult and costly.
4. Storm drains, which are 50% Corrugated Metal Pipe (CMP), are older than their expected average life of 30 years.
5. Two-thirds of Orinda's roads are in poor or very poor condition; average pavement condition index is 46, one of the lowest in Bay Area.

B. Water Lines for Fire Protection

1. Water lines for fire protection are owned and maintained by EBMUD. Measure N, which failed in 2002 by close margin (62% voted yes but 67% required), highlighted 49 critical projects with inadequate fire flow to fight fires (47 projects are still pending).
2. EBMUD's standing policy is to replace water lines when they rupture or fail.
3. EBMUD's response to Orinda's problem with aging water lines would be similar to other communities in EDMUD's service area like Rockridge, Castro Valley and Kensington and must be resolved consistent with its "Rockridge Model," which allows EBMUD to advance the funds necessary to accelerate priority water pipe repairs identified by the community, provided that the voters have approved a financing mechanism for repayment, and to charge the municipality a below-market interest rate on such funds advanced. With the proposed program, EBMUD will contribute approximately $1.2 million.
4. MOFD has agreed to contribute approximately $3.4 million over 20 years for water pipe replacement with proceeds from an existing approved fire flow tax if the city proceeds with an accelerated replacement plan.

C. Why Repair Now?

1. Cost: It costs five times more to fix roads in poor condition than to maintain roads in good condition and individuals must face the risk of higher car maintenance costs, flooding, street failure or possible fire.
2. Property Values
3. Community Pride
4. Safety

II. Orinda's Financing Challenge

A. The city spends roughly 1/3rd of its combined operating and capital budgets on infrastructure ($3.3 million average per year) with approximately $900,000 a year from city revenues used for its "Pavement Management Program" which makes critical road repairs.

B. The city's financial resources are insufficient to meet infrastructure capital needs – small sales tax base, heavy dependency on property taxes of which the city receives a small share.

C. Recent capital projects (library, street and downtown beautification) were accomplished with significant private and state/federal matching funds. The city hall was financed by Certificates of Participation (COP), a mechanism whereby private investors purchase shares guaranteed by

the city's future annual lease payments. No infrastructure money has been diverted to any other improvement projects within the city.

D. The city hired financial advisor to prepare a five-year financial projection. Stone & Youngberg examined all existing and potential city revenues, including the option of drawing on city's reserves. They determined that over the next five years the city can increase its spending on infrastructure maintenance by $500,000 per year and still maintain a prudent reserve of $6m.

E. In order to address the magnitude of the infrastructure problem, Stone & Youngberg concluded that the city needs another source of revenue. The recommended option is a General Obligation Bond, which must be approved by 2/3rd of the voters.

III. Voter Opinions on the Problem and Possible Financing

A. A telephone poll of 400 randomly-selected Orinda voters was conducted by Fairbank, Maslin, Maullin & Associates in January 2006.

B. There is strong resident recognition of problem. In response to an open-ended question asking voters to identify the most important problem facing Orinda, 40% responded that potholes and road maintenance are the single most important Orinda issues; second was education at 7%. All other issues mentioned were in single digits. Later, in response to a list of items, 62% selected streets & roads as an extremely/very serious problem.

C. Six out of ten voters support a $75 million General Obligation Bond but this falls below 2/3rd supermajority required in California.

D. The level of support for GO Bond increases to supermajority levels once voters have more information.

E. The most popular alternative to a GO Bond, the benefit assessment measure, did worse than the GO bond – 46% support a benefit assessment measure that includes fire flow, 41% supported it without fire flow. (A benefit assessment district would tax all property owners equally and would be approved by a simple majority based on assessed value of property through a mail-in ballot.)

IV. Recommended Plan of Action for Infrastructure Improvements

A. To fix everything would cost approximately $150 million.

B. Downsize scope of repairs to reduce overall bond size and cost to average Orinda residents. The GO Bond should cost average Orinda homeowner about $160 annually ($35 per $100,000 Assessed Value). New and future homeowners will pay a higher tax rate, and significant contributions will come from developments like Montanera and Pine Grove.

C. Use bond proceeds to repair the roads that everyone uses by focusing on roads with an average of 500 daily trips or more, repair the drains most in danger of failing and those under roads being repaired, and replace the critical water lines identified by Measure N in 2002.

D. In order to meet the objective of limiting the cost of the annual property tax increase to $160 for the average Orinda homeowner, the City should:

1. Adopt the recommendation of Stone & Youngberg to increase the City's contribution to annual infrastructure maintenance by $500,000 per year during the first five years of the program;
2. Accept MOFD's offer to finance a portion of the water pipe replacement cost using a tax previously approved for that purpose, levied in the Orinda Fire Protection Zone;
3. Request from EBMUD the advances and favorable financing of the Rockridge Model.

4. These actions will result in a needed GO Bond amount of $59.1 million as follows:

Roads – 500 ADT	$ 44.3 m
Critical Storm Drains	7.9 m
Critical Water Pipes	14.0 m
Total Estimated Cost	$ 66.2 m
Less City Contribution	-2.5 m
Less MOFD Contribution	-3.4 m
Less EBMUD Contribution	-1.2 m
Bond Measure Amount	**$ 59.1 million**

E. All Orinda public roads will be better maintained with this proposal. The proposal will free up the city's pavement management funds for repairs to residential streets not included in the bond proposal. The roads we all travel on (i.e., streets over 500 daily trips) will be maintained to a higher standard.

F. The needed road and drain improvements are located throughout all Orinda neighborhoods so improvements will significantly improve everyone's daily travel.

G. The GO bond proceeds will help the city attract more state and federal matching funds for repairs of arterial roads, allowing bond proceeds to be used for additional residential street and storm drain repairs as well as attract more matching funds for sidewalks and bicycle lanes that provide access to schools.

H. If the state successfully approves an Infrastructure Bond Measure this fall, the new state funds will support project improvements at the state and county (not the local) level. However, the state measure may provide approximately $500,000 in additional one-time funds for Orinda to use for local roads, and may possibly offer limited matching grant opportunities.

I. The city should appoint a citizen's oversight committee to oversee the administration of the bond proceeds and advise about the prioritization of projects in accordance with the parameters outlined to the voters

I. Background on Public Infrastructure

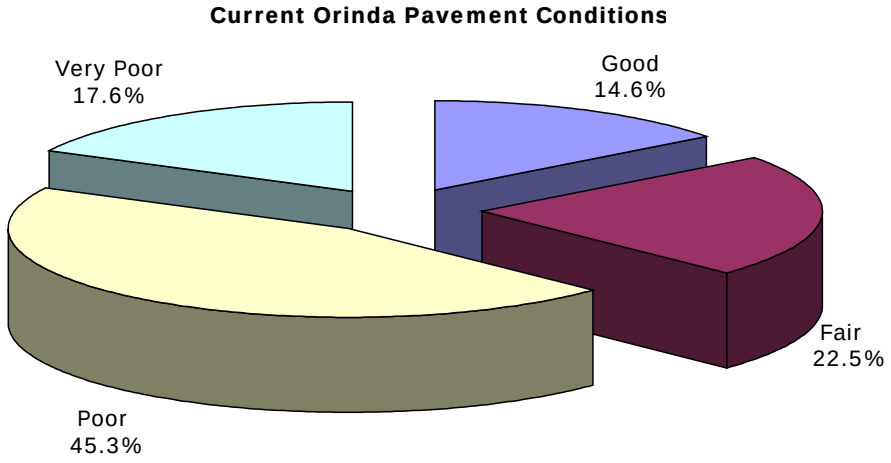
A. Public Roads

The City of Orinda has approximately 92 miles of paved public roads – 31 miles of arterials and collectors and 61 miles of residential streets. Appendix A to the Roads Subcommittee Report provides a definition of an arterial, a collector, and residential street, and provides lists and maps of the arterials and collectors in Orinda. These roads were built between 1930 and 1960, and were inherited from the county twenty years ago when the city incorporated. There are also 27 miles of private roads in Orinda that are not maintained by the city and thus not included in this report.

During 2005, Nichols Consulting Engineers surveyed all arterials and collectors while city staff surveyed public residential streets. All survey data was entered into the city's Pavement Management Program database. An analysis of pavement maintenance and rehabilitation needs was then performed by Nichols Consulting Engineers, and the cost of needed repairs were estimated. The Nichols report is also included in Roads Appendix B.

The following summarizes the information and findings for public roads in Orinda:

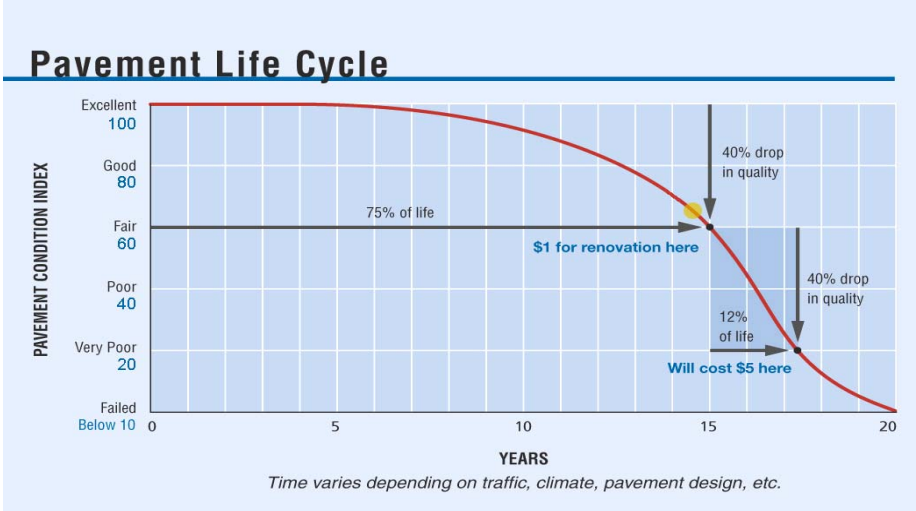
1. The condition of roads is measured by something called the pavement condition index, or PCI. A newly constructed road has a PCI of 100, while a failed road would have a PCI of 10 or less.
2. 63% of the roads in Orinda are in Poor or Very Poor condition, with a PCI of 49 or below.



Source: Nichols Consulting Engineers

3. The average PCI for the City of Orinda is 46, while the average PCI for all cities in Contra Costa County is 68.
4. The average PCI in Orinda is expected to decline to 41 over the next five years at the current level of the road maintenance budget. Orinda's hilly terrain with expansive soils contributes to the deterioration.

5. The poor condition of Orinda roads is widespread throughout the community and not limited to one section of the city.
6. The average service life of a pavement varies according to several factors including terrain, soil conditions, use, weather, volume of truck traffic, and other factors.
7. By the time a roadway reaches a PCI of 60, it has already reached 75% of its life with a 40% drop in quality. When a roadway reaches a PCI of 60, rapid deterioration begins to take place.



Source: Metropolitan Transportation Commission

8. For every one dollar it takes to treat a roadway with a PCI of 60 or higher, it will cost approximately $5 dollars to fix the same roadway once it has deteriorated to the point where major rehabilitation or reconstruction is necessary.
9. The estimated 20-year cost of repairing all publicly owned roads in Orinda is $71.9 million; the 25-year cost is $82.9 million; the 30-year cost is $92.7 million. Approximately 20% of this cost is for preventive maintenance. The remaining 80% is for rehabilitation.
10. The estimated 20-year cost of repairing only roads with an estimated traffic volume of 500 daily vehicle trips is $44.3 million.

B. Public Storm Drains

The City of Orinda has approximately 21 miles of storm drains that convey local runoff or creek flow under roads or across private property in dedicated easements. The runoff is discharged to Orinda's creeks that flow out of the city to the north and south. Approximately 11.5 miles of these drains are corrugated metal pipe (CMP) or steel pipe. CMP was a common type of pipe used when Orinda began to grow following World War II. CMP and steel pipe rusts and corrodes and has a useful life of 20 to 30 years, and some of these pipes are more than twice that age.

When a CMP or steel pipe corrodes, it can completely fail at the bottom of the pipe. Joints in drainage pipes can also separate because of soil creep, which is common on the steep hillsides of Orinda. In either case, water washes away the soil under the pipe. When a drainage pipe under a road fails, the road begins to settle, damaging the road surface. This sometimes causes sinkholes to develop, which disrupts traffic and creates a public safety hazard. Sinkholes also can cause water mains or sanitary sewers to fail, which would further exacerbate and accelerate the problem.

The remaining 9.5 miles of storm drains consist mainly of reinforced concrete pipe (RCP) and vitrified clay pipe with some plastic pipe at newer installations. These types of pipe have much longer useful lives because they do not corrode as readily as CMP or steel pipe.

Much of the older storm drain system, particularly the CMP and steel pipes, is in need of repair or replacement to prevent the problems described above and to maintain the full capacity of the system. In addition, some pipes are undersized and could contribute to localized flooding during major storms. It is important to coordinate storm drain repairs and improvements to water pipes with repair of Orinda's streets and roads to minimize the need to tear up newly repaved roads.

Recommended Program for Public Storm Drain Repair:

Storm drains requiring repair fall into the following three categories:

Category 1 includes deteriorated CMP and steel pipes under public roads that have or are about to fail and collapse. All of these pipes need to be repaired (e.g., by lining the pipes using trenchless technology) or replaced.

Category 2 includes drains 24 inch diameter and larger that are undersized and could contribute to flooding or property damage during major storms. The capacities of these drains should be increased to convey flow from a storm with a recurrence interval of 10 years (i.e., has a 10 % chance of occurring each year) when Orinda is built out according to its General Plan. This can be done by replacing the existing drain with a new, larger diameter pipe or by paralleling the existing pipe with another pipe. However, brush and debris often obstruct drain inlets and could cause localized flooding that would not be corrected by up-sizing drain pipes, but could be corrected only by maintaining an aggressive inlet clearing policy.

Category 3 includes pipes under public roads that should be inspected to determine if they should be repaired or replaced as part of a road repair contract. These pipes may be in poor condition, but are not in imminent danger of collapsing. Therefore, not all the Category 3 drains would need to be replaced. Replacing these pipes during road repair would prevent the need to cut open a road to replace a pipe soon after the road had been repaved. It is assumed that 50 % of CMP and steel drains and 1 % of RCP drains would have to be replaced.

The public drain conditions have been mapped, and it was found that the needs are fairly evenly distributed citywide, so repairs would not disproportionately benefit one area of Orinda over another.

The Issue of Private Drains:

There are numerous drain pipes that are privately owned. A drain pipe is private if it is: (1) not within the right-of-way of a public street; or (2) not within a dedicated easement accepted by the county (before incorporation) or the city. Drain pipes under driveways are private drains even if they are in the rights-of-way of public streets. The city cannot repair or maintain private drains because it would be inappropriate to spend public funds on repair of private facilities. Also, it would be extremely expensive to do so. In addition, where adequate dedicated easements do not exist, access space and clearances often are insufficient to allow work on the drains with the necessary equipment.

The city may want to consider the feasibility of including the replacement of private storm drains adjacent to public street or storm drain projects if private property owners bear the cost of improvements on private property.

C. Water Lines for Fire Protection

The October 1991 firestorm that occurred in the Oakland/Berkeley hills was a harbinger of the potential for a similar fire that could occur in Orinda. In 1999 the Moraga Orinda Fire District and EBMUD completed a study with a goal of bringing Orinda's waterlines in compliance with a fire flow rate of 2,250 gallons per minute (gpm) from three adjacent hydrants. However, the total cost of such improvements was estimated to be over $50 million, an amount judged too high to be supported by the community. In 1999, the Orinda Fire Safety Committee (OFSC) established a methodology to prioritize needed improvements so they could recommend the most cost-effective way of proceeding. The result of the prioritization process was to produce an Orinda Fire Flow Plan that called for improvements that would directly or indirectly benefit about half of all Orinda parcels at a reduced cost of $12.7 million. Voters narrowly defeated the package of improvements in 2002. The revised cost of the remaining projects in today's dollars is approximately $14.8 million. However, since 1999, EBMUD has upgraded some of the water lines that were included in the list, thus lowering the total estimated cost for upgrades to an estimated $14 million. EBMUD also will participate in the city improvement effort by contributing approximately $1.2 million, based on a percent of the cost of the local effort. Their involvement is based on the precedent set by the "Rockridge Model", i.e., by what EBMUD contributed to improvements in Rockridge after the Oakland Hills fire. The contribution will be in addition to their normal annual repair work completed within Orinda.

The Orinda Fire Protection Zone encompasses approximately 85% of the parcels in the city, while the Moraga Fire Protection zone covers the southeast portion of the city in the Ivy and Donald Drive areas of Orinda. While the physical improvements would occur and primarily benefit parcels in the Orinda Fire Protection Zone, the overall community of Orinda will benefit from a higher level of fire protection provided within and to the city at large.

D. City Financing of Public Infrastructure

Since Orinda incorporated in 1985, the city has made steady and prudent progress toward addressing some of the inequities of its pre-incorporation history including higher development standards, dramatically improved public library services, improved public safety, downtown street improvements, and is in the process of providing city offices to house employees on a previously unusable lot.

Over the past twenty years, street maintenance has been a priority for the city. Roughly one-third of the city's expenditures have supported the Department of Public Works and of that, about $900,000 per year regularly has been allocated for the Pavement Management Program. The city has made road and drain improvements a top priority and has identified every available source of funds available for annual maintenance including sales tax revenue from Measure C, gas tax funds, garbage franchise fees, and matching state and federal grants when available.

Although the Infrastructure Committee has prioritized and coordinated work plans to reduce the scope of recommended improvements from nearly $150 million needed for all improvements to approximately $60 million dollars for the most important and critical improvements, given a total annual city budget of approximately $9 million, an independent financial advisor has made it clear that the city does not have the money to tackle such an imposing problem.

The city currently has a reserve of $8.2 million. The Finance Subcommittee recommends reducing that amount to a prudent amount of $6 million over the next five years with approximately an additional $500,000 per year contributed to infrastructure improvements and maintenance.

E. Summary of Community Outreach Efforts

The subcommittee on Communications & Outreach supported the efforts of the Infrastructure Committee to reach and involve the community at large. Once the various subcommittees had completed a year of research and fact-finding about road, storm drain and fire protection conditions in Orinda and were prepared to present their preliminary findings, the Infrastructure Committee arranged for a series of public meetings to present the information to the community and receive public input. Four public meetings were held in November and December of 2005 at various neighborhood locations in Orinda to share preliminary findings with residents and receive their input. About three hundred residents attended the public meetings. They posed questions and voiced their priorities and concerns. As an outcome of the meetings, the Infrastructure Committee published a question and answer brochure that summarized the content of the meetings for those who had been unable to attend. The brochure was mailed to every Orinda household.

In addition, at the request of the Infrastructure Committee, the City Council authorized the city to hire a polling firm to conduct a telephone survey of voters to test the tax tolerance for a possible ballot measure. In January of 2006, Fairbank, Maslin, Maullin & Associates conducted a telephone survey of 400 randomly selected Orinda voters likely to vote in the November 2006 election. An overwhelming number of the residents polled by the firm responded to an open-

ended question with the answer that the most pressing problem facing Orinda is the condition of Orinda's streets and roads.

Summary of Poll Results:

- Support for a bond measure is below the supermajority required, though support strengthened after voters were given additional information.

- Voters are more likely to support a ballot measure that includes fire protection; enhanced safety for school children, bicyclists, and pedestrians; fiscal accountability; and a thorough description of the planned improvements.

- The polling firm recommended that the cost per household in annual taxes should be in the neighborhood of $150 per year.

- The city should appoint a citizen's oversight committee to oversee the administration of the bond proceeds and advise about the prioritization of projects in accordance with the parameters outlined to the voters.

The Communications & Outreach Subcommittee will continue to support the Infrastructure Committee's efforts to involve the public in reaching a consensus about this important issue.

II. Recommended Plan of Action for and Financing of Infrastructure Improvements

A. Public Roads

Given the magnitude of the problem and the unknown potential of attempting to raise additional funding, the city has some difficult choices to make. The city could choose to maintain and rehabilitate all public streets and roads or some subset of roads, such as arterials and collectors, or only residential streets. The available options have opportunities and problems. For example, repairing only arterials and collectors leaves residential streets subject to the current level of maintenance, which may not be acceptable to city residents. Repairing only residential streets leaves the major streets subject to the current level of maintenance. On the other hand, the cost of repairing all roads may be beyond the willingness of residents to provide additional funding for through taxes. The option most resembling the results of the community meetings is to repair roads with 500 daily vehicle trips or more.

The following recommendations are based on the findings contained in the Roads Subcommittee Report and on input from the community meetings held in November and December 2005.

1. At a minimum, roads with 500 daily vehicle trips or more should be repaired (see Figure 1, next page). The 20-year cost of this minimum recommended repair is $44.3 million; the 30-year cost is $59.9 million. Approximately 80% of this cost is for rehabilitation. The remaining 20% is for preventive maintenance.

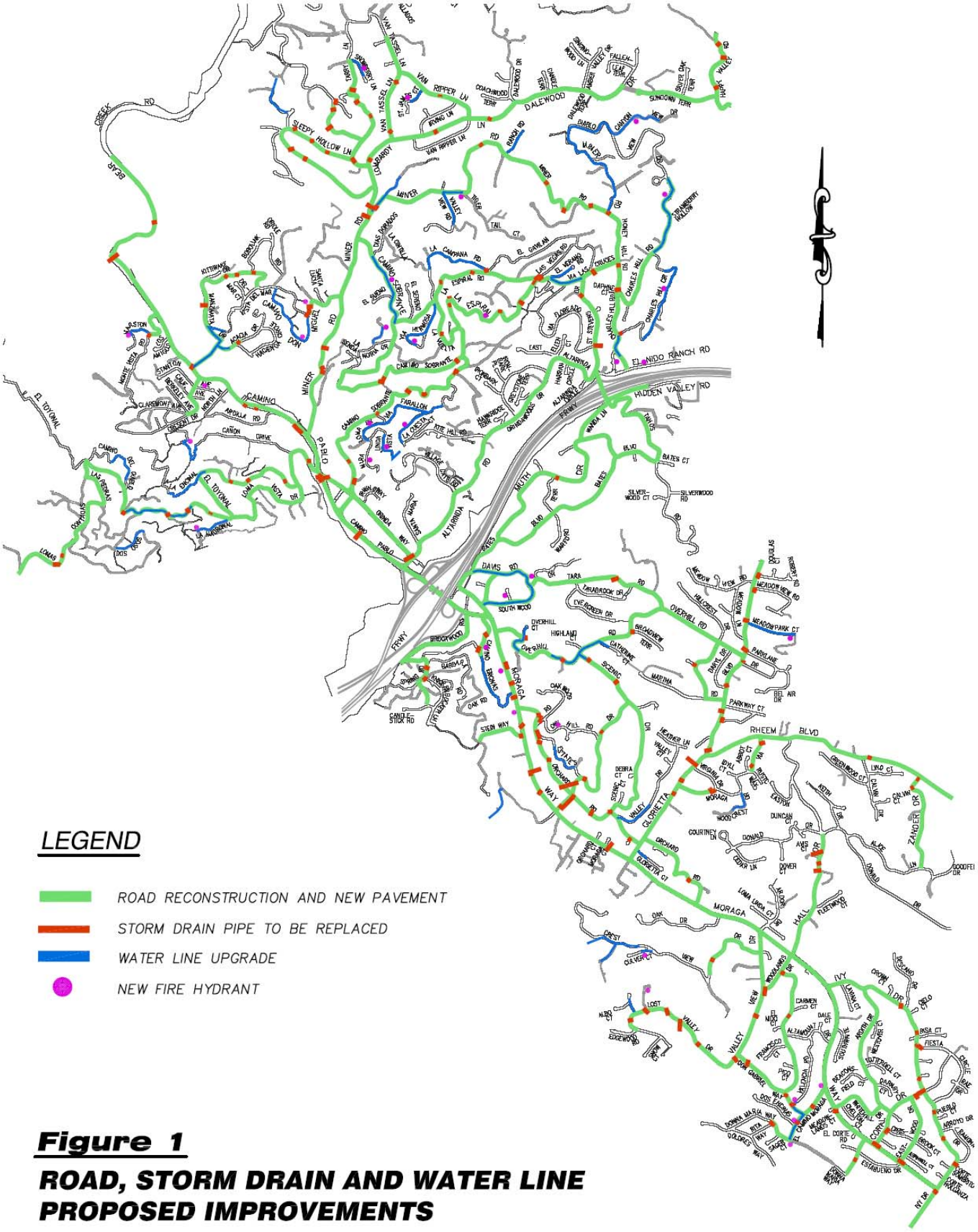


Figure 1

ROAD, STORM DRAIN AND WATER LINE PROPOSED IMPROVEMENTS

2. New fund source(s) are needed to cover this repair, such as a general tax levy (e.g., GO Bond).
3. The new funding source(s) should fully cover the cost of repairing and maintaining the minimum group of roads similar to those tentatively identified in Figure 1.
4. Existing city resources now devoted to road repair should be redirected to improve the residential roads *not covered* by the new revenue source(s), thus providing for the continued maintenance of all public roads.
5. When federal or state grants can be secured for the purpose, road projects should add sidewalks and bicycle lanes that provide access to schools, where feasible and cost-effective.
6. The city should consider a construction impact fee for road repair. While this will likely not generate a large sum annually, revenue from the fee can be used to supplement the new and existing fund sources.
7. The city should immediately implement a crack-sealing program to lengthen the life of recently resurfaced streets.
8. Since roads, like other capital assets, require ongoing maintenance and repair, at the end of the 20 or 30-year program, new funding will be needed for the next 20 or 30-year period. However, this future funding requirement will be comparatively less than now needed because roads will be in better condition in the future than they are today, if the program proposed in this report is implemented.
9. Local funds generated by the City of Orinda from new sources will likely attract state and federal grants for repair of the arterials. Collector and residential streets in Orinda are considered to be local roads and thus will likely not compete favorably for outside grants. The provisions of a new fund source should allow funds freed up by state and federal grants to be used on streets with fewer than 500 average daily trips, and to provide a match for federal and state grants for sidewalks and bicycle lanes that provide access to schools.

B. Public Storm Drains

The costs to repair or replace all the drains in all three categories, assuming construction is spread evenly over nine years, are as follows:

Category 1:	$ 6,703,000
Category 2:	$ 1,130,000
Category 3:	$ 4,559,000
Total:	$12,392,000

We recognize that a bond or parcel tax measure large enough to repair or replace all these drains, in addition to repairing roads and water pipelines, would be difficult to pass in an election. Therefore, we recommend that storm drain repairs financed through a bond or parcel tax measure should be tailored to the road repairs. Assuming the Infrastructure Committee recommends repairing roads with 500 vehicle trips or more per day, we recommended that all Category 1 and 3 drains that are under those streets, and the Category 2 drains, be repaired using proceeds from the bond or parcel tax measure. The cost to repair these drains is approximately $7.9 million.

Deteriorated drains 24 inches or less in diameter generally would be replaced with high-density polyethelene (HDPE) pipe, while drains larger than 24 inches would be replaced with reinforced concrete pipe. These new drain pipes would have useful lives of 50 years. The remaining Category 1 drains should be repaired using city revenues not associated with the proceeds from the bond or parcel tax measure.

Trench-less technologies (e.g., inserting HDPE liners into existing pipes) should be considered where feasible and cost-effective to reduce the community disruption that occurs when open trenches are excavated.

The city should continue to fund a routine maintenance program to keep the drainage system in good working order. The city currently spends approximately $315,000 per year on storm drain maintenance. This budget should be increased annually to keep up with cost of living increases.

In some cases, public drains discharge directly or indirectly into private drains. Although it is not legally required to do so, the city should consider redirecting flows in public drainage facilities from entering private drains where feasible and cost effective.

C. Water Lines for Fire Protection

At their meeting of April 10, 2006, the Moraga Orinda Fire Board agreed to join the city as a partner in water pipe improvements by designating one cent of their previously approved fire flow tax, which would amount to about $89,000 per year beginning with the 2006-07 budget, with increases scheduled in future years, to pipe replacement. On June 26th the MOFD Board took action to adopt the 2006-07 preliminary budget with the fire flow tax so designated. The tax will be collected only in the Orinda Fire Protection Zone of the District.

The MOFD Board expects that the tax revenue, together with other cost savings they project in future years, will allow them to contribute about $3.4 million dollars toward the cost of water pipe improvements. Their action reduces the amount needed for water pipe improvements provided by a bond measure to $9.4 million.

D. Financing Needed Improvements

Recognizing that a two-thirds vote is needed to approve a General Obligation Bond, the Infrastructure Committee believes the GO Bond is the best approach for the City of Orinda as it is the most cost-effective way to raise funds that will be appropriately restricted to be used only for infrastructure improvements throughout the community.

In order to arrive at the correct bond amount, the Finance subcommittee has considered many factors, including the following:

- The estimated cost of the coordinated improvement projects;
- The need to deliver visible improvements in a reasonable period of time and most improvements within nine or ten years;
- The community's tolerance for the reconstruction process, the effect on traffic circulation, and the city's capacity for managing needed road improvements;

- The voters' tolerance for an overall bond amount and the requisite property tax increase as determined by the telephone poll.

The Finance Subcommittee's conclusion is that the Infrastructure Committee should recommend the issuance of a General Obligation Bond of $59.1 million. With the $2.5 million in additional dollars from the city over the next five years, and the contributions from MOFD and EBMUD, the $59.1 million Bond Measure will provide funding for $44.3 million for Roads, $7.9 million for Drains and $9.4 million for Water Pipe for Fire Protection. The city's additional contribution will come from spending down the city's reserves from a current level of approximately $8.2 million to a minimum level of $6 million. The city's independent financial analyst is developing the bond issuance schedule and the cost of the bond to the average homeowner will be about $160 per year.

The city's additional contribution of $2.5 million will raise the amount the city spends annually for infrastructure repairs from approximately $900,000 to $1.4 million a year over the next five years. The city's previously scheduled contribution of $900,000 per year can be made available for the annual maintenance of streets not targeted for improvement by the Bond measure.

If the city accepts the Infrastructure Committee's recommendations, the city's most traveled streets will be replaced or improved by the Bond measure, and the remainder of the streets will be maintained using the city's increased annual maintenance funds to a better pavement condition level than currently is possible.

Figures cited in the Finance Subcommittee's report to the IC committee, and used throughout this report to predict bond costs and the cost to property owners, are based on the best, most reliable information available at the time the reports were generated. Several factors can influence final costs including the number and amount of bond issuances, the timing of the issuances, the rate of growth of assessed value, interest rates, etc. Final figures will be stated in the Resolution of Public Interest and Necessity, the ordinance calling for a municipal bond election, and included in official information provided to the voters.

III. APPENDICES

Appendix B

Nichols Consulting Engineers Pavement Management Program

NICHOLS CONSULTING ENGINEERS, CHTD.
Engineering and Environmental Services
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Richmond, CA 94804
(510) 215-3620

55.40.20

PTAP Round 6
City of Orinda

Pavement Management Program
Executive Summary

Submitted to:

Metropolitan Transportation Commission
Joseph P Bort MetroCenter
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City of Orinda
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Orinda, CA 94563

June 2005

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Background

Nichols Consulting Engineers, Chtd. (NCE) was selected by the Metropolitan Transportation Commission (MTC) to update the City of Orinda's pavement management database under the Pavement Management Technical Assistance Program (P-TAP) Round 6. NCE surveyed all the arterial and collector streets which are approximately 30.8 centerline miles or 128 pavement sections. The City surveyed all the residential streets, approximately 61.4 centerline miles or 310 pavement sections. All survey data were entered into the City's Pavement Management Program database. In addition, the historical records of the pavement maintenance and rehabilitation in the last four years were also updated in the database.

A pavement maintenance and rehabilitation (M&R) budget needs analysis was performed. Four budgetary scenarios were also analyzed. This report presents an executive summary for the City.

Purpose

The purpose of this report is to assist policy makers in utilizing the results of the Metropolitan Transportation Commission (MTC) Pavement Management Program (PMP). Specifically, this report links the PMP recommended repair program costs to the City of Orinda's projected budget to improve overall maintenance and rehabilitation strategies. This report assesses the adequacy of current and projected revenues to meet the maintenance needs recommended by the PMP program. It also maximizes the return from expenditures by:

(1) implementing a multi-year road rehabilitation and maintenance program;
(2) developing a preventative maintenance program; and
(3) selecting the most cost effective repairs.

This report assists the City with identifying maintenance priorities specific to its needs. This study examines the overall condition of the road network and highlights options for improving the current network-level pavement condition index (PCI). These options are developed by conducting "what-if" analyses using the City's pavement management system database. By varying the budget amounts available for pavement maintenance and repair, we can show how different funding strategies can impact the City's roads over the next five years.

Pavement Network and Current Condition

The City of Orinda is responsible for the repair and maintenance of approximately 92.1 centerline miles of pavements. The majority of the street network is residential streets. **The replacement value of the City's streets is approximately $106 million.**

The pavement condition index, or PCI, is a measurement of pavement grade or condition and ranges from 0 to 100. A newly constructed road would have a PCI of 100, while a failed road would have a PCI of 10 or less. The average PCI for the City in 2005 is 46.

Table 1 gives a summary of the pavement network and its conditions by functional classes. As shown in Table 1, the arterial streets in the City are in better condition than the collector and residential streets.

Table 1. Pavement Network and Condition Summary for the City of Orinda

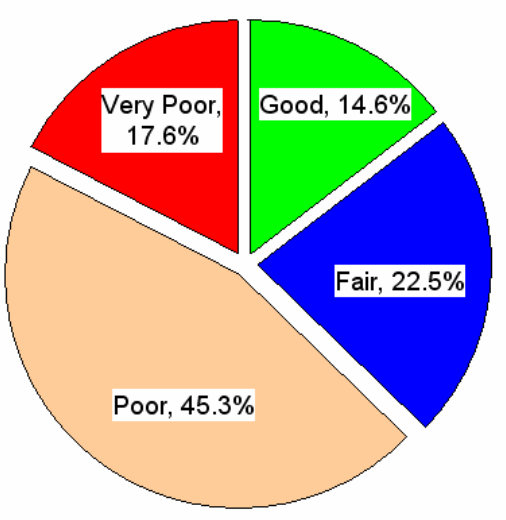
Functional Class	Centerline Miles	Lane Miles	No. of Management Sections	% of the Network (by Pavement Area)	Average PCI
Arterial	9.7	25.8	36	17.3%	58
Collector	21.0	43.2	92	24.1%	48
Residential	61.4	122.9	310	58.6%	41
Total	92.1	191.9	438	100%	46 (network average)

Table 2 provides pavement condition breakdowns by PCI ranges or condition category. A large portion of the City's streets are in "Poor" and "Very Poor" condition category, as shown in Figure 1.

Table 2. Pavement Condition Breakdown

Condition Category	PCI Range	Arterial (%)	Collector (%)	Residential (%)	Entire Network (%)
Good	70-100	20.8%	14.0%	13.0%	14.6%
Fair	50-69	40.4%	33.2%	12.8%	22.5%
Poor	25-49	33.5%	35.0%	53.0%	45.3%
Very Poor	<25	5.3%	17.8%	21.2%	17.6%
Total (%)		100%	100%	100%	100.0%

Figure 1. Current Pavement Condition



Current Budget and Maintenance Practices

The City's current budget level on pavement maintenance and rehabilitation is approximately $800,000 per year, as shown in Table 3.

Table 3. Current Budget and Funding Sources

Funding Source	Amount ($/Year)
Measure C Return to Source	$280,000
Gas Tax	$240,000
Garbage Franchise Fees	$280,000
Total (%)	$800,000

The City's current pavement treatment practices vary from project to project. Historically most projects involve local repairs (dig-outs), grinding and asphalt concrete overlays. The City has also used surface seals, such as slurry seals and cape seals.

Appendix I contains the pavement maintenance and rehabilitation (M&R) decision trees in the City's PMP database. Crack sealing and slurry seals are used as preventive maintenance for pavements in "Good" or "Fair" conditions. For "Poor" or "Very Poor" condition categories, the rehabilitation alternatives include mill & overlay and reconstructions.

Budget Needs

Based on the principle that it costs less to maintain roads in good condition than bad, the MTC Pavement Management Program strives to develop a maintenance strategy that will first improve the overall condition of the network, and then sustain it at that level. The current average PCI for the City is 46, which is in the “poor” condition category.

The first step in developing a cost-effective maintenance and rehabilitation strategy is to determine, assuming unlimited revenues, the maintenance "needs" of the City’s road network. Using the PMP budget needs module, maintenance needs over the next five years were estimated at $34.4 million. If the City follows the strategy recommended by the program, the average network PCI will increase to 85. If, however, no maintenance is applied over the next five years, already distressed roads will continue to deteriorate, and the network PCI will drop to 33. The results of the budget needs analysis are summarized in the table below.

Table 4. Summary of Results from Needs Analysis

Year	2005	2006	2007	2008	2009	Total
PCI w/ Treatment	74	76	80	84	85	
PCI w/out Treatment	46	43	40	37	33	
Budget Needs ($ million)	16.52	4.65	5.13	5.69	2.45	34.44
Preventive Maintenance ($ million)	0.16	0.01	0.04	0.04	0.03	0.28
Rehabilitation ($ million)	16.36	4.64	5.09	5.65	2.42	34.16

Table 4 shows the level of expenditures required to raise the City's pavement condition to a network PCI of 85 and eliminate the current maintenance backlog. The results of the budget needs analysis represent the ideal funding strategy from the MTC PMP. Of the $34.4 million in maintenance needs, only $0.3 million (less than 1 percent) is earmarked for preventative maintenance or life-extending treatments, while approximately $34.2 million is allocated for the more costly rehabilitation and reconstruction treatments.

Budget Scenarios

Having determined the maintenance needs of the City's road network, the next step in developing a cost-effective maintenance and rehabilitation strategy is to conduct several what-if analyses. Using the PMP budget scenarios module, the impacts of various budget "scenarios" can be evaluated. The program projects the effects of the different scenarios on pavement condition (PCI) and deferred maintenance (backlog). By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear. The following scenarios were run for the purposes of this report.

Scenario 1 Modified Needs Budget - In this scenario, the total amount as identified in the needs is distributed evenly in the five-year analysis period. This scenario will allow the City to improve the condition of the network to a PCI of 85 in five years.

Scenario 2 Existing Budget - Under the City's current budget level of $800k per year, the condition of the network will deteriorate to a PCI of 41 at the end of the five-year analysis period. In the meantime, the maintenance backlog will increase significantly from $15.7 million in 2005 to $29.3 million in 2009.

Scenario3 Budget Maintaining Current PCI – In order to maintain the current network PCI of 46, $1.4 million is needed per year for the next five year. Under this scenario, the maintenance backlog will increase from $15.1 million in 2005 to $28.3 million in 2009.

Scenario 4 Budget to Improve PCI by 5 – In order to improve the network PCI to 51, $2.0 million is needed per year for the next five year. Under this scenario, the maintenance backlog will increase from $14.5 million in 2005 to $27.7 million in 2009.

Appendix II contains detailed reports for the above scenarios.

Scenario 1: Modified Needs Budget

As stated above, the five-year pavement needs are approximately $34.4 million with $16.6 million in the first year. Instead of front loading the first year, this budget scenario is performed by distributing the needs evenly in the five-year analysis period, which may represent a more realistic and manageable budget. This results in a budget of approximately $6.89 million per year for the next five years. In this scenario, the network PCI will increase to 85 from its current level of 46. By the year 2009, 94.6% of the network will stay in the good condition category. In the meantime, the maintenance backlog is reduced significantly to $1.2 million in five years.

Table 5. Summary of Results for Scenario 1

Year	2005	2006	2007	2008	2009	Total
Budget ($ million)	6.89	6.89	6.89	6.89	6.89	34.45
Deferred Maintenance ($ million)	9.6	7.8	6.3	5.4	1.2	
PCI	59	65	72	78	85	

Scenario 2: Existing Budget

The City's existing budget is approximately $800,000 million in the next five years. The results indicate that the network PCI will decrease to 41 from its current level of 46 under this scenario. By the year 2009, only 32.7% of the network will fall into the good condition category. In addition, the backlog of work will grow from $15.7 million in 2005 to $29.3 million in 2009.

Table 6. Summary of Results for Scenario 2

Year	2005	2006	2007	2008	2009	Total
Budget ($ million)	0.8	0.8	0.8	0.8	0.8	4.0
Deferred Maintenance ($ million)	15.7	18.6	22.7	27.2	29.3	
PCI	48	46	44	42	41	

Scenario 3: Budget Maintaining Current PCI

In order to maintain the current network PCI of 46, $1.4 million per year in the next five years is needed. By the year 2009, 42.5% of the network will be in the good condition category. However, the backlog of work will grow from $15.1 million in 2005 to $28.3 million in 2009.

Table 7. Summary of Results for Scenario 3

Year	2005	2006	2007	2008	2009	Total
Budget ($ million)	1.4	1.4	1.4	1.4	1.4	7.0
Deferred Maintenance ($ million)	15.1	18.0	21.6	26.0	28.3	
PCI	49	48	47	46	46	

Scenario 4: Budget to Improve PCI by 5

In order to improve the network average PCI from the current level of 46 to 51, $2.0 million per year in the next five years is needed. By the year 2009, 52.7% of the network will be in the good condition category. However, the backlog of work will still grow, from $14.5 million in 2005 to $27.7 million in 2009.

Table 8. Summary of Results for Scenario 4

Year	2005	2006	2007	2008	2009	Total
Budget ($ million)	2.0	2.0	2.0	2.0	2.0	10.0
Deferred Maintenance ($ million)	14.5	16.8	20.4	24.9	27.7	
PCI	50	50	50	51	51	

Discussions

Figure 2 below illustrates the change in PCI over time for the different budget scenarios. Note that Scenario 1, which represents the ideal funding strategy, ultimately reaches a PCI of 85 after five years. By comparison, scenario 2 (City's existing budget) results in a decrease in PCI.

Figure 2. Pavement Condition Index by Scenario by Year

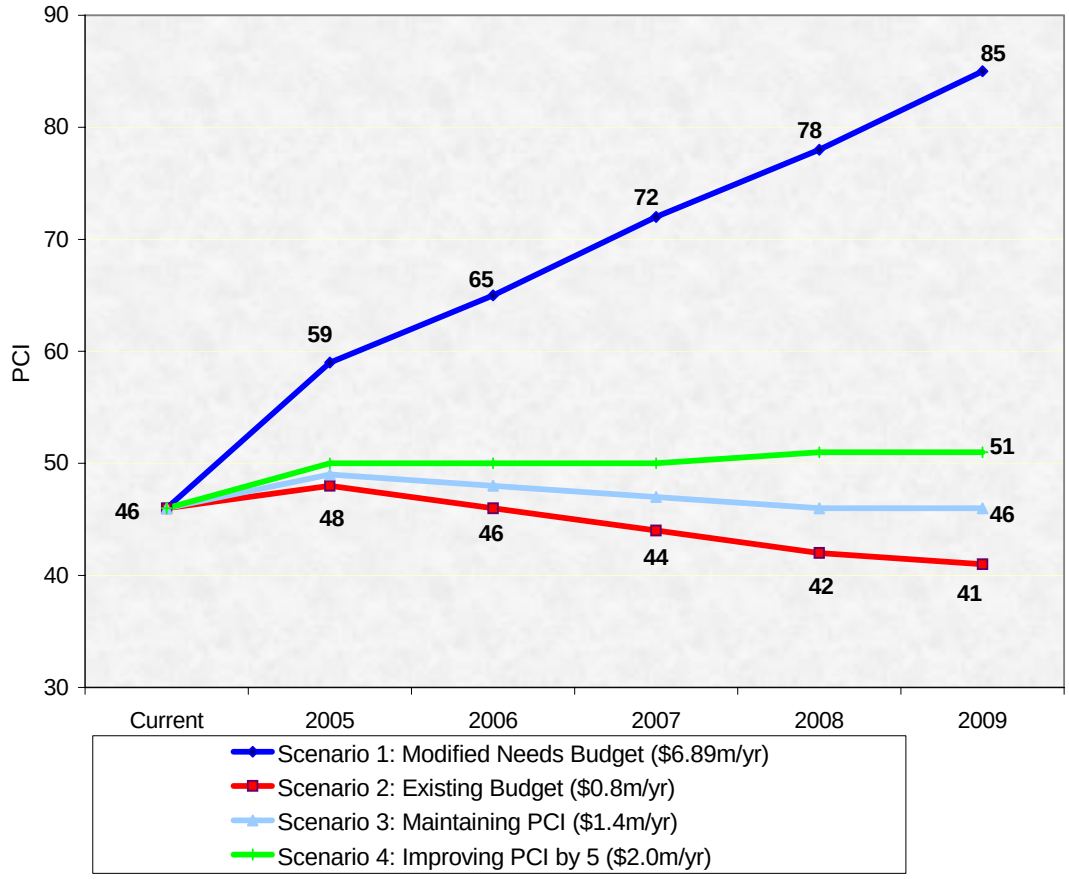


Figure 3 illustrates the change in deferred maintenance over time for the different budget scenarios. Note that scenario 1, the modified needs budget reduces the amount of deferred maintenance year by year while the amount of deferred maintenance for all the other three scenarios increases significantly.

Figure 3. Deferred Maintenance by Scenario by Year

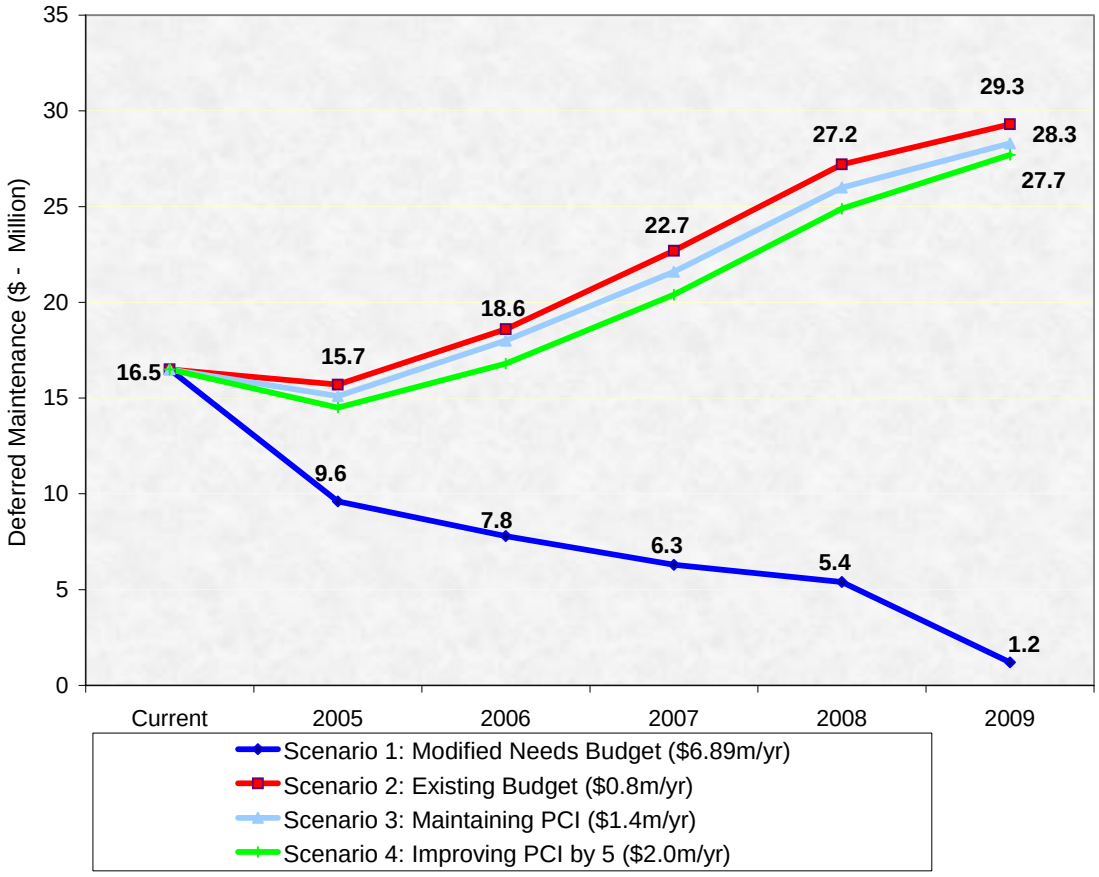
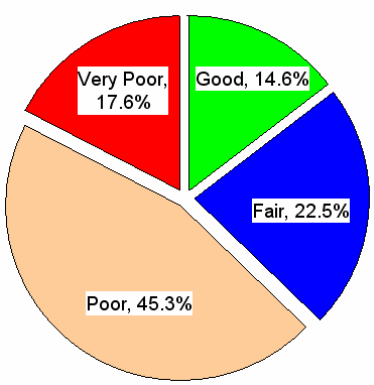
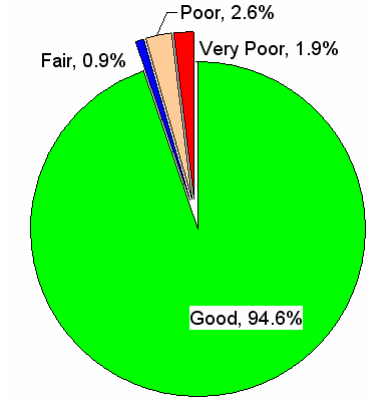


Figure 4 illustrates the pavement condition changes under various scenarios. Currently only 14.6% of the pavements are in "Good" condition category while 62.9% in "Poor" and "Very Poor" condition categories. For the modified needs budget, most of the pavements will be in "Good" condition category in 2009. For the other scenarios, it appears that more pavements will be in "Good" condition category. However, the percentage of the pavements in "Very Poor" condition category increases significantly.

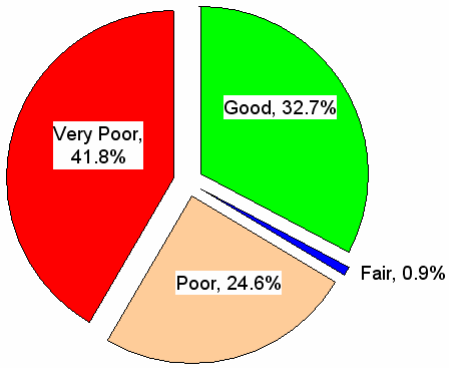
Figure 4. Pavement Condition Changes under Scenarios



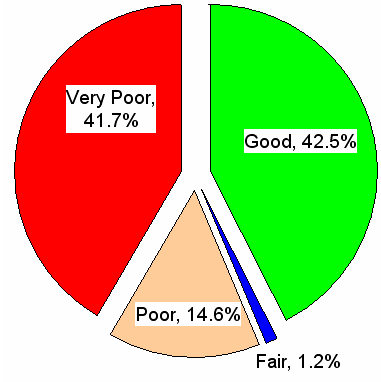
Current Condition (2005)



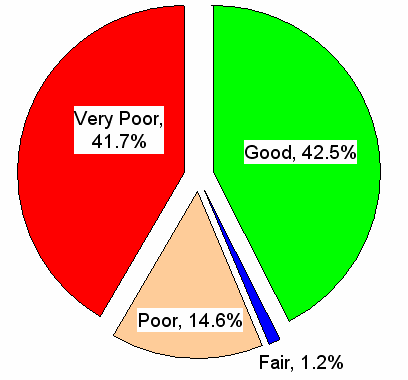
2009 Condition (Modified Needs Budget)



2009 Condition ($800k/Year)



2009 Condition ($1.4M/Year)



2009 Condition ($2.0M/Year)

Recommendations

The City of Orinda has a substantial investment in their street network as evidenced by the replacement cost of approximately $106 million. However, the network average PCI of the City is 46. Overall, only 14.6% of the City's street network is in the "Good" condition category. More than 60% of the streets are in "Poor" or "Very Poor" condition category, which require a significant amount of money to bring them into the "good" condition category. If sufficient funding is unavailable for street maintenance, the average PCI of the network is expected to decrease, and the deferred maintenance backlog will increase. The higher backlog will result in increased future costs as more capital intensive treatments (such as reconstruction) will be necessary as streets are deferred where less expensive treatments (such as surface seals or overlays) are currently feasible.

The analyses indicate that the City needs to spend $34.4 million in pavement maintenance and rehabilitation in the next five years, in order to essentially fix all streets. By doing so streets then can be maintained in good condition with on-going preventive maintenance. This will eventually save money by avoiding reaching the level of major rehabilitation (such as reconstructions).

a. Pavement Budget

The City's current budget for pavement maintenance and rehabilitation is $800k per year. At this budget level, the network average PCI is expected to decrease from the current level of 46, which is already in "poor" condition category. Due to the large percentage of the network in the "Poor" and "Very Poor" category, this level of funding is significantly short of what is required to maintain the pavement network.

As a minimum, we recommend that the City of Orinda immediately consider increasing pavement expenditures to at least twice the current levels. This will achieve the following objectives:

- Allows the City to preserve and improve pavements in the "Good" category
- Reduces the percentage of pavements in the "Fair" category
- Maintains the current average PCI (or shows a small improvement).

While far from ideal funding situation, (backlog will continue to increase), this strategy will, nonetheless, seek to preserve and maintain existing good pavements, and invest funds accordingly.

Examples of other sources of funding include:

- Assessment districts
- General Funds
- Local Transportation Bond
- Developers' fees

b. Pavement maintenance strategies

The City's pavement maintenance strategies include seals, overlays and local repairs. Since such a large percentage of pavements are in "Poor" or "Very poor" condition, it is tempting to invest on the worst streets and only fund overlay or reconstruction projects. However, it is equally important to preserve good pavements. Crack sealing, one of the least expensive treatments, can keep moisture out of pavements and prevent the underlying aggregate base from premature failures. Life-extending surface seals, such as slurry seal and cape seals, are also cost-effective for pavements currently in good condition.

Therefore, we strongly recommend that the City invest in an aggressive preventive maintenance program as outlined in the decision tree i.e. crack seals as well as slurry and cape seals.

c. Reinspection Strategies

In order to properly maintain the pavement management database and have the pavement management system certified, it is recommended that arterial streets in the network be re-inspected every year, collector streets every two years, and residential streets every three to four years.

It should be noted that the City's last update was in 2000.

d. Maintenance and rehabilitation decision trees

The maintenance and rehabilitation decision trees and the associated unit costs should be reviewed and updated annually to reflect new construction techniques/repairs and changing costs so the budget analysis results can be reliable and accurate.

e. MTC PMS Database

MTC requires cities submitting pavement maintenance and rehabilitation projects for funding to utilize a Pavement Management Program (PMP) in accordance with section 2108.1 of the Streets and Highway Code. Specifically, the minimum requirements are:

- Review and update the inventory information for all arterials and collectors every two years.
- Re-inspect arterial and collector routes every two years, and residential routes every 5 years.
- Calculate budget needs for rehabilitating or replacing deficient pavement sections for the current year and the next three years.

We recommend that the City of Orinda comply with the above requirements so as not to jeopardize the loss of any federal or state transportation funds. This is particularly critical since significant funding increases are needed to improve the pavement network.

f. Next Steps

To summarize, we recommend that the City immediately undertake three of the most critical steps:

- Implement a preventive maintenance strategy
- Direct staff to determine additional funding sources
- Review and finalize a financing plan developed by the citizen's task force Infrastructure Committee.

Appendix C

Roads Maintenance and Rehabilitation Cost Summaries

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

ALL PUBLIC STREETS and ROADS (ARTERIAL, COLLECTOR, & RESIDENTIAL STREETS)

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 46** for All Public Streets and Roads

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	Running Total	*Program Term (Year)*
2006	74	43	$ 128,823	$ 18,768,894	$ 18,897,717	$28,252,087	**$28,252,087**	*1*
2007	77	40	$ 33,713	$ 4,892,793	$ 4,926,506	$ 7,365,126	**$35,617,213**	*2*
2008	81	37	$ 40,080	$ 5,517,751	$ 5,557,831	$ 8,308,957	**$43,926,171**	*3*
2009	83	33	$ 23,571	$ 3,892,826	$ 3,916,397	$ 5,855,014	**$49,781,184**	*4*
2010	85	31	$ 51,567	$ 3,666,976	$ 3,718,543	$ 5,559,222	**$55,340,406**	*5*
2011	85	28	$ 332	$ 1,482,236	$ 1,482,568	$ 2,216,439	**$57,556,845**	*6*
2012	85	25	$ 440,100	$ 562,088	$ 1,002,188	$ 1,498,271	**$59,055,116**	*7*
2013	84	23	$ 204,380	$ 72,952	$ 277,332	$ 414,611	**$59,469,728**	*8*
2014	86	20	$ 1,222,357	$ 326,634	$ 1,548,991	$ 2,315,742	**$61,785,469**	*9*
2015	85	18	$ 278,542	$ 21,433	$ 299,975	$ 448,463	**$62,233,932**	*10*
2016	84	16	$ 356,460	$ 35,912	$ 392,372	$ 586,596	**$62,820,528**	*11*
2017	83	15	$ 129,146	$ 77,001	$ 206,147	$ 308,190	**$63,128,718**	*12*
2018	83	13	$ 681,718	$ 249,505	$ 931,223	$ 1,392,178	**$64,520,896**	*13*
2019	82	12	$ 378,695	$ 54,518	$ 433,213	$ 647,653	**$65,168,549**	*14*
2020	81	11	$ 249,847	$ 129,192	$ 379,039	$ 566,663	**$65,735,213**	*15*
2021	80	10	$ 145,041	$ 107,324	$ 252,365	$ 377,286	**$66,112,498**	*16*
2022	81	9	$ 1,542,850	$ 119,288	$ 1,662,138	$ 2,484,896	**$68,597,395**	*17*
2023	80	8	$ 225,193	$ 52,259	$ 277,452	$ 414,791	**$69,012,186**	*18*
2024	81	7	$ 995,799	$ 295,155	$ 1,290,954	$ 1,929,976	**$70,942,162**	*19*
2025	80	6	$ 493,524	$ 129,193	$ 622,717	$ 930,962	**$71,873,124**	*20*
2026	79	6	$ 372,122	$ 309,494	$ 681,616	$ 1,019,016	**$72,892,140**	*21*
2027	78	5	$ 356,056	$ 29,511	$ 385,567	$ 576,423	**$73,468,562**	*22*
2028	78	5	$ 263,546	$ 379,256	$ 642,802	$ 960,989	**$74,429,551**	*23*
2029	76	4	$ 1,197	$ 182,011	$ 183,208	$ 273,896	**$74,703,447**	*24*
2030	80	4	$ 2,348,142	$ 3,140,607	$ 5,488,749	$ 8,205,680	**$82,909,127**	*25*
2031	79	4	$ 597,306	$ 1,075,695	$ 1,673,001	$ 2,501,136	**$85,410,263**	*26*
2032	79	3	$ 695,600	$ 1,075,577	$ 1,771,177	$ 2,647,910	**$88,058,173**	*27*
2033	79	3	$ 309,567	$ 1,267,807	$ 1,577,374	$ 2,358,174	**$90,416,347**	*28*
2034	78	2	$ 392,290	$ 675,516	$ 1,067,806	$ 1,596,370	**$92,012,717**	*29*
2035	77	2	$ 237,733	$ 183,212	$ 420,945	$ 629,313	**$92,642,030**	*30*
			$ 13,195,297	$ 48,772,616	$ 61,967,913	$92,642,030		

Construction Cost	$ 61,967,913
Contingency for Material Costs (15%)	$ 9,295,187
Subtotal	$ 71,263,100
Engineering & Construction Management @ 30%	$ 21,378,930
ESTIMATED TOTAL COST	$ 92,642,030

or ***$92.64 Million***

Date Printed: Mar. 17, 2006

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

ARTERIAL & COLLECTOR STREETS

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 52** for Arterial and Collector Streets

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	**Running Total**	*Program Term (Year)*
2006	72	48	$ 44,723	$ 6,489,376	$ 6,534,099	$ 9,768,478	**$ 9,768,478**	*1*
2007	76	45	$ 33,713	$ 2,538,778	$ 2,572,491	$ 3,845,874	**$13,614,352**	*2*
2008	80	41	$ 40,080	$ 2,043,192	$ 2,083,272	$ 3,114,492	**$16,728,844**	*3*
2009	83	37	$ 10,497	$ 2,096,686	$ 2,107,183	$ 3,150,239	**$19,879,082**	*4*
2010	87	34	$ 1,637	$ 2,626,572	$ 2,628,209	$ 3,929,172	**$23,808,255**	*5*
2011	85	31	$ 332	$ 32,906	$ 33,238	$ 49,691	**$23,857,946**	*6*
2012	86	28	$ 440,100	$ 15,009	$ 455,109	$ 680,388	**$24,538,333**	*7*
2013	85	25	$ 204,380	$ 54,901	$ 259,281	$ 387,625	**$24,925,959**	*8*
2014	85	22	$ 171,581	$ 249,555	$ 421,136	$ 629,598	**$25,555,557**	*9*
2015	84	20	$ 114,628	$ 12,734	$ 127,362	$ 190,406	**$25,745,963**	*10*
2016	83	18	$ 136,386	$ 26,813	$ 163,199	$ 243,983	**$25,989,946**	*11*
2017	82	16	$ 588	$ 68,373	$ 68,961	$ 103,097	**$26,093,042**	*12*
2018	83	15	$ 548,802	$ 226,337	$ 775,139	$ 1,158,833	**$27,251,875**	*13*
2019	83	13	$ 252,627	$ 34,708	$ 287,335	$ 429,566	**$27,681,441**	*14*
2020	83	12	$ 217,592	$ 97,209	$ 314,801	$ 470,627	**$28,152,068**	*15*
2021	82	11	$ 145,041	$ 63,877	$ 208,918	$ 312,332	**$28,464,401**	*16*
2022	81	10	$ 175,396	$ 62,362	$ 237,758	$ 355,448	**$28,819,849**	*17*
2023	79	9	$ 865	$ 31,011	$ 31,876	$ 47,655	**$28,867,504**	*18*
2024	81	8	$ 694,612	$ 267,536	$ 962,148	$ 1,438,411	**$30,305,915**	*19*
2025	81	7	$ 319,785	$ 106,407	$ 426,192	$ 637,157	**$30,943,072**	*20*
2026	81	6	$ 275,701	$ 144,650	$ 420,351	$ 628,425	**$31,571,497**	*21*
2027	79	6	$ 183,524	$ -	$ 183,524	$ 274,368	**$31,845,865**	*22*
2028	79	5	$ 219,373	$ 309,742	$ 529,115	$ 791,027	**$32,636,892**	*23*
2029	77	5	$ 1,197	$ 132,156	$ 133,353	$ 199,363	**$32,836,255**	*24*
2030	82	4	$ 519,779	$ 3,104,831	$ 3,624,610	$ 5,418,792	**$38,255,047**	*25*
2031	82	4	$ 290,298	$ 991,936	$ 1,282,234	$ 1,916,940	**$40,171,987**	*26*
2032	82	3	$ 283,408	$ 933,567	$ 1,216,975	$ 1,819,378	**$41,991,364**	*27*
2033	82	3	$ 71,794	$ 1,219,690	$ 1,291,484	$ 1,930,769	**$43,922,133**	*28*
2034	82	2	$ 260,330	$ 575,568	$ 835,898	$ 1,249,668	**$45,171,800**	*29*
2035	80	2	$ 1,610	$ 132,232	$ 133,842	$ 200,094	**$45,371,894**	*30*
			$ 5,660,379	$ 24,688,714	$ 30,349,093	$ 45,371,894		

Construction Cost	$ 30,349,093
Contingency for Material Costs (15%)	$ 4,552,364
Subtotal	$ 34,901,457
Engineering & Construction Management @ 30%	$ 10,470,437
ESTIMATED TOTAL COST	$ 45,371,894

or ***$45.37 Million***

Date Printed: Mar. 17, 2006

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

ARTERIAL STREETS

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 58** for Arterial Streets

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	**Running Total**	*Program Term (Year)*
2006	72	55	$ 30,819	$ 1,929,282	$ 1,960,101	$ 2,930,351	**$ 2,930,351**	*1*
2007	72	52	$ 44	$ 600,258	$ 600,302	$ 897,451	**$ 3,827,802**	*2*
2008	75	49	$ 33,377	$ 734,254	$ 767,631	$ 1,147,608	**$ 4,975,411**	*3*
2009	76	46	$ -	$ 685,139	$ 685,139	$ 1,024,283	**$ 5,999,694**	*4*
2010	87	43	$ 1,636	$ 2,367,827	$ 2,369,463	$ 3,542,347	**$ 9,542,041**	*5*
2011	84	40	$ 332	$ -	$ 332	$ 496	**$ 9,542,537**	*6*
2012	85	36	$ 172,097	$ -	$ 172,097	$ 257,285	**$ 9,799,822**	*7*
2013	84	33	$ 33,718	$ 20,902	$ 54,620	$ 81,657	**$ 9,881,479**	*8*
2014	85	30	$ 92,655	$ 185,981	$ 278,636	$ 416,561	**$10,298,040**	*9*
2015	83	27	$ 35,439	$ -	$ 35,439	$ 52,981	**$10,351,021**	*10*
2016	83	24	$ 121,984	$ -	$ 121,984	$ 182,366	**$10,533,387**	*11*
2017	82	22	$ 588	$ 24,453	$ 25,041	$ 37,436	**$10,570,824**	*12*
2018	84	20	$ 218,087	$ 174,659	$ 392,746	$ 587,155	**$11,157,979**	*13*
2019	83	18	$ 42,844	$ -	$ 42,844	$ 64,052	**$11,222,031**	*14*
2020	83	16	$ 117,726	$ 46,414	$ 164,140	$ 245,389	**$11,467,420**	*15*
2021	81	15	$ 44,842	$ 28,606	$ 73,448	$ 109,805	**$11,577,225**	*16*
2022	82	13	$ 157,172	$ -	$ 157,172	$ 234,972	**$11,812,197**	*17*
2023	80	12	$ 865	$ -	$ 865	$ 1,293	**$11,813,490**	*18*
2024	83	10	$ 276,152	$ 221,000	$ 497,152	$ 743,242	**$12,556,732**	*19*
2025	81	9	$ 54,344	$ 33,465	$ 87,809	$ 131,274	**$12,688,007**	*20*
2026	82	8	$ 149,338	$ 58,728	$ 208,066	$ 311,059	**$12,999,065**	*21*
2027	80	7	$ 56,740	$ -	$ 56,740	$ 84,826	**$13,083,892**	*22*
2028	82	6	$ 196,314	$ 258,538	$ 454,852	$ 680,004	**$13,763,895**	*23*
2029	80	6	$ 1,196	$ 39,150	$ 40,346	$ 60,317	**$13,824,213**	*24*
2030	81	5	$ 349,571	$ -	$ 349,571	$ 522,609	**$14,346,821**	*25*
2031	80	5	$ 68,877	$ -	$ 68,877	$ 102,971	**$14,449,792**	*26*
2032	81	4	$ 225,012	$ -	$ 225,012	$ 336,393	**$14,786,185**	*27*
2033	79	3	$ 71,794	$ 45,799	$ 117,593	$ 175,802	**$14,961,987**	*28*
2034	81	3	$ 248,747	$ 327,134	$ 575,881	$ 860,942	**$15,822,929**	*29*
2035	79	3	$ 1,610	$ -	$ 1,610	$ 2,407	**$15,825,336**	*30*
			$ 2,803,920	$ 7,781,589	$ 10,585,509	$ 15,825,336		

Construction Cost	$ 10,585,509
Contingency for Material Costs (15%)	$ 1,587,826
Subtotal	$ 12,173,335
Engineering & Construction Management @ 30%	$ 3,652,001
ESTIMATED TOTAL COST	$ 15,825,336

or ***$15.83 Million***

Date Printed: Mar. 17, 2006

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

COLLECTOR and RESIDENTIAL STREETS

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 43** for Collector and Residential Streets

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	**Running Total**	*Program Term (Year)*
2006	75	40	$ 98,004	$ 16,839,613	$ 16,937,617	$25,321,737	**$25,321,737**	*1*
2007	77	37	$ 33,668	$ 4,292,535	$ 4,326,203	$ 6,467,673	**$31,789,411**	*2*
2008	82	34	$ 6,702	$ 4,783,498	$ 4,790,200	$ 7,161,349	**$38,950,760**	*3*
2009	85	31	$ 23,571	$ 3,207,687	$ 3,231,258	$ 4,830,731	**$43,781,491**	*4*
2010	85	28	$ 49,930	$ 1,299,150	$ 1,349,080	$ 2,016,875	**$45,798,365**	*5*
2011	85	25	$ -	$ 1,482,237	$ 1,482,237	$ 2,215,944	**$48,014,310**	*6*
2012	85	23	$ 268,003	$ 562,088	$ 830,091	$ 1,240,986	**$49,255,296**	*7*
2013	84	20	$ 170,662	$ 52,050	$ 222,712	$ 332,954	**$49,588,250**	*8*
2014	86	18	$ 1,129,701	$ 140,654	$ 1,270,355	$ 1,899,181	**$51,487,431**	*9*
2015	85	16	$ 243,103	$ 21,432	$ 264,535	$ 395,480	**$51,882,911**	*10*
2016	84	15	$ 234,477	$ 35,911	$ 270,388	$ 404,230	**$52,287,141**	*11*
2017	83	13	$ 128,558	$ 52,548	$ 181,106	$ 270,753	**$52,557,894**	*12*
2018	82	12	$ 463,632	$ 74,845	$ 538,477	$ 805,023	**$53,362,917**	*13*
2019	82	11	$ 335,851	$ 54,517	$ 390,368	$ 583,600	**$53,946,517**	*14*
2020	81	10	$ 132,122	$ 82,777	$ 214,899	$ 321,274	**$54,267,791**	*15*
2021	79	9	$ 100,199	$ 78,718	$ 178,917	$ 267,481	**$54,535,272**	*16*
2022	81	8	$ 1,385,678	$ 119,288	$ 1,504,966	$ 2,249,924	**$56,785,196**	*17*
2023	80	7	$ 224,328	$ 52,260	$ 276,588	$ 413,499	**$57,198,696**	*18*
2024	80	6	$ 719,646	$ 74,157	$ 793,803	$ 1,186,735	**$58,385,431**	*19*
2025	80	6	$ 439,181	$ 95,727	$ 534,908	$ 799,687	**$59,185,118**	*20*
2026	79	5	$ 222,784	$ 250,766	$ 473,550	$ 707,957	**$59,893,076**	*21*
2027	78	5	$ 299,317	$ 29,511	$ 328,828	$ 491,598	**$60,384,674**	*22*
2028	77	4	$ 67,203	$ 120,747	$ 187,950	$ 280,985	**$60,665,659**	*23*
2029	75	4	$ -	$ 142,861	$ 142,861	$ 213,577	**$60,879,236**	*24*
2030	80	4	$ 1,998,571	$ 3,140,608	$ 5,139,179	$ 7,683,073	**$68,562,309**	*25*
2031	79	3	$ 528,429	$ 1,075,695	$ 1,604,124	$ 2,398,165	**$70,960,474**	*26*
2032	79	3	$ 470,589	$ 1,075,576	$ 1,546,165	$ 2,311,517	**$73,271,991**	*27*
2033	79	3	$ 237,774	$ 1,222,007	$ 1,459,781	$ 2,182,373	**$75,454,363**	*28*
2034	77	2	$ 143,542	$ 348,382	$ 491,924	$ 735,426	**$76,189,790**	*29*
2035	76	2	$ 236,123	$ 183,212	$ 419,335	$ 626,906	**$76,816,695**	*30*
			$ 10,391,348	$ 40,991,057	$ 51,382,405	$ 76,816,695		

Construction Cost	$ 51,382,405
Contingency for Material Costs (15%)	$ 7,707,361
Subtotal	$ 59,089,766
Engineering & Construction Management @ 30%	$ 17,726,930
ESTIMATED TOTAL COST	$ 76,816,695

or ***$76.82 Million***

Date Printed: Mar. 17, 2006

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

RESIDENTIAL STREETS

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 41** for Residential Streets

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	Running Cost Total	*Program Term (Year)*
2006	76	39	$ 84,100	$ 12,279,518	$ 12,363,618	$18,483,609	**$18,483,609**	*1*
2007	77	36	$ -	$ 2,354,014	$ 2,354,014	$ 3,519,251	**$22,002,860**	*2*
2008	82	34	$ -	$ 3,474,559	$ 3,474,559	$ 5,194,466	**$27,197,326**	*3*
2009	84	31	$ 13,074	$ 1,796,139	$ 1,809,213	$ 2,704,773	**$29,902,099**	*4*
2010	84	28	$ 49,930	$ 1,040,404	$ 1,090,334	$ 1,630,049	**$31,532,148**	*5*
2011	85	26	$ -	$ 1,449,330	$ 1,449,330	$ 2,166,748	**$33,698,897**	*6*
2012	84	23	$ -	$ 547,079	$ 547,079	$ 817,883	**$34,516,780**	*7*
2013	83	21	$ -	$ 18,051	$ 18,051	$ 26,986	**$34,543,766**	*8*
2014	86	19	$ 1,050,775	$ 77,080	$ 1,127,855	$ 1,686,143	**$36,229,909**	*9*
2015	85	17	$ 163,914	$ 8,699	$ 172,613	$ 258,056	**$36,487,966**	*10*
2016	84	16	$ 220,074	$ 9,100	$ 229,174	$ 342,615	**$36,830,581**	*11*
2017	83	14	$ 128,558	$ 8,628	$ 137,186	$ 205,093	**$37,035,674**	*12*
2018	82	13	$ 132,917	$ 23,167	$ 156,084	$ 233,346	**$37,269,019**	*13*
2019	81	11	$ 126,068	$ 19,809	$ 145,877	$ 218,086	**$37,487,106**	*14*
2020	80	10	$ 32,255	$ 31,983	$ 64,238	$ 96,036	**$37,583,141**	*15*
2021	79	9	$ -	$ 43,447	$ 43,447	$ 64,953	**$37,648,095**	*16*
2022	82	8	$ 1,367,454	$ 56,926	$ 1,424,380	$ 2,129,448	**$39,777,543**	*17*
2023	81	7	$ 224,328	$ 21,248	$ 245,576	$ 367,136	**$40,144,679**	*18*
2024	80	7	$ 301,187	$ 27,619	$ 328,806	$ 491,565	**$40,636,244**	*19*
2025	79	6	$ 173,739	$ 22,786	$ 196,525	$ 293,805	**$40,930,049**	*20*
2026	79	5	$ 96,421	$ 164,844	$ 261,265	$ 390,591	**$41,320,640**	*21*
2027	78	5	$ 172,533	$ 29,511	$ 202,044	$ 302,056	**$41,622,696**	*22*
2028	77	5	$ 44,144	$ 69,544	$ 113,688	$ 169,964	**$41,792,659**	*23*
2029	75	4	$ -	$ 49,855	$ 49,855	$ 74,533	**$41,867,192**	*24*
2030	78	4	$ 1,828,363	$ 35,776	$ 1,864,139	$ 2,786,888	**$44,654,080**	*25*
2031	78	3	$ 307,008	$ 83,759	$ 390,767	$ 584,197	**$45,238,277**	*26*
2032	77	3	$ 412,195	$ 142,007	$ 554,202	$ 828,532	**$46,066,809**	*27*
2033	77	3	$ 237,774	$ 48,116	$ 285,890	$ 427,406	**$46,494,214**	*28*
2034	76	2	$ 131,959	$ 99,949	$ 231,908	$ 346,702	**$46,840,917**	*29*
2035	75	2	$ 236,123	$ 50,980	$ 287,103	$ 429,219	**$47,270,136**	*30*
			$ 7,534,893	$ 24,083,927	$ 31,618,820	$ 47,270,136		

Construction Cost	$ 31,618,820
Contingency for Material Costs (15%)	$ 4,742,823
Subtotal	$ 36,361,643
Engineering & Construction Management @ 30%	$ 10,908,493
ESTIMATED TOTAL COST	$ 47,270,136

or ***$47.27 Million***

Date Printed: Mar. 17, 2006

CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

ROAD SEGMENTS WITH LESS THAN PCI 60

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI =36** for Road Segments with Less Than PCI 60

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	**Running Total**	*Program Term (Year)*
2006	72	33	$ -	$ 18,303,501	$ 18,303,501	$ 27,363,734	**$27,363,734**	*1*
2007	76	30	$ -	$ 4,786,443	$ 4,786,443	$ 7,155,732	**$34,519,466**	*2*
2008	82	26	$ -	$ 5,394,030	$ 5,394,030	$ 8,064,075	**$42,583,541**	*3*
2009	85	23	$ -	$ 3,680,389	$ 3,680,389	$ 5,502,182	**$48,085,723**	*4*
2010	87	20	$ 977	$ 3,234,669	$ 3,235,646	$ 4,837,291	**$52,923,013**	*5*
2011	87	16	$ 332	$ 1,134,534	$ 1,134,866	$ 1,696,625	**$54,619,638**	*6*
2012	87	14	$ 359,685	$ 547,079	$ 906,764	$ 1,355,612	**$55,975,250**	*7*
2013	85	11	$ 161,657	$ -	$ 161,657	$ 241,677	**$56,216,928**	*8*
2014	87	9	$ 1,065,056	$ -	$ 1,065,056	$ 1,592,259	**$57,809,186**	*9*
2015	86	7	$ 236,950	$ -	$ 236,950	$ 354,240	**$58,163,426**	*10*
2016	85	6	$ 313,600	$ -	$ 313,600	$ 468,832	**$58,632,258**	*11*
2017	84	4	$ 127,538	$ -	$ 127,538	$ 190,669	**$58,822,928**	*12*
2018	84	3	$ 519,939	$ -	$ 519,939	$ 777,309	**$59,600,237**	*13*
2019	83	3	$ 292,949	$ -	$ 292,949	$ 437,959	**$60,038,195**	*14*
2020	82	2	$ 180,250	$ -	$ 180,250	$ 269,474	**$60,307,669**	*15*
2021	80	1	$ 109,034	$ -	$ 109,034	$ 163,006	**$60,470,675**	*16*
2022	82	1	$ 1,416,690	$ -	$ 1,416,690	$ 2,117,952	**$62,588,626**	*17*
2023	81	0	$ 207,216	$ -	$ 207,216	$ 309,788	**$62,898,414**	*18*
2024	81	0	$ 877,507	$ -	$ 877,507	$ 1,311,873	**$64,210,287**	*19*
2025	81	0	$ 432,785	$ -	$ 432,785	$ 647,014	**$64,857,301**	*20*
2026	80	0	$ 276,023	$ -	$ 276,023	$ 412,654	**$65,269,955**	*21*
2027	79	0	$ 258,798	$ -	$ 258,798	$ 386,903	**$65,656,858**	*22*
2028	77	0	$ 194,577	$ -	$ 194,577	$ 290,893	**$65,947,751**	*23*
2029	76	0	$ 1,197	$ -	$ 1,197	$ 1,790	**$65,949,540**	*24*
2030	81	0	$ 2,146,487	$ 3,004,861	$ 5,151,348	$ 7,701,265	**$73,650,806**	*25*
2031	80	0	$ 495,823	$ 957,196	$ 1,453,019	$ 2,172,263	**$75,823,069**	*26*
2032	80	0	$ 548,474	$ 848,868	$ 1,397,342	$ 2,089,026	**$77,912,095**	*27*
2033	79	0	$ 278,825	$ 1,116,676	$ 1,395,501	$ 2,086,274	**$79,998,369**	*28*
2034	78	0	$ 293,946	$ 147,155	$ 441,101	$ 659,446	**$80,657,815**	*29*
2035	77	0	$ 166,981	$ -	$ 166,981	$ 249,637	**$80,907,452**	*30*
			$ 10,963,296	$ 43,155,401	$ 54,118,697	$ 80,907,452		

Construction Cost	$ 54,118,697
Contingency for Material Costs (15%)	$ 8,117,805
Subtotal	$ 62,236,502
Engineering & Construction Management @ 30%	$ 18,670,950
ESTIMATED TOTAL COST	$ 80,907,452

or ***$80.91 Million***

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CITY OF ORINDA

Preventative Maintenance & Rehabilitation

Projected PCI & Total Cost Summary - RUNNING TOTAL - 30 YEAR PERIOD

ROADS WITH 500 AVERAGE DAILY TRIPS OR MORE

Inflation Rate = 4%

Last Calculated or Inspected (June 2005) Average Weighted **PCI = 49** for Roads with 500 Average Daily Trips or More

Year	PCI Treated	PCI Untreated	Maintenance Cost	Rehabilitation Cost	Subtotal Maint. & Rehab. Cost	Total with Contingency for Material Costs (15%) Eng. & Const. Mgmt. (30%)	**Running Total**	*Program Term (Year)*
2006	72	46	$ 58,524	$ 9,690,580	$ 9,749,104	$14,574,910	**$14,574,910**	*1*
2007	76	43	$ 29,866	$ 3,831,291	$ 3,861,157	$ 5,772,430	**$20,347,340**	*2*
2008	80	39	$ 40,080	$ 3,146,013	$ 3,186,093	$ 4,763,209	**$25,110,549**	*3*
2009	83	36	$ 17,302	$ 2,977,643	$ 2,994,945	$ 4,477,443	**$29,587,992**	*4*
2010	87	33	$ 3,439	$ 3,235,001	$ 3,238,440	$ 4,841,468	**$34,429,460**	*5*
2011	86	30	$ 332	$ 453,241	$ 453,573	$ 678,092	**$35,107,551**	*6*
2012	85	27	$ 408,279	$ 15,009	$ 423,288	$ 632,816	**$35,740,367**	*7*
2013	85	24	$ 184,143	$ 65,144	$ 249,287	$ 372,684	**$36,113,051**	*8*
2014	86	21	$ 528,124	$ 257,834	$ 785,958	$ 1,175,007	**$37,288,058**	*9*
2015	85	19	$ 214,181	$ 12,734	$ 226,915	$ 339,238	**$37,627,296**	*10*
2016	84	17	$ 222,268	$ 26,813	$ 249,081	$ 372,376	**$37,999,672**	*11*
2017	83	15	$ 68,267	$ 68,373	$ 136,640	$ 204,277	**$38,203,949**	*12*
2018	83	14	$ 557,977	$ 221,706	$ 779,683	$ 1,165,626	**$39,369,575**	*13*
2019	83	12	$ 281,942	$ 34,709	$ 316,651	$ 473,393	**$39,842,968**	*14*
2020	82	11	$ 195,981	$ 110,689	$ 306,670	$ 458,472	**$40,301,440**	*15*
2021	81	89	$ 145,041	$ 63,877	$ 208,918	$ 312,332	**$40,613,772**	*16*
2022	81	8	$ 660,031	$ 80,888	$ 740,919	$ 1,107,674	**$41,721,446**	*17*
2023	80	8	$ 137,119	$ 31,003	$ 168,122	$ 251,342	**$41,972,789**	*18*
2024	81	7	$ 774,797	$ 267,536	$ 1,042,333	$ 1,558,288	**$43,531,077**	*19*
2025	81	6	$ 387,802	$ 106,406	$ 494,208	$ 738,841	**$44,269,918**	*20*
2026	80	5	$ 304,527	$ 155,368	$ 459,895	$ 687,543	**$44,957,461**	*21*
2027	79	5	$ 250,259	$ -	$ 250,259	$ 374,137	**$45,331,598**	*22*
2028	78	4	$ 215,924	$ 340,009	$ 555,933	$ 831,120	**$46,162,718**	*23*
2029	77	4	$ 1,197	$ 132,156	$ 133,353	$ 199,363	**$46,362,080**	*24*
2030	81	3	$ 1,170,319	$ 2,817,983	$ 3,988,302	$ 5,962,511	**$52,324,592**	*25*
2031	81	3	$ 453,716	$ 914,391	$ 1,368,107	$ 2,045,320	**$54,369,912**	*26*
2032	81	3	$ 440,929	$ 727,669	$ 1,168,598	$ 1,747,054	**$56,116,966**	*27*
2033	81	2	$ 198,555	$ 1,219,691	$ 1,418,246	$ 2,120,278	**$58,237,244**	*28*
2034	81	2	$ 337,203	$ 579,518	$ 916,721	$ 1,370,498	**$59,607,742**	*29*
2035	78	2	$ 92,942	$ 120,695	$ 213,637	$ 319,387	**$59,927,129**	*30*
			$ 8,381,066	$ 31,703,970	$ 40,085,036	$ 59,927,129		

Construction Cost	$ 40,085,036
Contingency for Material Costs (15%)	$ 6,012,755
Subtotal	$ 46,097,791
Engineering & Construction Management @ 30%	$ 13,829,337
ESTIMATED TOTAL COST	$ 59,927,129

or ***$59.93 Million***

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Appendix E

Report of the Fireflow Subcommittee

Report from the Subcommittee on Fire Flow:
Orinda's Insufficient Water Supply for Fighting Fires
Recommended Plan for Remediation

The October 1991 firestorm that occurred in the Oakland/Berkeley hills was a harbinger of the potential for a similar fire that could occur in Orinda. Many of the same conditions that contributed to the loss of life and property in the Oakland/Berkeley hills fire exist in Orinda, including, lack of a sufficient water supply for fighting a major conflagration. In many areas of Orinda there is insufficient water to effectively fight an ordinary house fire.

In 1996 Contra Costa County (at the time serving Orinda) and EBMUD completed an initial reconnaissance study that would bring all of Orinda's water pipes in compliance with the established fire flow of 2,250 gallons per minute (gpm) from 3 adjacent hydrants. The estimated cost for improvements was $53 million. The study recommended a comprehensive engineering study.

In 1998 the Orinda Fire Safety Committee (OFSC) was formed comprising of 2 members from the Orinda city council, 2 members from the EBMUD Board of Directors and 2 members from the Moraga-Orinda Fire District Board of Directors. An Orinda Comprehensive Fire Flow Study was initiated that utilized state of the art hydraulic computer modeling, analyzed a range of fire flow options and costs for each. The resulting cost estimate to provide the established fire flow of 2,250 gpm was $50 million.

The OFSC determined that this amount was too high and would not be supported by the community. The OFSC requested staff to prioritize the $50 million project to enable the citizens of Orinda to get "the biggest bang for their buck".

In 1999 a methodology was established that would focus first on:

- areas with fire flows below 1,000 gpm (this is the recognized minimum standard for most residential development applications in the fire code)
- areas that would provide additional sources of water
- areas that were at a higher risk should a fire occur
- areas that would provide a benefit to the highest number of parcels per project
- improvements allowing for additional fire hydrants that would provide the most benefit to the highest number of parcels
- combining projects that would allow for construction efficiencies

The result of this prioritization was an Orinda Fire Flow Plan that directly or indirectly benefited nearly one-half of all Orinda parcels at a cost of $12.7 million. (See attached City of Orinda Fire Flow Master Plan)

In November 2002 the voters of Orinda narrowly missed the required 2/3rd's vote to pass a bond measure (Measure N) that would have been used to pay for these improvements.

Following the election Orinda city council members and Moraga-Orinda Fire District members that had previously sat on the OFSC met. The city, needing to address significant road and drainage issues, requested that the District hold off moving forward with another ballot measure. It was determined that roads, drains and water pipes were all important infrastructure issues that would be better addressed at the same time. The Moraga-Orinda Fire District agreed to work with the city and hold off on another ballot measure pending the city's need to analyze and prioritize the road and drainage problems. At that time the three would be combined for a comprehensive infrastructure ballot measure.

Since the time of the original Orinda Fire Flow Plan in 1999 EBMUD has completed projects 32 ($87,000) and 43 ($56,000). $12,617,000 worth of projects remains (at the 1999 cost). The revised cost of these remaining projects is now $14,153,025 (as of September 2005).

1000 GALLONS PER MINUTE FROM ONE HYDRANT IN 90% OF CITY
CITY OF ORINDA FIRE FLOW MASTER PLAN
RECOMMENDED PRIORITIZATION OF IMPROVEMENTS

ITEM	PRESSURE ZONE	FIRE INDEX ZONE	STREET	LIMITS	LENGTH (FT)	NEW SIZE (IN)	OLD SIZE (IN)	ESTIMATED COST (1) ($, April 1999)	NEW HYDRANTS (2)	TOTAL COST (3) ($, April 1999)	CUMULATIVE TOTAL COST ($, April 1999)	FIRE FLOW BENEFIT (GPM)	BENEFIT (4) (NO. OF PARCELS) DIRECT	BENEFIT (4) (NO. OF PARCELS) INDIRECT
1	Bryant	2	Manzanita Dr	Camino Pablo to Vista Del Mar	1,400	8	-	277,000	1 (Camino Pablo)	284,000		Increase in FF (300 - 1250 to 3300 - 4000). Provide additional source of water. Add new hydrant.	274	0
			Acacia Dr	Manzanita Dr to 1 Acacia Dr	185	8	-	37,000		37,000				
			Vista Del Mar	Manzanita Dr to 136 Manzanita Dr	425	8	-	84,000		84,000				
2	Valley View	6	Las Vegas	El Verano to Via Floreado	425	8	-	84,000		84,000		Increase in FF (350 - 650 to 650 - 950). Provide additional source of water.	502	60
	Valley View	7	Miner Road	746 Miner Rd to Honey Hill Rd	1,900	12	4	513,000		513,000				
3	Encinal	1	La Encinal	R/W 1158 to 121 La Encinal	1,395	8	6	276,000		276,000		Increase in FF (400 - 600 to 550 - 1300).	114	10
4	Valley View	7	Charles Hill Rd	64 Charles Hill Rd to Charles Hill Cir	1,000	12	6	270,000	1	277,000		Increase in FF (400 - 700 to 1250 - 1350). Provide additional source of water. Add new hydrant.	-	-
			Charles Hill Rd	R/W 574 to 64 Charles Hill Rd	465	12	-	126,000		126,000				
5	Westside	1	Camino Del Diablo	Mira Monte Rd to Hydrant H-11671	425	8	4	84,000	1	91,000		Increase in FF (300 - 700 to 700 to 1000). Add new hydrant.	22	14
			Camino Del Diablo	Hydrant H-11671 to Hydrant 39	450	6	4	86,000		86,000				
6	Orchard	4	Brookside Rd	Orchard Rd to Estates Dr	510	8	4	101,000	1 (Owl Hill Rd)	108,000				
			Estates Dr	Brookside Rd to Estates Ct	280	8	4	55,000		55,000				
			Estates Dr	Estates Ct to Hydrant 15302	830	6	4	159,000		159,000		Increase in FF (500 to 850 - 1050). Add new hydrant.	47	40
			Estates Dr	Brookside Rd to Hydrant H-10123	295	6	4	57,000		57,000				
					9,985			**2,210,000**		**2,240,000**	**2,240,000**		**959**	**124**
7	Las Aromas	6	La Cuesta	La Cuesta to Via Farallon	1,085	8	4	215,000	1	222,000		Increase in FF (250 to 1500) in Las Aromas PZ. Increase in FF (250 to 550 - 800) in Via Farallon PZ. Add new hydrant.	73	-
			La Cuesta	Via Farallon to Cascade Ln	400	6	6	77,000		77,000				
8	Dos Osos	1	Dos Osos	R/W 1176 to Alta Vista	775	12	-	209,000		209,000		Increase in FF (100 - 150 to 350). Provide additional source of water.	86	0
9	Las Aromas	6	Las Vegas	St Stephens Dr to Via Floreado	420	8	-	83,000		83,000		Increase in FF (500 - 850 to 850 - 1450). Provide additional source of water.	75	35
10	Orchard	4	Orchard Rd	Glorietta Blvd to Valley Dr	870	12	6	235,000	1	242,000		Increase in FF (500 - 550 to 850 - 1050). Add new hydrant.	75	-
			Valley Dr	Orchard Rd to Hydrant 131	920	12	6	248,000		248,000				
11	Valencia	8	Don Gabriel Way	Valencia Rd to El Camino Moraga	355	12	6	96,000	4 (1- El Camino Moraga)	122,000				
			El Camino Moraga	Don Gabriel Way to Donna Maria Way	685	12	6	185,000		185,000		Increase in FF (450 - 750 to 650 to 1800). Add four new hydrants.	121	0
			Valencia Rd	Don Gabriel Way to Regulator	80	12	8	22,000		22,000				
12	Valley View	7	Canyon View	R/W 1897 to Diablo View	1,350	12	6	365,000	1	372,000		Increase in FF (400 - 800 to 1700). Add new hydrant.	-	-
			Diablo View and Miner Rd	Canyon View to 746 Miner Rd	1,990	12	6	537,000		537,000				
					8,930			**2,270,000**		**2,320,000**	**4,560,000**		**430**	**35**
13	Las Aromas	6	Via Hermosa	La Espiral to Hydrant 27	770	8	4	152,000	2 (2 - La Espiral)	165,000		Increase in FF (200 to 1200). Add two new hydrants.	28	0
14	Laguna	3	Hillsdale Ct	Crestview Dr to Hydrant H-10861	510	8	4	101,000		101,000		Increase in FF (500 to 1200).	16	0
15*	Valley View	7	Charles Hill Cir	39 Charles Hill Cir to South Pt Rd	1,630	8	4	323,000	1	330,000		Increase in FF (300 to 900). Add new hydrant.	-	7
			Charles Hill Cir	South Pt Rd to Hydrant 16717	495	6	4	95,000		95,000				
16	Bryant	4	Davis Rd	Bates Blvd to Southwood Dr	1,595	8	4	316,000	2	329,000				
			Southwood Dr	Davis Rd to Northwood Dr	1,325	8	4/6	262,000		262,000		Increase in FF (200 - 350 to 650 - 800 to 2400 - 2700). Add two new hydrants.	102	10
			Northwood Dr	Moraga Way to Southwood Dr	135	8	6	27,000		27,000				
17	Bryant	2	Camino Don Miguel	Vista Del Mar to Camino Don Miguel	2,210	6	4	424,000	2 (1 - Camino Don Miguel)	437,000		Increase in FF (200 to 1000). Add two new hydrants.	100	0
18	Bryant	4	Camino Encinas	Moraga Way to Underhill Rd	1,810	6	4	348,000	3 (2 - Moraga Way)	368,000		Increase in FF (500 to 2700 - 3300). Add three new hydrants.	60	6
					10,480			**2,050,000**		**2,110,000**	**6,670,000**		**306**	**23**
19	Bryant	4	Overhill Ct	Overhill Rd to Hydrant H-13086	240	6	4	46,000		46,000		Increase in FF (550 to 950).	11	0

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20	Bryant	4	Westwood Ct	Overhill Rd to Hydrant H-11351	410	8	4	81,000		81,000		Increase in FF (400 to 750).	8	0
21	Camino Sobrante	6	Camino Sobrante	La Espiral to Dias Dorados	1,730	12	6	467,000	1	474,000		Increase in FF (300 - 800 to 850 - 1250). Add new hydrant.	47	15
22	Las Aromas	2	Icabod Ln	10 Icabod Ln to Berrybrook Hollow	805	12	6	217,000		217,000				
			R/W 3051, 3050, 3176	Berrybrook Hollow to Tappan Terrace	375	12	8	101,000		101,000		Increase in FF (350 - 600 to 900 - 2000).	22	0
23	Baseline	4	Meadowpark Ct	Glorietta Blvd to 29 Meadowpark Ct	1,070	8	4	212,000	1	219,000		Increase in FF (400 - 450 to 1850). Add new hydrant.	24	0
24	Baseline	3	Woodcrest Dr	Moraga Via to Hydrant 15472	450	8	4	89,000		89,000		Increase in FF (650 - 700 to 1100 - 1250).	11	0
25	Baseline	4	Catherine Ct	120 Catherine Ct to Overhill Rd	215	8	6	43,000		43,000				
			Overhill Rd	Catherine Ct to Scenic Dr	565	12	6	153,000		153,000				
			Scenic Dr	Overhill Rd to 127 Scenic Dr	180	12	6	49,000		49,000				
			Overhill Rd	Scenic Dr to Hydrant H-11413	715	8	6	142,000		142,000		Increase in FF (650 - 700 to 1000 - 1400).	208	30
26	Baseline	3	Kenmore Ct	Lost Valley to Albo Ct	280	6	4	54,000	1 (Lost Valley Ct)	61,000		Increase in FF (650 to 950). Add new hydrant.	18	0
27	Laguna	3	Access Road to Laguna Res	Crestview Dr to 179 Crestview Dr	345	12	6	93,000		93,000				
			Crestview Dr	179 Crestview Dr to Hydrant 15082	890	12	6	240,000		240,000		Increase in FF (750 - 800 to 1100).	86	5
					8,270			**1,990,000**		**2,010,000**	**8,680,000**		**435**	**50**
28	Westside	1	El Toyonal	Westside Reservoir to 259 El Toyonal	1,085	8	6	215,000		215,000				
			El Toyonal	259 El Toyonal to Hydrant 82	310	12	6	84,000		84,000				
			El Toyonal	Westside Reservoir to Hydrant 81	550	12	6	149,000		149,000		Increase in FF (600 - 700 to 1000 - 2300)	48	20
29*	Westside	1	La Madronal	El Toyonal to New Hydrant	800	8	4	158,000	1	165,000		Add new hydrant (1650).	-	0
30	Bryant	1	Canon Dr	R/W 356 to Hydrant 15680	140	8	4	28,000		28,000		Increase in FF (500 to 3600). Add new hydrant.	12	0
				Hydrant 15680 to 75 Canon Dr	630	6	4	121,000	1	128,000				
31+	Bryant	1	Marston Rd	Monte Vista Rd to 23 Monte Vista Rd	295	8	4	58,000		58,000				
				23 Monte Vista Rd to New Hydrant	370	6	4	71,000	1	78,000		Provide FF (850) to new hydrant.	12	0
32	Las Aromas	2	Snowberry Ct	Tarry Ln to New Hydrant	415	6	4	80,000	1	87,000		Provide FF (2300) to new hydrant.	6	0
33	Las Aromas	2	St James Ct	Van Ripper Ln to New Hydrant	505	6	4	97,000	1	104,000		Provide FF (2300) to new hydrant.	10	0
34	Las Aromas	6	Linda Vista	La Cuesta to 6' Path	390	8	6	77,000	1	84,000				
			Linda Vista	6' Path to New Hydrant	125	8	6	25,000		25,000		Increase in FF (600 to 1700). Add new hydrant.	15	10
			Linda Vista	New Hydrant to Hydrant 10337	525	6	4	101,000		101,000		Add new hydrant (1200).	8	6
35*	Las Aromas	6	Via Hermosa	Hydrant 27 to New Hydrant	535	6	4	103,000	1	110,000				
36+	Bryant	6	Vida Descansada	La Noria to New Hydrant	600	6	4	115,000	5 (3 - Camino Sobrante) (1- Dos Posos)	148,000		Provide FF (800) to new hydrant. Add five new hydrants.	24	0
37*	Via Farallon	6	Via Farallon	La Cuesta to Hydrant 34	1,980	8	6	392,000	3 (1 - Mira Loma) (1 - Camino Sobrante)	412,000		Increase in FF (550 - 800 to 1650 - 1750). Add three new hydrants (550 - 1500).	46	15
38	Laguna	3	Culver Ct	Crestview Dr to New Hydrant	300	6	4	58,000	1	65,000		Add new hydrant (1250).	-	0
39	Bryant	3	Glorietta Ct	Glorietta Dr to Hydrant H-11108	200	6	4	38,000		38,000		Increase in FF (900 to 2450).	16	0
					9,755			**1,970,000**		**2,080,000**	**10,760,000**		**197**	**51**
40	Bryant	4	Orchard Rd	Brookside Rd to Estates Dr	1,610	6	4	309,000	1	316,000		Increase in FF (800 -1300 to 1850).	30	20
41	Bryant	1	Ardilla Rd	30 Ardilla Rd to North Ln	1,000	6	4	192,000	1 (Camino Pablo)	199,000		Increase in FF (800 -900 to 2700 - 3900). Add new hydrant.	37	20

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42	Bryant	7	Brookbank Rd	Miner Rd to Hydrant 87	370	6	4	71,000		71,000				
			Miner Rd	Lombardy Ln to Brookbank Rd	550	12	8	149,000		149,000		Increase in FF (850 - 1900 to 1650 - 2400).	36	15
43	Orchard	4	Sunrise Hill Rd	Sunrise Hill Rd to R/W 706	290	6	-	56,000		56,000		Increase in FF (350 - 550 to 2400 - 2500).		
			R/W	Sunrise Hill Rd to Oak Rd	215	8	-	43,000		43,000		Rezone to Baseline PZ. Contingent upon Montanera and Castlegate.	-	-
44+	Valley View	6	El Verano	Las Vegas to Hydrant 19	515	6	4	99,000		99,000		Increase in FF (300 to 850).	-	0
45*	Valley View	6	La Campana	La Espiral to La Punta	1,555	8	6	308,000		308,000				
			La Campana	La Punta to El Campanero	325	6	6	62,000		62,000		Increase in FF (650 to 1100).	-	10
46	Las Aromas	7	Ranch Rd	Miner Rd to Hydrant H-10409	665	6	4	128,000		128,000		Increase in FF (600 to 1300).	13	0
47	Las Aromas	7	Miner Rd	Tiger Tail Ct to Valley View Rd	470	12	6	127,000	1	134,000				
			Valley View Rd	Miner Rd to 10 Valley View Rd	510	12	6	138,000		138,000		Increase in FF (750 - 850 to 1350 - 1450).		
			Valley View Rd	10 Valley View Rd to Valley View Ln	330	8	6	65,000		65,000		Add new hydrant.	26	10
48*	Las Aromas	7	Charles Hill Rd	New Hydrant to Hydrant 29	560	8	6	111,000	2 (1 - El Nido Ranch)	124,000		Increase in FF (740 to 1000). Add two new hydrants (1050).	23	6
49	Bryant	1	Claremont Ave	California Ave to Berkeley Ave	560	8	6	111,000		111,000		Increase in FF (750 - 950 to 1750).	189	36
					9,525			1,970,000		2,000,000	12,760,000		354	117

Appendix F

EBMUD's Participation in Upgrade of Water Distribution System

Appendix F

Memorandum

April 13, 2004

To: City of Orinda Infrastructure Committee
From: Roger James
Subject: EBMUD's Participation in Upgrade of Water Distribution System

BACKGROUND

The June 1997 consolidation of the Orinda Fire Protection District and Moraga Fire Protection District into the Moraga-Orinda Fire Protection District (MOFD) established a special tax to provide funds for fire protection, prevention and suppression and emergency medical services, equipment and related facilities, including water distribution facilities for fire suppression purposes, with the proceeds restricted to use in the Orinda area. The MOFD subsequently levied 5¢ of the 6¢ approved tax.

The Orinda Fire Safety Committee (OFSC) consisting of representatives from the City of Orinda, East Bay Municipal Utility District (EBMUD) and MOFD was formed in February 1998 to address the fire safety concerns in Orinda. The three agencies entered into a cooperative agreement in May 1998 to undertake a comprehensive engineering study of the water distribution system of the water system. The results of the study indicated that $50 million in system improvements would be required to achieve a fire flow standard of 2,250 gallons per minute (gpm) at 20 pounds per square inch pressure from three adjacent hydrants flowing simultaneously. The OFSC subsequently prioritized the improvements to provide higher priorities to areas with fire flows less than 1000 gpm from a single hydrant, provision of additional flows, address areas with a high fire safety index, provision of direct and indirect safety benefits, hydrant replacement and construction efficiency. This process lead to a prioritized list of 134 projects costing $49 million. Forty-nine (49) high priority projects costing $12.8 million were identified providing 90% of the parcels in Orinda with the minimum fire flow of 1000 gpm.

Various funding alternatives to improve the water distribution system were subsequently explored including an increase level of funding from EBMUD. EBMUD had established a level of participation based on a policy that had been developed to address system deficiencies identified from the "Rockridge" fire. The City and MOFD thoroughly explored multiple alternatives and in January 2001 presented very strong justifications for changes in the policy; however, EBMUD in April 2002 reaffirmed the "Rockridge Model" and adopted the attached Policy 3.03 "Community Fire Flow Improvement Program".

The November 2002 Measure N election to increase the fire flow tax from the 6¢ per fire risk factor (size, type of home construction and use of sprinkler systems-copy attached) to 18¢ with the proceeds to be used exclusively for improving the water distribution capabilities within the Orinda Zone of the MOFD was narrowly defeated on a 61.9% vote. The proceeds from the initiative would have funded the 49 highest priority projects.

POTENTIAL CONTRIBUTIONS FROM EBMUD

I have talked with Katy Foulkes, member of the EBMUD Board of Directors and participant on the OFSC and she has confirmed that the EBMUD policy will not likely change in the foreseeable future so that additional financial participation form EBMUD should not be included in the Committee's fiscal analysis. EBMUD would continue to provide financial assistance to upgrade the water distribution system consistent with its policy.

Chief Johnson contacted EBMUD staff in September 2005 and was advised that two projects (Items 32 and 43) had been completed at a cost of $143,000 and that revisions to the 1999 estimated cost placed the remaining projects at $15,293,320 with a local cost of $14,153,025. I have contacted the EBMUD staff to determine whether any additional projects are scheduled within their planning horizon and should receive this information within the next two weeks.

EBMUD

Policy 3.03

EFFECTIVE 09 APR 02

SUPERSEDES NEW

COMMUNITY FIRE FLOW IMPROVEMENT PROGRAM

IT IS THE POLICY OF EAST BAY MUNICIPAL UTILITY DISTRICT TO:

Work with service area communities to support financing and implementation of community-initiated substantial fire flow improvements to the water distribution system where technically and operationally feasible.

Purpose

To provide for improvements to EBMUD's water distribution infrastructure that will meet the local public agencies' goals to increase fire flow, while at the same time continuing to provide high quality water service to the customers.

Responsibility for improvements shall be allocated in accordance with the following criteria:

- EBMUD's cost responsibility will be based on maintaining the as-designed capacity of the pipelines. This will be presumed to be 500 gallons per minute unless other acceptable documentation is available.
- Local agencies or community groups will be responsible for the costs to improve fire flows above the as-designed capacity.
- EBMUD will not, as the only participating agency, undertake system modifications solely to improve fire flow.
- EBMUD will size new pipeline segments to meet current fire flow standards, where feasible, when individual pipeline segments are improved to address infrastructure maintenance or pipeline relocation needs.

Financing

At the request of local public agencies, EBMUD will work with those entities to assess the need for and cost of fire flow improvements. When fire flow improvements within EBMUD's service area are identified as a community priority, EBMUD will help the local communities to finance and implement the local share of fire flow improvements subject to the following conditions:

- Individual communities shall provide EBMUD with a written request to undertake the improvements detailing the public benefits to be derived from implementation of the program.
- Individual communities must establish a dedicated revenue stream that will be adequate to repay the funds advanced by EBMUD over a specified number of years, not to exceed 20 years.
- The community financing method must have local support, which may be evidenced either by implementing a tax via a successful vote of the residents, or by passing a special assessment district procedure. The local community is responsible for any public outreach efforts necessary to ascertain local support.

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- Individual communities must agree to defend any challenges to the revenue methods and to guarantee payment to EBMUD for any fire flow improvements made, including in the event of a successful challenge.

- No fire flow improvements will be funded by EBMUD that have the potential to degrade water quality or impact EBMUD's operational flexibility or ability to provide a reliable, high quality water supply.

- The maximum principal amount of funds advanced by EBMUD and outstanding (dedicated to fire flow improvements) at any one time shall be $25 million.

- EBMUD will carry out or oversee and approve the design and construction of all fire flow improvements.

- EBMUD and the individual community shall enter into an implementation agreement that details all responsibilities and financial arrangements.

- The interest rate on the funds advanced shall be a fixed rate set at 70 percent of the current Bond Buyer Municipal Bond Index. Such rate will be set at the time of the request from the local community for financial assistance, and will remain available at that rate for up to one year to provide adequate time for the local community to establish the funding source to repay the amount financed by EBMUD.

- Financing shall include sufficient contingency to protect EBMUD ratepayers from unforeseen cost increases.

Authority Board Resolution 33300-02, April 9, 2002

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MORAGA FIRE PROTEC... STRICT
SPECIAL TAX MEASU... E
ORDINANCE NO. 80-19

(An Ordinance of the Moraga Fire Protection District
Authorizing a Special Tax for
Fire Protection and Prevention Services)

The Contra Costa County Board of Supervisors as the Board of Directors of the Moraga Fire Protection District of Contra Costa County does ORDAIN as follows:

ARTICLE I. PURPOSE AND INTENT. It is the purpose and intent of this Ordinance to authorize the levy of a tax on parcels of real property on the secured property tax roll of Contra Costa County that are within the Moraga Fire Protection District in order to augment funding for fire protection and prevention services.

This tax is a special tax within the meaning of Section 4 of Article XIIIA of the California Constitution, and this Ordinance is enacted pursuant to Government Code Section 53978 (adopted by Chapter 397 of the Statutes of 1979). Because the burden of this tax falls upon property, this tax also is a property tax, but this tax is not determined according to nor in any manner based upon the value of property; this tax is based, to the extent practical, upon the improvements to each parcel and, specifically, the risk of fire attendant to such improvements. Insofar as not inconsistent with this Ordinance or Chapter 397 of the Statutes of 1979 and insofar as applicable to a property tax that is not based on value, such provisions of the California Revenue and Taxation Code and of Article XIII of the California Constitution as relate to ad valorem property taxes are intended to apply to the collection and administration of this tax (Article IV of this Ordinance), as authorized by Government Code Section 53978 (d).

The revenues raised by this tax are to be used solely for the purposes of obtaining, furnishing, operating, and maintaining fire suppression equipment or apparatus, for paying the salaries and benefits of firefighting personnel, and for such other fire protection or prevention expenses as are deemed necessary by the Moraga Fire Protection District.

ARTICLE II. DEFINITIONS. The following definitions shall apply throughout this Ordinance:

1. "Parcel" means the land and any improvements thereon, designated by an assessor's parcel map and parcel number and carried on the secured property tax roll of Contra Costa County. For purposes of this Ordinance, parcel does not include any land or improvement outside the boundaries of the Moraga Fire Protection District nor any land or improvements owned by any governmental entity.
2. "Improved parcel" means any parcel upon which any combustible improvement exists.
3. "Unimproved parcel" means any parcel except an improved parcel.
4. "Combustible improvement" means any building or other improvement, including all attached parts of such building or other improvement, if any contents or part of the building or other improvement is capable of burning.
5. "Improvement" means those items included within the Revenue and Taxation Code Section 105 definition of improvements, except for 1) fences, poles and walls that are not a part of or connected to a structure and 2) trees and vines.
6. "Fiscal year" means the period of July 1 through the following June 30.
7. "Improved parcel fire risk factor" means the figure calculated for each combustible improvement on an improved parcel, according to the following formula:

Improved parcel fire risk factor = $18 \times C \times \sqrt{A} \times .5S$

Where:

C = the coefficient for the type of construction of the improvement, as specified on page 1 of the Insurance Services Office Guide for Determination of Required Fire Flow, dated December, 1974. The type of construction of the improvement, which will determine the coefficient to be used, is to be determined in accordance with the definitions set forth in the first part of the Appendix to the aforesaid Guide. A copy of the Guide shall be available for public inspection at the administrative headquarters of the District, Moraga, California.

Area = the approximate total square footage of the improvement, including all floors (basements included) and all attached parts of the improvement.

S = 2/ft. for a combustible improvement that does not contain an approved sprinkler system.

S = 1/ft. for a combustible improvement that does contain an approved sprinkler system.

8. "Improved parcel combined fire risk factor" means the total of the improved parcel fire risk factors for all combustible improvements on a parcel.
9. "Unimproved parcel fire risk factor" means the figure calculated for an unimproved parcel according to the following formula:

Unimproved parcel fire risk factor = 400 + (EA x 5/acre)

Where:

EA = the amount of acreage of the parcel that is in excess of 1 acre.

10. "Rate" or "tax rate" means the amount, expressed in cents, which is to be multiplied by either the unimproved parcel fire risk factor or the improved parcel combined fire risk factor to compute the amount of tax on a parcel.
11. "District" means Moraga Fire Protection District.
12. "Component" means any part of the formula for the improved parcel fire risk factor or the unimproved parcel fire risk factor.
13. "Approved sprinkler system" means a sprinkler system conforming with the requirements of the D... Fire Code and any applicable building codes.
14. "Ad valorem prop... taxes" or "ad valorem real property taxes" means taxes on that secured roll real property which is subject to being sold for delinquency of such taxes. "Ad valorem property taxes" or "ad valorem real property taxes", therefore includes taxes based on the March 1, 1975 value of real property and taxes based on the value of real property at date of change of ownership, completion of new construction, or purchase where such has occurred after March 1, 1975.
15. "Taxpayer" means the assessee of the property as shown on the secured tax roll and, if different than the assessee, the person or legal entity actually paying the taxes.

ARTICLE III. SETTING OF TAX RATE; COMPUTATION AND LEVY OF TAXES.

1. Setting of the Tax Rate.

The District's Board of Fire Commissioners, prior to each July 1st, shall recommend to the District's Board of Directors the tax rate to be set for the next fiscal year. Thereafter, at a regularly scheduled meeting held prior to the end of July, the Board of Directors of the Moraga Fire Protection District shall set the rate which shall be applied to determine the taxes for the next fiscal year. The rate shall be in cents and shall be determined to the closest one-tenth of a cent (e.g., a rate of 4.5 cents) that the Board of Directors of the District deems appropriate to achieve the purposes of this Ordinance; provided, however, that said rate shall not exceed 6.0 cents unless an increase in such maximum rate is approved by two-thirds of the voters voting on such an increase in a district-wide election.

2. Computation of Taxes.

a. Improved parcels: the tax on each improved parcel shall be the amount, in dollars and cents, determined by multiplying the rate times the improved parcel combined fire risk factor for the parcel.

b. Unimproved parcels: the tax on each unimproved parcel shall be the amount, in dollars and cents, determined by multiplying the rate times the unimproved parcel fire risk factor for the parcel.

3. Levy of Taxes.

Prior to the end of each July, the District's Board of Directors shall levy taxes upon the parcels in the Moraga Fire Protection District for the then current fiscal year by setting the rate and computing the taxes in accordance with Article III, 1 and 2, above. Taxes levied on each parcel pursuant to this Section shall be a charge upon the parcel and shall be due and collectible as set forth in Article IV, below. A complete listing of the amount of taxes on each parcel shall be maintained and be available for public inspection at the District's administrative headquarters during the remainder of the fiscal year for which such taxes are levied.

ARTICLE IV. COLLECTION AND ADMINISTRATION.

1. Taxes as Liens Against the Property.

The amount of taxes for each parcel each year shall constitute a lien on such property, in accordance with Revenue and Taxation Code Section 2187, and shall have the same effect as an ad valorem real property tax lien until fully paid.

2. Collection.

The taxes on each parcel shall be billed on the secured roll tax bills for ad valorem property taxes and shall be due the Moraga Fire Protection District. Insofar as feasible and insofar as not inconsistent with this Ordinance, the taxes are to be collected by Contra Costa County on behalf of the District in the same manner in which the County collects secured roll ad valorem property taxes. Insofar as feasible and insofar as not inconsistent with this Ordinance, the times and procedures regarding exemptions, due dates, installment payments, corrections, cancellations, refunds, penalties, liens, and collections for secured roll ad valorem property taxes shall be applicable to the collection of this tax. Notwithstanding anything to the contrary in the foregoing, as to this tax: 1) the secured roll tax bills shall be the only notices required for this tax, 2) the appeal procedures set forth hereinbelow shall apply in lieu of appeals to the Assessment Appeals Board, and 3) the homeowners and veterans exemptions are not applicable, because such exemptions are a function of dollar amount of value and this tax is a function of square footage or acreage.

3. Publication of Notice of Time Limit for Filing Appeals.

Within 20 days after the bills for the first installment of secured roll taxes have been mailed, the Board of Fire Commissioners of the Moraga Fire Protection District shall cause a notice of right to appeal to be published once a week for two weeks in a newspaper of general circulation throughout the District. Such notice shall be headed "Notice of Appeals Period for Moraga Fire Protection District Special Tax for Fire Protection and Prevention Services" and shall contain the precise wording of all of Article V herein-below.

4. Costs of Administration by County.

The reasonable costs incurred by the County officers collecting and administering this tax shall be deducted from the collected taxes before remittal of the balance to the District.

ARTICLE V. APPEALS.

1. Applications for Reduction of Taxes; Time Limit for Filing; Notice of Hearing; Payment of Taxes Pending Decision; Refunds.

Appeals of the amount of the special tax for fire protection and prevention services for a parcel, or of any component of the tax, must be made by written application of the taxpayer to the District's Board of Fire Commissioners and must be received at the District's administrative headquarters, Moraga, California, no later than the 31st of December following receipt of the tax bill for the first installment of secured roll taxes.

(CONTINUED)

Johnston, Jim

From: Kirkpatrick, William [wkirkpat@ebmud.com]
Sent: Wednesday, January 12, 2005 1:22 PM
To: Johnston, Jim
Cc: WLindsay@ci.orinda.ca.us
Subject: RE: Updated Orinda Fire Flow Improvements Cost Estimate

Update: The bottom line values below are correct but, please note that in my equations, I omitted adding the cost of the fire hydrants back in.

Bill

From: Kirkpatrick, William
Sent: Wednesday, January 12, 2005 12:41 PM
To: jjohnston@mofd.org
Cc: WLindsay@ci.orinda.ca.us
Subject: Updated Orinda Fire Flow Improvements Cost Estimate

Jim, the following is the cost update you requested.

Total Cost per Agreement in May 2002 dollars: $13,840,807 less costs for the new Hydrants @ $329,977 = $13,510,830 -$1,351,083 (EBMUD share) = $12,489,724 (Agreement Attachment B).

Update of the costs to December 2004 ———: $15,319,230 less costs for the new Hydrants @ $370.995 = $14,948,235 + $6,013 interest* on 90% of $196,000 (Engineering study) - $1,494,824 (EBMUD share) =

$13,830,419 by Orinda and MOFD. This value includes cost reductions for Master Plan projects #32 and #43 which were constructed by EBMUD since 2002, $179,000. (Snowberry Crt. and Sunrise Hill Road).

Please call if you have any questions.

Bill

* Year 2003 and 2004 interest per the Local Agency Investment Fund published rate (with 2004 approximated). Rates use were 1.735% and 1.645% respectively.

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City of Oakland Bond Funds	$1,145,000
Rockridge Special Assessment District	$886,000
East Bay Municipal Utility District	$511,000

The RSAD was formed specifically for this purpose and each parcel is assessed $135 per household per year for 30 years via the county tax rolls.

Orinda Fire Flow Improvements - The Moraga-Orinda Fire District (MOFD), the City of Orinda and the District have been working together during the past few years to address fire flow improvements in Orinda. These agencies formed the OFSC and two elected members of each agency form its membership. In mid-2000, the staff of these agencies presented the Orinda Fire Flow Draft Master Plan and the Draft Moraga-Orinda Fire Prevention Master Plan Outline to the OFSC. These plans were based on a fire flow goal of 2,250 gpm (from 3 hydrants). The Orinda Fire Flow Draft Master Plan prioritized $50 million in water distribution system improvements, mostly pipeline replacements. This is viewed as the long-term master plan for improvements in Orinda.

Based on affordability issues, a reduced scope project was identified. About 30 percent of the pipe in the master plan would be installed at a cost of $13 million. Applying the same Rockridge flow-rate based cost model to Orinda, the District's proportionate share of this smaller project was estimated to be approximately $480,000. Upon subsequent discussions, the District agreed to refine the calculations and assumptions (within the current cost-sharing methodology) resulting in an estimated contribution of $1.26 million. The District's proposed financial contribution is based on the responsibility to restore the water system to the as-designed residential fire flow of 500 gpm. The local fire agency and/or community would be responsible for the costs to provide improved flows above 500 gpm.

However, the City of Orinda and the MOFD have proposed an alternative method for calculation of the District's share of the project cost. They have suggested that the pipelines have a definable life span, and that the community share would represent a reimbursement to the District for the remaining useful life of the pipes replaced early. This would result in a District share of approximately $6.7 million. This concept has several fallacies in logic:

- The District practice is to replace pipelines for maintenance reasons (when it is more cost effective to replace them than to repair them), not based on age. A properly installed pipeline has an indefinite life. Any calculation based on some assumed life span of the pipes is meaningless.
- The District has a model to predict future pipeline replacement needs, based on maintenance history statistics. This model predicts that 1.5-2.0 miles of pipe will need to be replaced in Orinda in the next 25 years. The proposed fire flow project would replace 10.8 miles of pipe.

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Thus, 8.8-9.3 miles of pipe would be replaced that do not need to be replaced and are not cost-effective to replace. This cannot be construed as an economic benefit to the District.

- The methodology includes no consideration of the time value of money. Even if the other conceptual problems did not exist, ignoring this factor overstates the District share by nearly 100 percent.

These comments have been communicated to Orinda and MOFD staff.

Various other District contribution levels have been suggested by Orinda and the MOFD. However, these levels of contribution would not be consistent with past practice, i.e., the Rockridge cost model.

Kensington Fire Flow Improvements - In December 1999, the Kensington Fire Protection District (KFPD) adopted the Kensington Water System Improvements Master Plan to upgrade the water supply system in Kensington through a five-year series of projects estimated at a total cost of $1 million. Their community goal is to increase fire flows to 4,500 gpm at the urban-wildland interface. On August 2000, the KFPD Board entered into an agreement with the District to begin design and construction of the first phase at an estimated cost of $400,000. The KPFD is funding these improvements. However, the KFPD and the District have agreed to reserve for further discussion the possibility that the parties may consider and consent to a cost-sharing proposal that would be retroactive.

Design of the first phase is in progress. The District will propose application of the Rockridge cost model for these improvements. At this time, and considering the Rockridge model, only one hydrant location in all of Kensington may qualify for cost sharing. This would amount to only a few percent of the total cost.

ALTERNATIVES

The alternative to the current methodology for cost sharing on fire flow improvement projects is to reconsider the current practice and change the policy. This is an option available to the Board, but is not recommended for the following reasons:

- The 1994 infrastructure studies estimated a cost of $800 million to upgrade fire flows District-wide to 1,000 gpm and to 1,500gpm in the area affected by the 1991 Oakland Hills fire. The costs would be significantly greater if higher fire flow goals, as has been suggested by Orinda, were established District-wide. A commitment to go beyond the current practice in one community would likely result in significant costs in future years that have not been budgeted and would result in significant rate increases.
- The District policy is that it will pay for fire flow upgrades when pipes are replaced for system integrity reasons, but not solely to improve fire flows. This is consistent with water

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industry practices nationwide and with the California Public Utility Commission requirements for private water systems.

- Establishment of fire flow goals is the responsibility of local fire departments, and the goals vary by community. The current methodology for cost sharing establishes a consistent base-line District cost responsibility and leaves it up to the communities to decide how much investment they want to make beyond that base-line.
- New developments that connect to the District system have already paid (via System Capacity Charges and home prices) for fire flow capacities that meet current fire department criteria. Equity issues must be considered in requesting these same customers to pay via water rates for upgrades to other communities.
- The current policy formed the basis for cost sharing in Rockridge. A revised approach would be inconsistent with that cost-sharing methodology and could result in re-opening of the cost allocation discussions with the Rockridge community and the City of Oakland.

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Appendix G

Report of the Finance Subcommittee

Finance Subcommittee Report to the
City of Orinda Infrastructure Committee

The Facts

1. The assessed value of the property in the city is $3,793,148,022 with 92.4% coming from single family residential;
2. Of the 7,204 parcels in the city, 88.7% are single family residential, 6.6% are vacant;
3. The median single family home is Orinda has an assessed value of $458,424, i.e. half of the home in Orinda have an assessed value of under that amount and half are over that amount;
4. Roughly 25% of the homes in Orinda have an assessed value of under $200,000;
5. Roughly 15% of the homes in Orinda have an assessed value of over $1,000,000;
6. Under Proposition 13, the assessed value of homes that do not change owners or undergo significant modifications will grow at only 2% and the base property tax rate is 1%;
7. Orinda's assessed valuation has increased at a rate of:
    a. 6.40% over the last 15 years;
    b. 6.64% over the last 10 years;
    c. 7.77% over the last 5 years;

The Current Situation

Conclusion #1: Roughly $150,000,000 is needed to address the city's roads, drains, and fire flow problems;

Conclusion #2: Existing resources do not exist within the City's budget to solve the problem and while some reallocation may be possible it would come at the detriment of public safety (parks and recreation programs recover nearly 75% of their cost);

Conclusion #3: Even if the city could reallocate existing resources without harming public safety, the amount of money that could be reallocated is grossly insufficient to solve the problem, and would be best used for future maintenance;

Conclusion #4: While some opportunities may exist to raise fees (i.e. fees that would not require voter approval such as garbage franchise fees, development fees, etc.), that revenue should be reserved for future maintenance;

Conclusion #5: The City does a good job of applying for and winning grants and must continue to do so in the future, particularly for roads of

regional significance (Camino Pablo, Moraga Way & Rheem Blvd.) and downtown/Village beautification projects;

Conclusion #6: The City's ability to continue to win grant funding will be enhanced if the city raises revenue through a ballot measure. While this may seem ironic, grant money invariably requires a local match so that the more money we raise locally, the more money we may be able to win from county, regional, state and federal sources;

Conclusion #7: The city should continue to maintain a healthy reserve as that money provides the city with interest income (some of which goes toward maintenance), supports the City's outstanding credit rating (which will reduce the cost of any future borrowing by the city), and is effectively a "self-insurance" fund for major catastrophes within the city (including major road and drain failures);

Conclusion #8: The city should maintain a prudent reserve of 6 million dollars. The current level is $8.2 million. The subcommittee recommends that the reserve be gradually reduced to 6 million and the funds be used to increase infrastructure improvements and maintenance;

Conclusion #9: While the water pipes belong to and are the property of EBMUD, any program to accelerate their replacement with pipes that meet today's standards will require local funding, therefore the city and the fire district must negotiate an agreement with EBMUD so that EBMUD pays its fair share of the cost of any improvements to the water system in the City;

Conclusion #10: Since incorporation the city has made steady and prudent progress toward addressing some of the inequities of its pre-incorporation history including higher development standards, dramatically improved public library services, improved public safety, downtown/village beautification, and is currently building city offices (the city has been operating out of trailers) on a previously unusable lot. In addition, since incorporation, the city's schools have asked for and received support from the voters for additional funding. While we may disagree with the prioritization, ultimately these projects needed to be undertaken by the newly incorporated city and make addressing the city's infrastructure today an unequivocal priority.

Conclusion #11: The problem is citywide and while it might be possible to attack the problem at a smaller level, every effort should be made to address the problem at the city level first;

Conclusion #12: Coordination of work may yield cost efficiencies;

Conclusion #13: A significant level of work in the near term may reduce the cost of maintenance in the long term;

Conclusion #14: There are hidden costs to the citizens of Orinda due to the current road, drain and fire flow conditions in the city (e.g. higher car maintenance/replacement costs);

Moving Forward

Conclusion #15: As noted above, and in the Stone & Youngberg analysis included in this report, the city's existing resources and non-voter approved resources are inadequate to make a significant contribution to addressing the current problem, therefore it is incumbent upon the city to seek voter approval for additional resources to address the city's roads, drains and water flow problem;

Conclusion #16: While a myriad of possibilities exist, the only realistic possibilities available in the near term to Orinda for a citywide program are:

1. A General Obligation Bond Measure
2. A city-wide Benefit Assessment District
3. A parcel tax
4. A Citywide Mello-Roos District
5. A general tax measure for all city services
6. A fire flow measure sponsored by the fire district similar to the one that previously failed (would only address the fire flow issue);

Others taxes, such as a local sales tax increase or a hotel/motel tax will not work in Orinda;

Conclusion #17: With one important caveat (the 2/3 vote hurdle) a General Obligation Bond is the best approach for the city of Orinda today as it is the most cost-efficient (no additional benefit engineering cost, market efficiency, leveragability, immediacy), and appropriately restricted source (restricted to capital projects, voter proscribed projects, and available for use on all three problems) of funding;

Conclusion #18: In right-sizing the bond measure the committee and city should consider:

1. A robust calculation of the cost of the projects (including inflation, contingencies, and capital maintenance projects);
2. The need to deliver the projects in a reasonably foreseeable time horizon (benefits should come quickly, probably under 10 years);
3. The ability of the city to manage an increase in road/drain projects (ten fold increase);
4. Maintaining mobility in the city (i.e. we all have to get to and from our homes);
5. Maintaining the city's outstanding credit rating;
6. Voter tolerance for the overall bond amount and the required annual debt service;
7. Making visible and appreciable improvements throughout the city;
8. Other, if any, foreseeable capital needs of the city/other jurisdictions;
9. Other competing/complementary ballot measures;

Conclusion #19: Solving the whole problem at once is impossible and may therefore require multiple measures over time (e.g. a Bond Measure this year and another in the future or a fire flow measure and/or a parcel tax in the future);

Conclusion #20: While extraordinary steps may need to be taken in order to win approval of the measure, a categorical exemption/deferral for seniors and/or low income seniors should be a very low priority as Proposition 13 includes a *de-facto* reduction in the cost for seniors/very long term residents in that about 25% of the homes in the city have an assessed value of under $200,000;

Conclusion #21: The minimum amount the city should consider is $20,000,000 and the maximum is $75,000,000;

- While $20,000,000 may seem too small, it would allow the city to address the most severe road, drain and fire flow problems and demonstrate the city's available to perform, enhancing the possibility of a future measure. Under this scenario, prioritization is the most demanding;
- While $75,000,000 may seem large, it is what the city could reasonably spend over a reasonable time frame and it would make very visible and appreciable improvements, forestalling the need to return to the voters with an additional measure. Under this scenario, prioritization is almost unnecessary;

Conclusion #22: Using reasonable assumptions (e.g. 6% growth rate in the assessed value) the average and highest tax rate per $100,000 of assessed value for the two extremes are (please note that roughly 11% of the homes in Orinda have an assessed value of no more than that):

- For $20,000,000, $16.00 and $28.00 in 2014, at the median the average cost over the 30 life of the bond would be $74.00/year or about $.20/day;
- For $40,000,000, $27.00 and $47.00 in 2014, at the median the average cost over the 30 life of the bond would be $124.00/year or about $.34/day;
- For $60,000,000, $34.00 and $58.00 in 2014, at the median the average cost over the 30 life of the bond would be $157.00/year or about $.43/day;
- For $75,000,000, $43.00 and $75.00 in 2014, at the median the average cost over the 30 life of the bond would be $196.00/year or about $.54/day;

Conclusion #23: The committee should consider the poll results along with it own deliberations, and the four community meetings in determining if, when and how much of a GO Bond Measure to propose.

Conclusion #24: The Infrastructure Committee cannot afford to wait to see the results of the poll and should use the January meeting to scope out criteria for prioritization should less than $75,000,000 be available;

Appendix H

Report of Stone & Youngberg, Financial Advisor to the Infrastructure Committee

Orinda Infrastructure Committee

Final Report

June 23, 2006

Table of Contents

I. Overview

Orinda Financial Overview

- Not a "Full Service City"
  - Fire, utilities provided by other agencies
  - Contract with County for police services
- General Fund Revenue Observations
  - Property tax revenues disproportionately high
    - One-third of General Fund Revenue
    - "Average" city: 10%
  - Sales tax revenues disproportionately low
    - 10% of General Fund Revenue
    - "Average" city: 25%
  - No hotel tax, utility user tax
- General Fund Expenditure Observations
  - General management and police services at about average
  - Park and recreation relatively high but 75% offset by fees

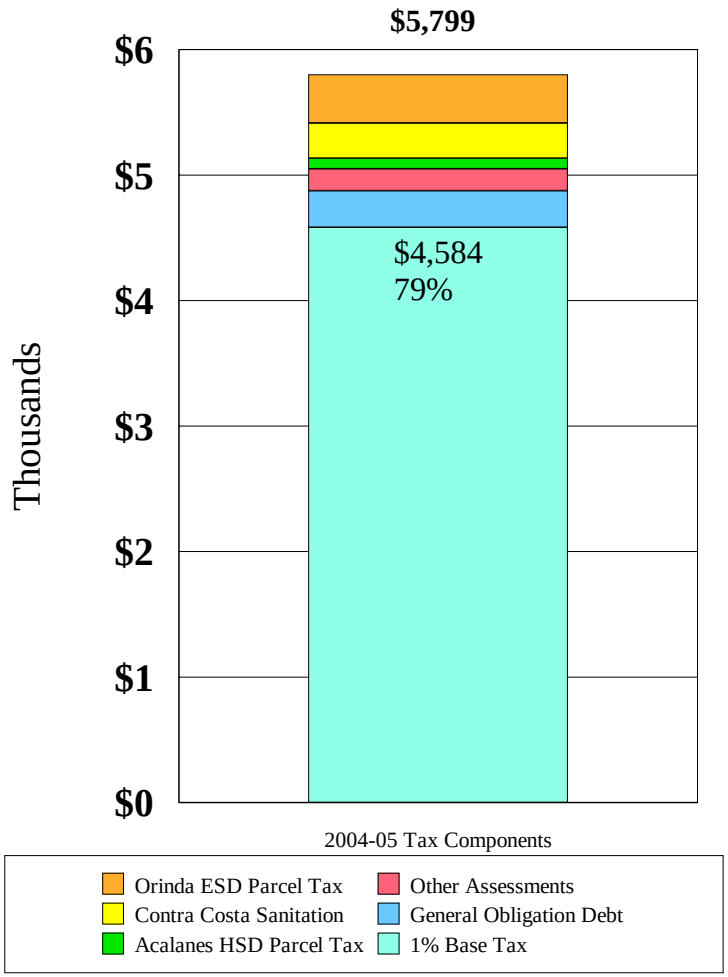
Property Tax Base Information

Limited Property Tax Revenue for Local Government

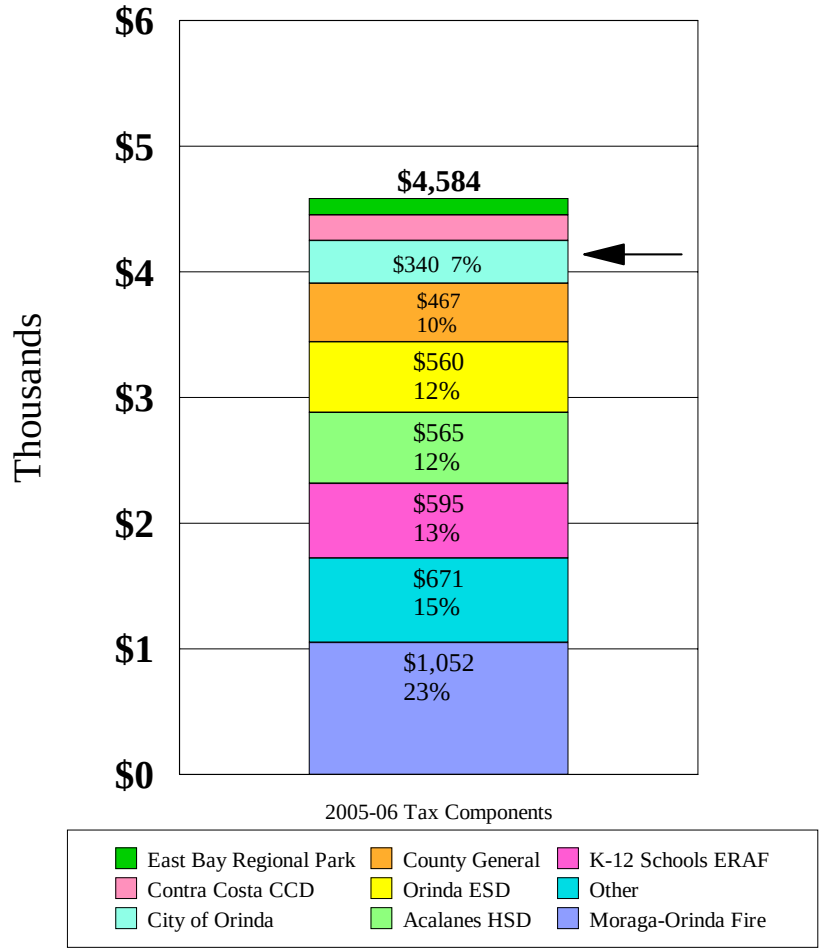
Property Tax Bill Break-Out

Median Orinda Residence - $458,427 Assessed Value

Total Taxes & levies

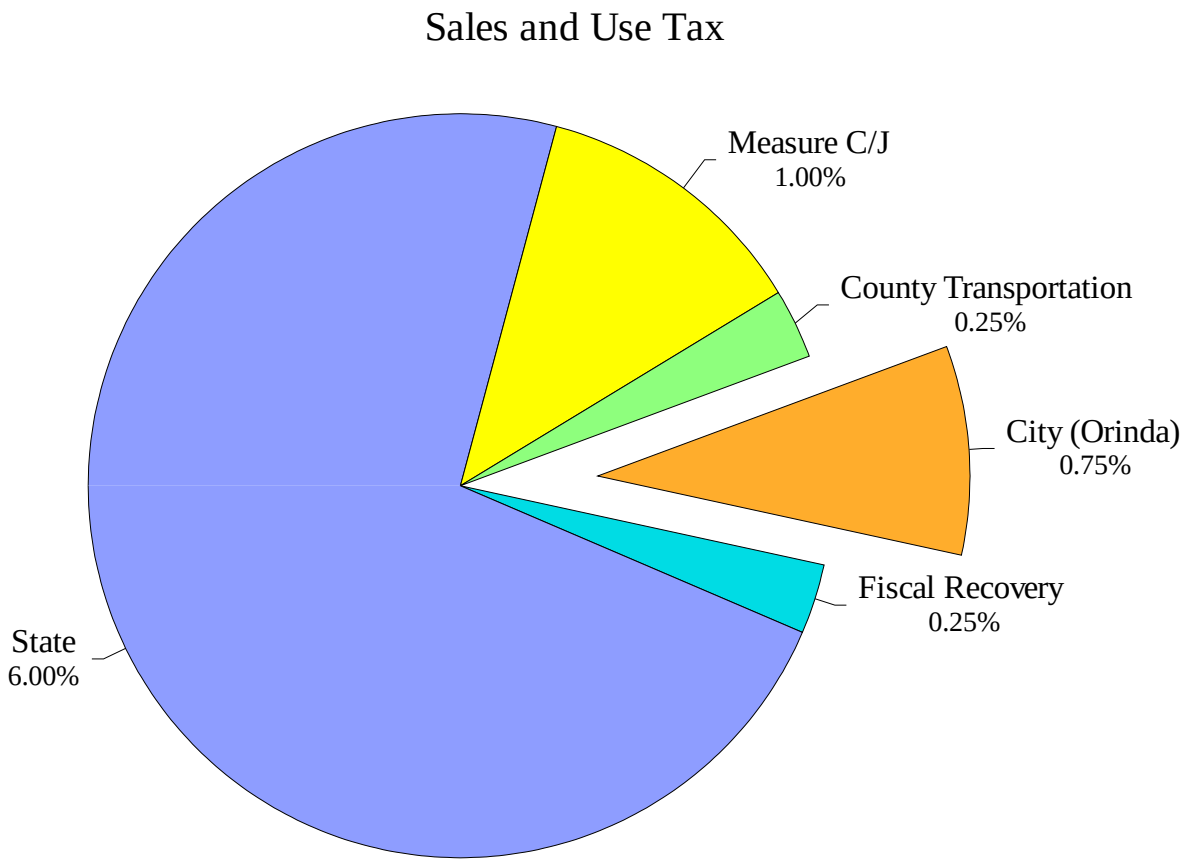


Breakdown of 1% Base Property Tax



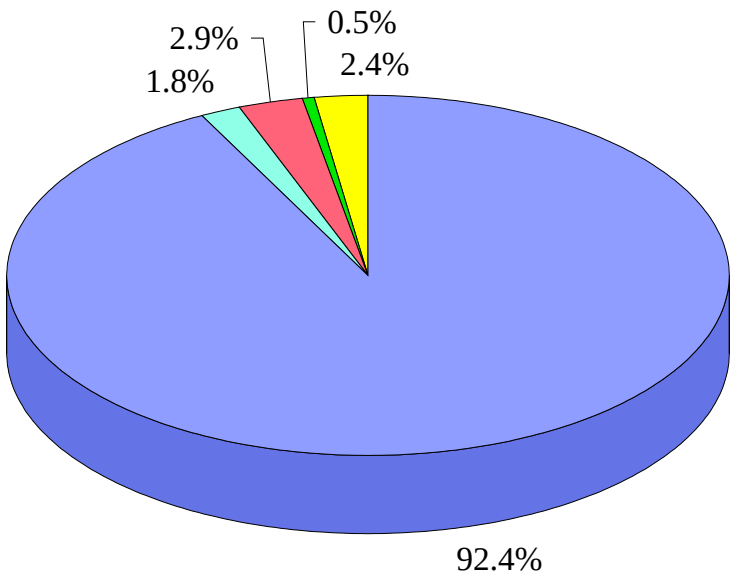
Limited Sales Tax Revenue for Local Government

Breakdown of the 8.25% Contra Costa County Sales & Use Tax



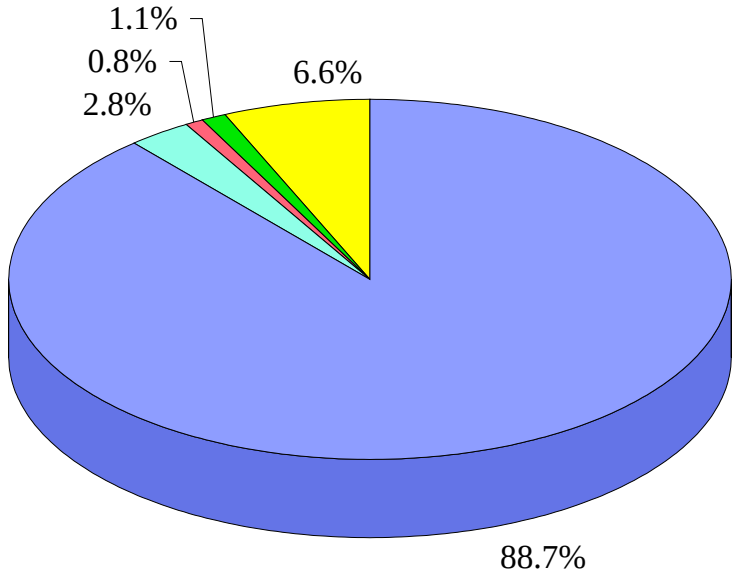
City of Orinda
Land Use Distribution By Assessed Value and Parcel

2005-06 Distribution By Assessed Valuation



$3,793,148,022 Assessed Value

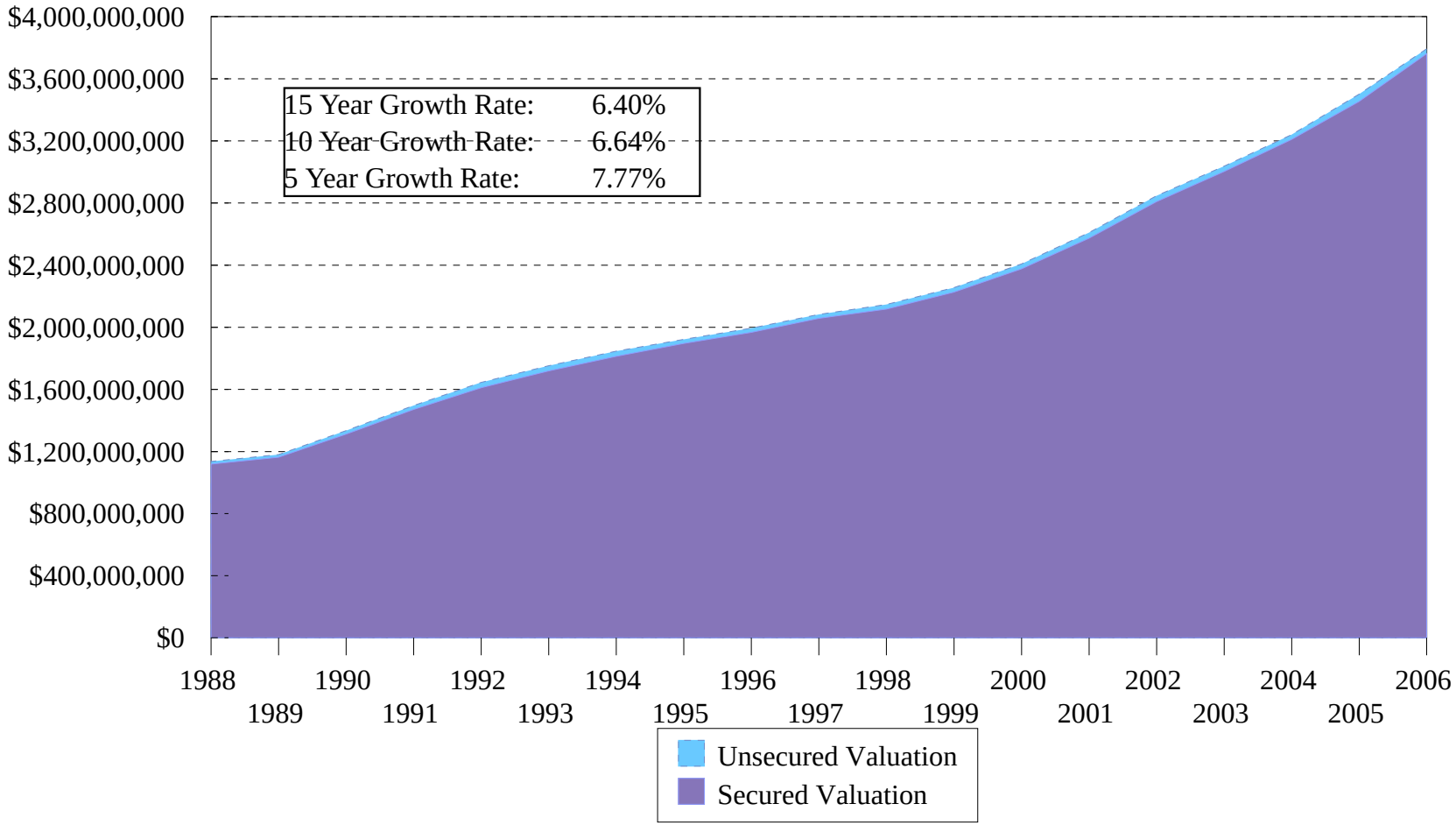
2005-06 Distribution By Number of Parcels



7,204 Parcels

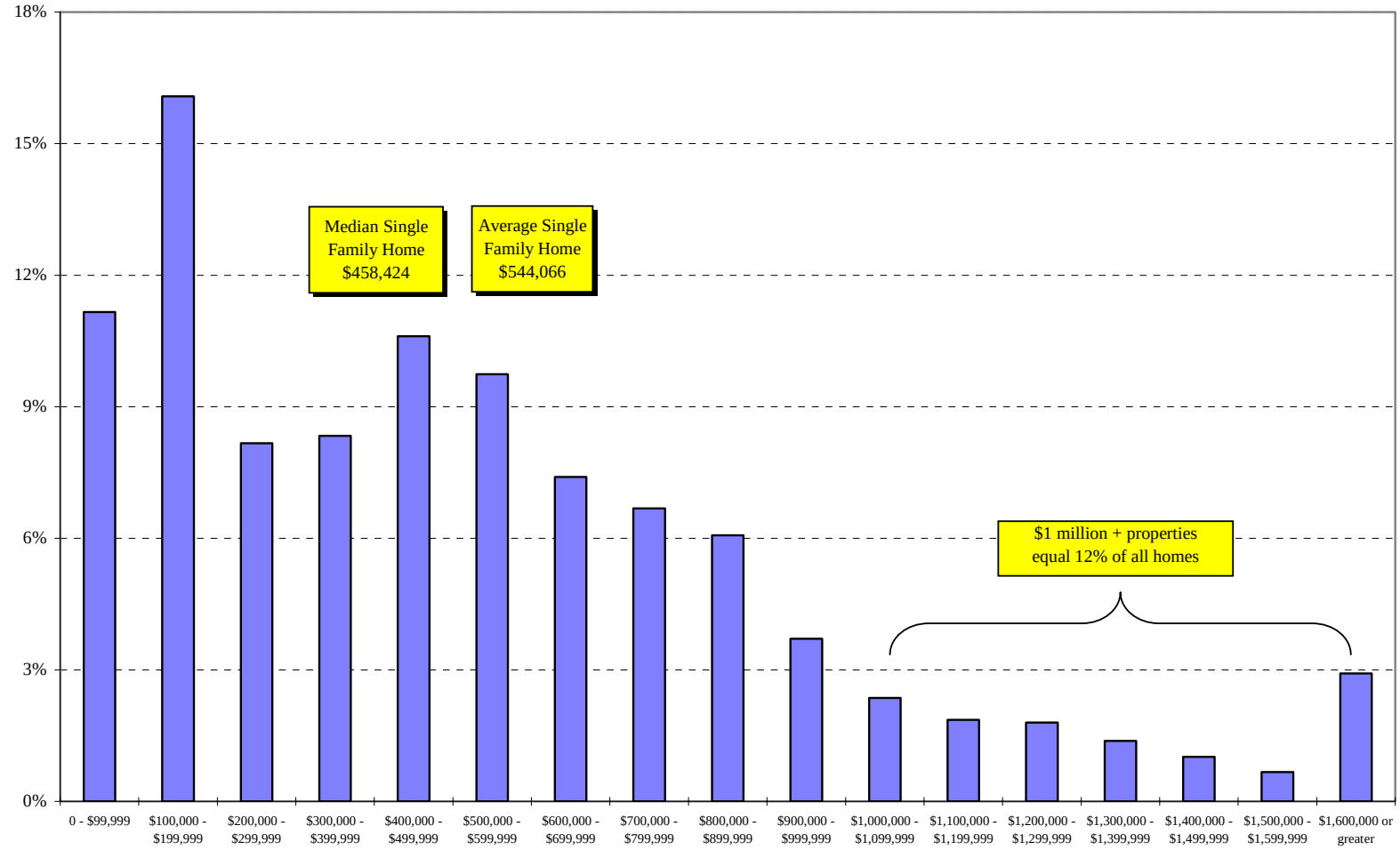
Single Family **Commercial** **Vacant**
Other Residential **Other**

City of Orinda
Assessed Value History

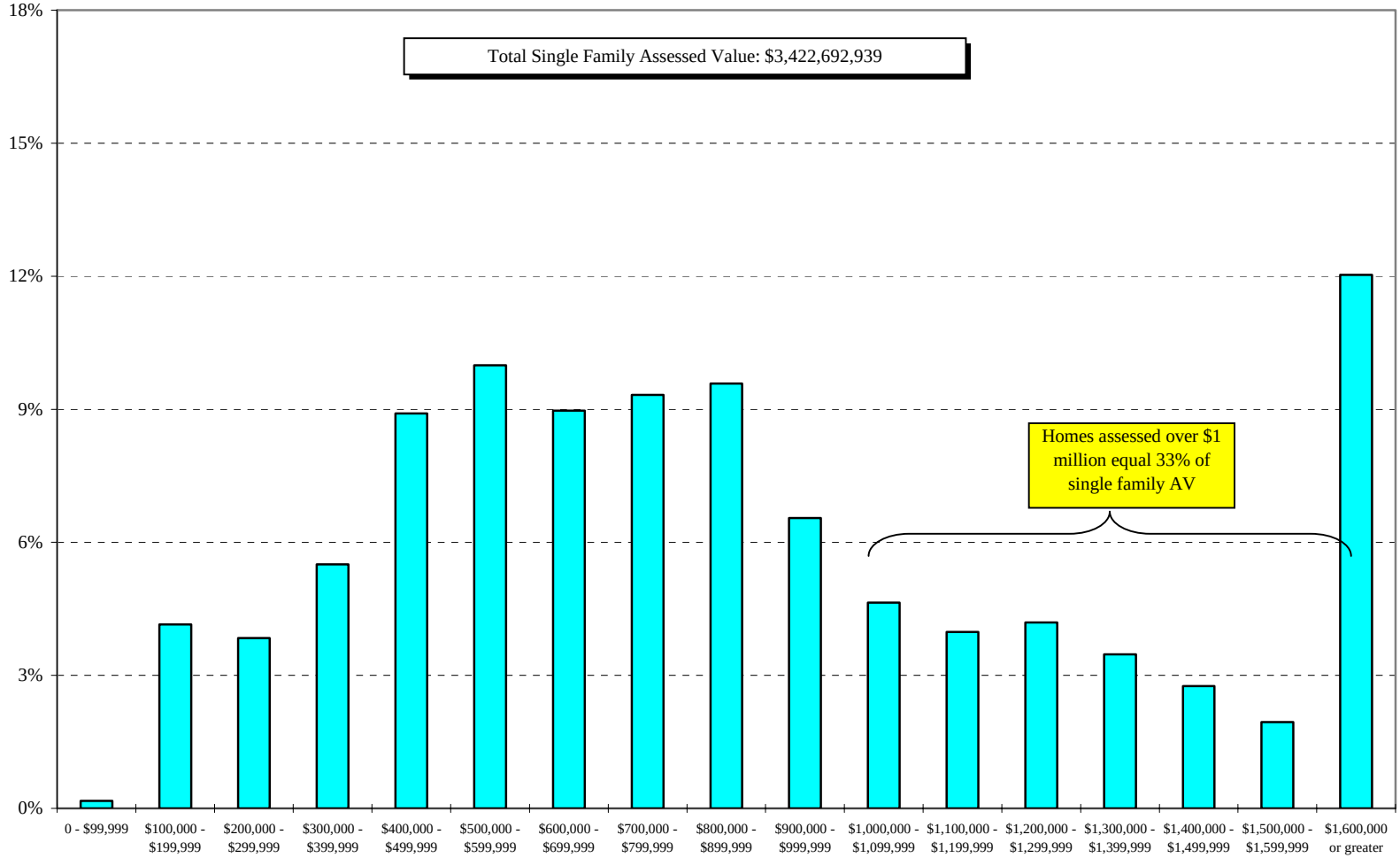


Source: California Municipal Statistics, Inc. Graph prepared by Stone & Youngberg LLC

City of Orinda
Distribution of Single Family Assessed Valuations
Fiscal Year 2005-06



City of Orinda
Allocation of Single Family Assessed Valuation
Fiscal Year 2005-06



% of Single Family Parcels (6,388)

2005-06 Assessed Valuation of Single Family Homes

II. General Fund Analysis

Fiscal Analysis

Key Financial Assumptions

- Five-Year Forecast Horizon
- Maintain Minimum $6 Million General Fund Balance
  - Long established financial policy
  - Part of City's rating evaluation
- Draw on General Fund Over 5 Years Until $6 Million Fund Balance is Reached
  - Current balance: $8.2 million +/-
  - Create stable funding for planning
- City Pay As You Go Program to be Supplemented by:
  - MOFD fire flow tax
  - EBMUD water line improvements on "as needed" basis
  - Bond proceeds

Fiscal Analysis

Major Revenue Assumptions

- Utilize Draft FY2006/07 Budget
- Property Tax Revenue → 6% Annual Base Increase
  - Higher when Montanera/Pulte projects develop
- Montanera/Pulte Developments
  - No revenue impact until FY2009/10
  - Property tax revenue phases in through buildout
    - » Montanera: 5 years (through FY2013/14)
    - » Pulte: 2 years (through FY2010/11)
  - Portion of Playfields/Art & Garden Center funded by user fees
  - Montanera restricted reserve offsets costs through buildout
- Other City Revenues Increase by Below Average Rates

Fiscal Analysis

Major Expenditure Assumptions

- Most City Department Costs Increase at 5-Year Average
- Public Works, Planning Departments
  - FY 2006/7 budget: 8%, increase rate drops to 5% in 5 years
  - Potential volatility in Public Works budget due to storm-related work
- Police Department
  - FY 2006/7 budget: 10%, increase rate drops to 6% in 5 years
  - Assumes retirement costs stabilize with improved retirement system earnings
  - Assumes no additional officers hired
- Park and Recreation Department
  - Playfields online by FY2008/09
    - » Net operating need after fees: $185,000 (current dollars)
  - Art & Garden Center online FY2013/14
    - » Net operating need after fees: $165,000 (current dollars)
    - » Outside 5-year forecast

City of Orinda
Projection Assumptions

Revenues	Budget 2007	Projected 2008	Projected 2009	Projected 2010	Projected 2011	3-Year Average Percentage Change (2003-2006)
Property Tax Growth	--	6.0%	6.0%	9.1%	8.9%	6.8%
Property Tax/VLF Growth		6.0%	6.0%	6.0%	6.0%	9.0%
ERAF	No	No	No	No	No	
Sales Tax Growth		4.5%	4.5%	4.5%	4.5%	8.9%
Franchise Tax Growth	3.0%	3.0%	3.0%	3.0%	3.0%	5.6%
Property Transfer Tax Incr.		5.0%	5.0%	5.0%	5.0%	14.7%
Rent		2.0%	2.0%	2.0%	2.0%	-8.1%
Earnings Rate	4.5%	4.5%	4.5%	4.5%	4.5%	
-Adjustment for GF $ loaned to CIP		1,500,000	1,500,000	1,500,000	1,500,000	
Recreation Fee Growth		3.0%	3.0%	3.0%	3.0%	5.5%
Planning Dept. Fee Growth		0.0%	0.0%	0.0%	0.0%	
Service Fee Growth		3.5%	3.5%	3.5%	3.5%	9.5%
Homeowners Tax Reimb.		2.0%	2.0%	2.0%	2.0%	-0.3%
VLF Growth		2.0%	2.0%	2.0%	2.0%	
Montanera Endowment Balance	1,533,750	1,602,769	1,674,893	1,430,323	1,161,949	
Draw on Montanera Endowment	-	-	210,142	218,547	227,289	
Measure C Return to Source	3.0%	3.7%	4.2%	4.2%	4.2%	
Gas Tax (to roads)	2.0%	2.0%	2.0%	2.0%	2.0%	

Expenditures

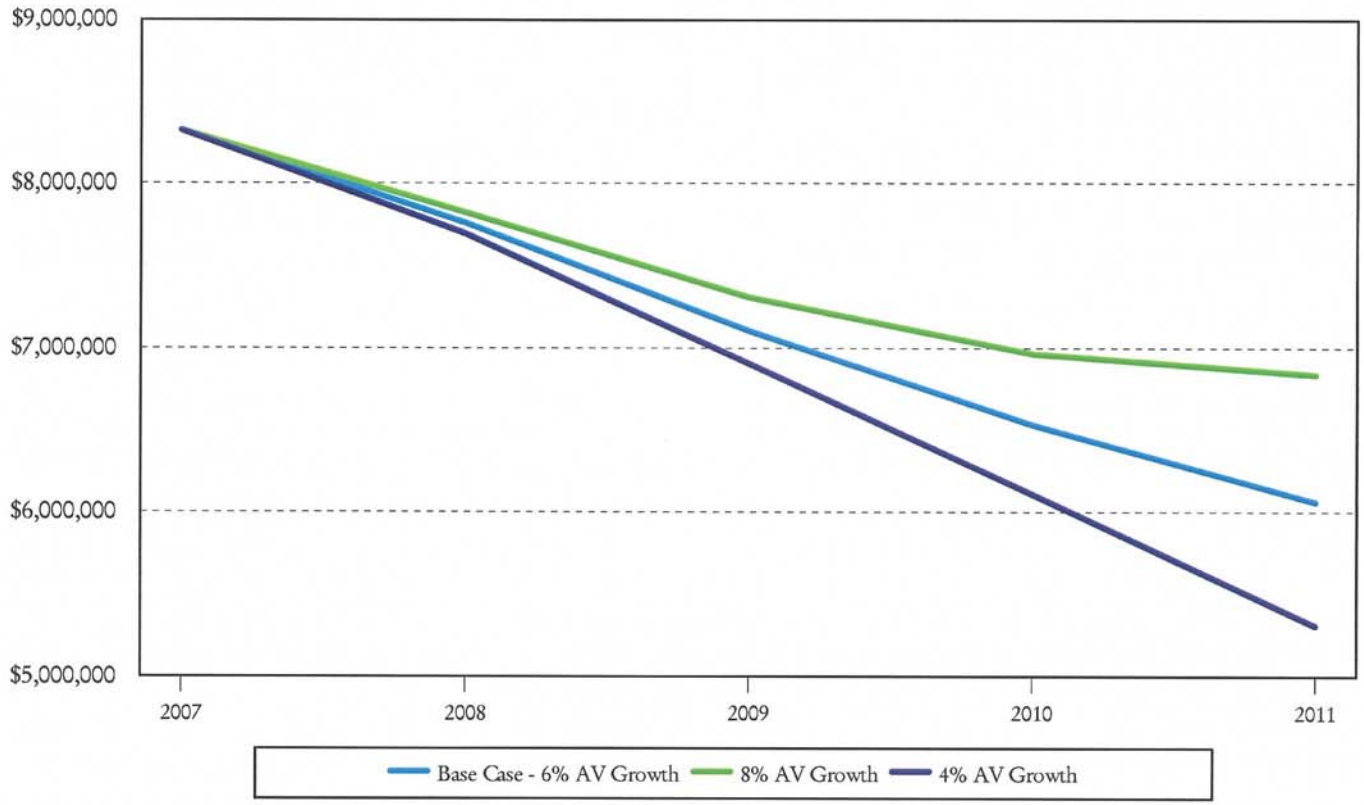
City management		3.0%	3.0%	3.0%	3.0%	3.0%
Administrative services		3.0%	3.0%	3.0%	3.0%	0.9%
Engineering		5.0%	5.0%	5.0%	5.0%	4.8%
Public works		8.0%	7.0%	6.0%	5.0%	8.2%
Planning Department		7.0%	6.0%	5.0%	5.0%	6.7%
Police services	9.0%	8.0%	7.0%	6.0%	6.0%	12.0%
Additional Police personnel	0.0	0.0	0.0	0.0	0.0	
Cost per police officer	163,000	176,040	188,363	199,665	211,644	
Parks and Rec.		4.0%	4.0%	4.0%	4.0%	3.8%
Playfields/A&G Ctr/Gateway			210,142	218,547	227,289	

City of Orinda
Summary of General Fund Results

	Budget 2007	Projected 2008	Projected 2009	Projected 2010	Projected 2011
Operating Summary					
Total Revenues	$ 10,021,789	$ 10,466,599	$ 11,101,589	$ 11,665,849	$ 12,267,283
Total Expenditures	9,191,476	10,321,893	11,060,379	11,571,155	12,094,828
Revenues over (under) expenditures	830,313	144,706	41,210	94,694	172,455
Total General Fund Transfers	(732,355)	(712,683)	(690,572)	(667,616)	(643,780)
Net change in fund balances	104,399	(567,977)	(649,363)	(572,922)	(471,325)
Fund balance - end of year	8,321,645	7,753,668	7,104,306	6,531,384	6,060,059
Infrastructure Summary					
"Transit-Related" Funds					
Measure C/J Return to Source	362,634	376,205	392,093	408,703	426,065
Gas Tax	305,012	311,112	317,334	323,681	330,154
Sub-Total "Transit" Funds	667,645	687,317	709,428	732,384	756,220
General Fund Transfers					
Total General Fund Transfers	732,355	712,683	690,572	667,616	643,780
Total Resources for PMP	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000

General Fund Reserve

Under Varying Property Tax Growth Scenarios
(All other assumptions held constant)



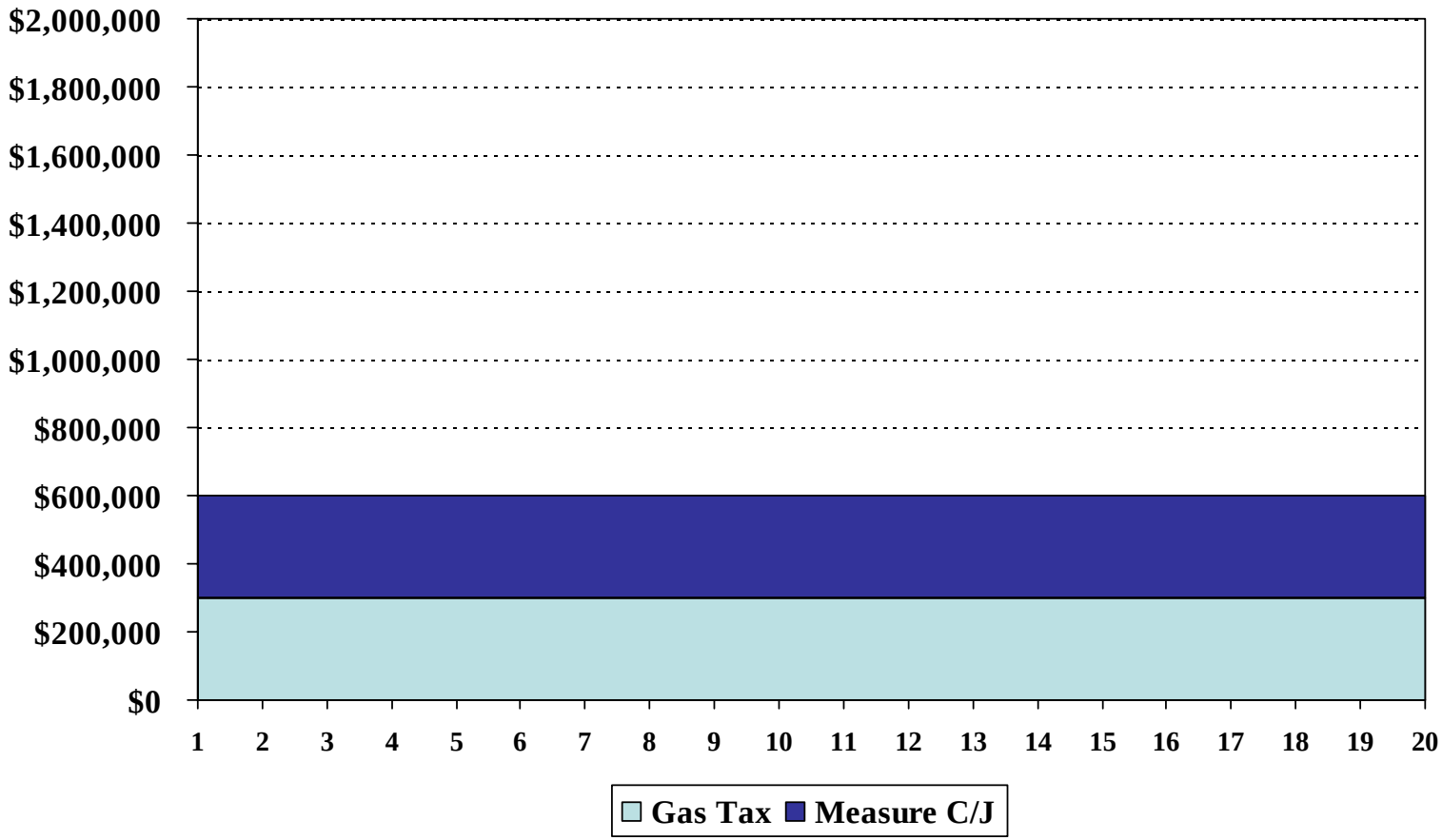
Note: Baseline growth trend, before the addition of Montanera and Pulte assessed values.

PROJECTED GENERAL FUND RESULTS

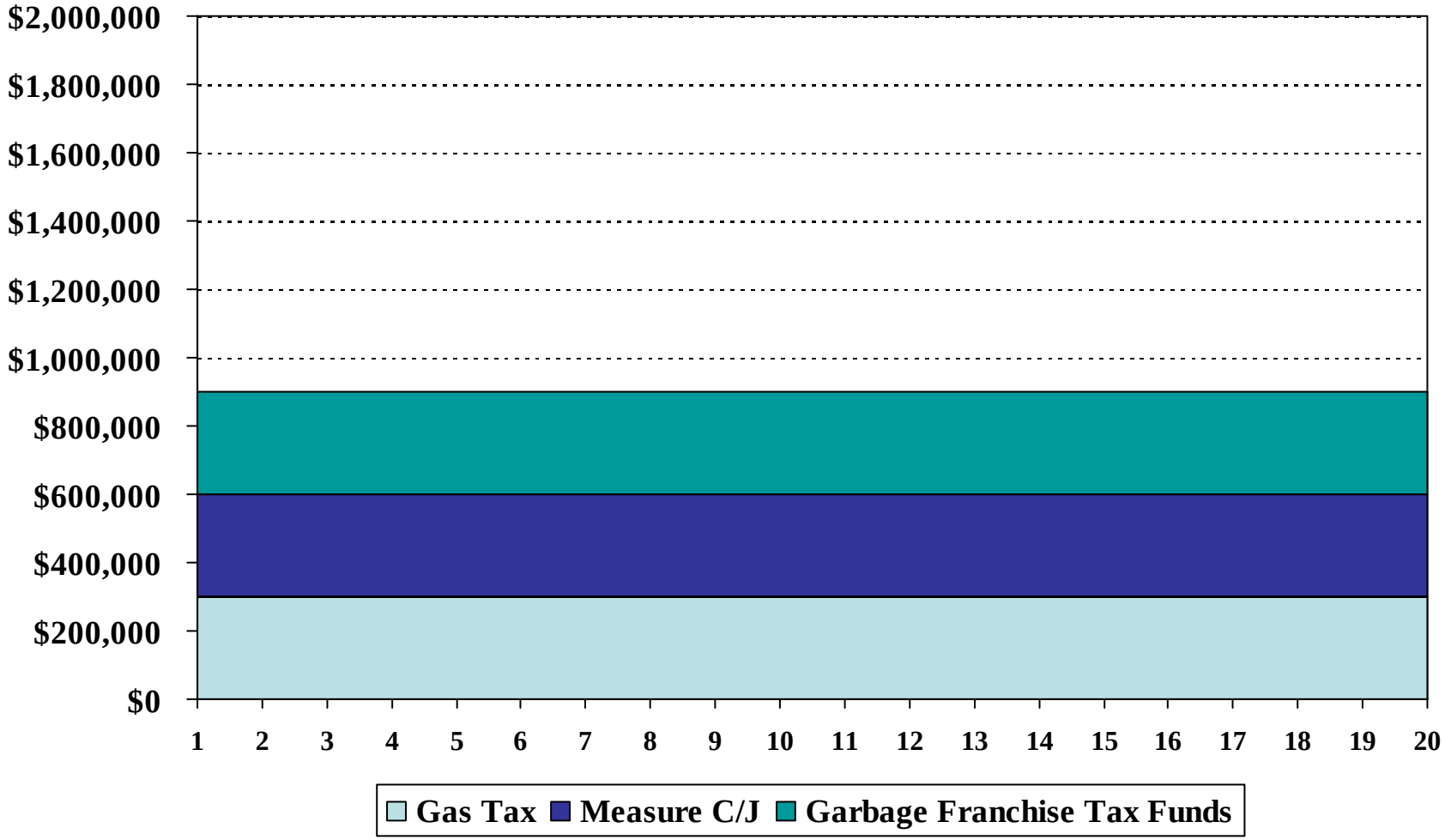
	Actual 2005	% Chg.	Projected Budget 2006	% Chg.	Draft Budget 2007	% Chg.	Projected 2008	Projected 2009	Projected 2010	Projected 2011
Revenues										
Taxes										
Property tax and assessments	$2,699,590		$2,929,150	9%	3,105,000	6%	3,291,300	3,488,778	3,806,257	4,145,014
Property Tax in Lieu of VLF	995,474		1,224,328	23%	1,298,000	6%	1,375,880	1,458,433	1,545,939	1,638,695
City Contribution to State General Fund	(179,152)		(179,150)		-		-	-	-	-
Sales Tax	877,463		901,467	3%	932,000	3%	973,940	1,017,767	1,063,567	1,111,427
Franchise Tax	730,824		815,855	12%	876,780	7%	903,083	930,176	958,081	986,824
Property Transfer Tax	240,782		200,000	-17%	200,000	0%	210,000	220,500	231,525	243,101
Rent and Interest (through 05/06)					65,800		101,220	103,244	105,309	107,415
Interest Only (after 05/06)	253,759		311,300	23%	260,000	-16%	320,728	293,941	267,045	244,066
Recreation fees										
Recreation class fees	817,961		882,109	8%	910,336	3%	937,646	965,775	994,749	1,024,591
OYA sports fees	265,332		300,000	13%	310,000	3%	319,300	328,879	338,745	348,908
Wagner Ranch sports fees	87,126		93,000	7%	93,200	0%	95,996	98,876	101,842	104,897
Other	204,555		177,925	-13%	170,573	-4%	175,690	180,961	186,390	191,981
Service fees			-							
Vehicle and parking fines	153,874		139,000	-10%	139,000	0%	143,865	148,900	154,112	159,506
NPDES	372,361		367,900	-1%	379,000	3%	392,265	405,994	420,204	434,911
Tree replacement fees	-		-		-		-	-	-	-
Building Inspection	323,995		375,000	16%	375,000	0%	388,125	401,709	415,769	430,321
Planning	330,475		330,000	0%	330,000	0%	330,000	330,000	330,000	330,000
Public works and engineering	170,395		147,536	-13%	167,500	14%	173,363	179,430	185,710	192,210
Police	20,988		22,500	7%	22,500	0%	23,288	24,103	24,946	25,819
Other			166,707		79,200	-52%				
Other agencies										
Federal			-		-					
State and local	46,725		302,399		-					
Gasoline taxes	-		-							
Homeowners tax reimbursement	35,601		35,500	0%	35,500	0%	36,210	36,934	37,673	38,426
Vehicle license fees	202,031		113,000	-44%	115,000	2%	117,300	119,646	122,039	124,480
Measure C - return to source	25,000		25,000	0%	25,000	0%	25,000	25,000	25,000	25,000
Montanera Endowment Draw								210,142	218,547	227,289
Miscellaneous	145,723		137,400	-6%	132,400	-4%	132,400	132,400	132,400	132,400
Unrealized loss on investments	(64,357)		-							
Total Revenues	8,756,525		9,817,926		10,021,789		10,466,599	11,101,589	11,665,849	12,267,283
Expenditures										
City management	708,851		986,449	39%	872,675	-12%	898,855	925,821	953,596	982,203
City clerk	133,858		-		-		-	-	-	-
Administrative services	823,079		816,265	-1%	796,401	-2%	784,293	807,822	832,056	857,018
Parks and recreation department	1,937,539		2,107,280	9%	2,286,720	9%	2,378,189	2,473,316	2,572,249	2,675,139
Net Playfield/A&G Center Need								210,142	218,547	227,289
Engineering	189,897		215,368	13%	255,905	19%	268,700	282,135	296,242	311,054
Police services	2,543,982		2,959,295	16%	3,243,898	10%	3,503,410	3,748,649	3,973,567	4,211,981
Public works	1,058,633		1,062,562	0%	1,105,742	4%	1,194,201	1,277,795	1,354,463	1,422,186
Planning Department	538,633		563,566	5%	630,135	12%	674,244	714,699	750,434	787,956
2004 COP Lease Pmts.	-		-				620,000	620,000	620,000	620,000
Total Expenditures	7,934,472		8,710,785		9,191,476		10,321,893	11,060,379	11,571,155	12,094,828
Revenues over (under) expenditures	822,053		1,107,141		830,313		144,706	41,210	94,694	172,455
Other Financing Sources (Uses)										
Operating Transfers in	275,474		51,293		119,000					
Garbage Franchise Tax to CIP	(380,000)		(341,975)		(360,230)		(371,037)	(382,168)	(393,633)	(405,442)
Additional Transfer to CIP			(302,399)		(484,684)		(341,646)	(308,404)	(273,983)	(238,338)
Operating Transfers out	(358,077)		(62,581)		0		0	0	0	0
Total other financing sources (uses)	(462,603)		(655,662)		(725,914)		(712,683)	(690,572)	(667,616)	(643,780)
Net change in fund balances	**359,450**		**451,479**		**104,399**		**(567,977)**	**(649,363)**	**(572,922)**	**(471,325)**
Fund balance beginning of year	**7,406,317**		**7,765,767**		**8,217,246**		**8,321,645**	**7,753,668**	**7,104,306**	**6,531,384**
Fund balance - end of year	**$7,765,767**		**$8,217,246**		**$8,321,645**		**$7,753,668**	**$7,104,306**	**$6,531,384**	**$6,060,059**

Infrastructure Funding Illustrations

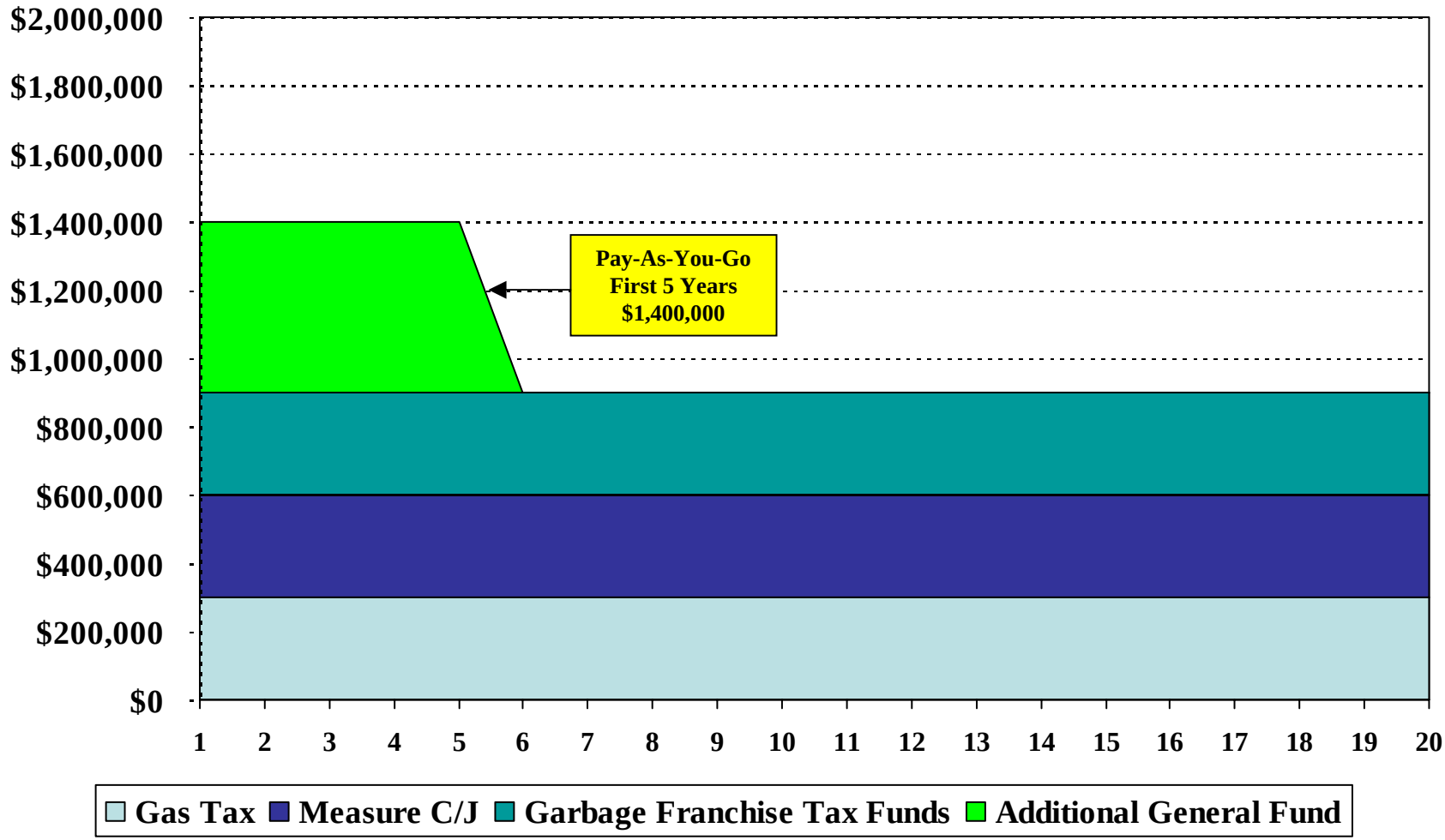
Pay-As-You-Go Funding
Infrastructure Improvement Program
Funding from "Outside" Sources



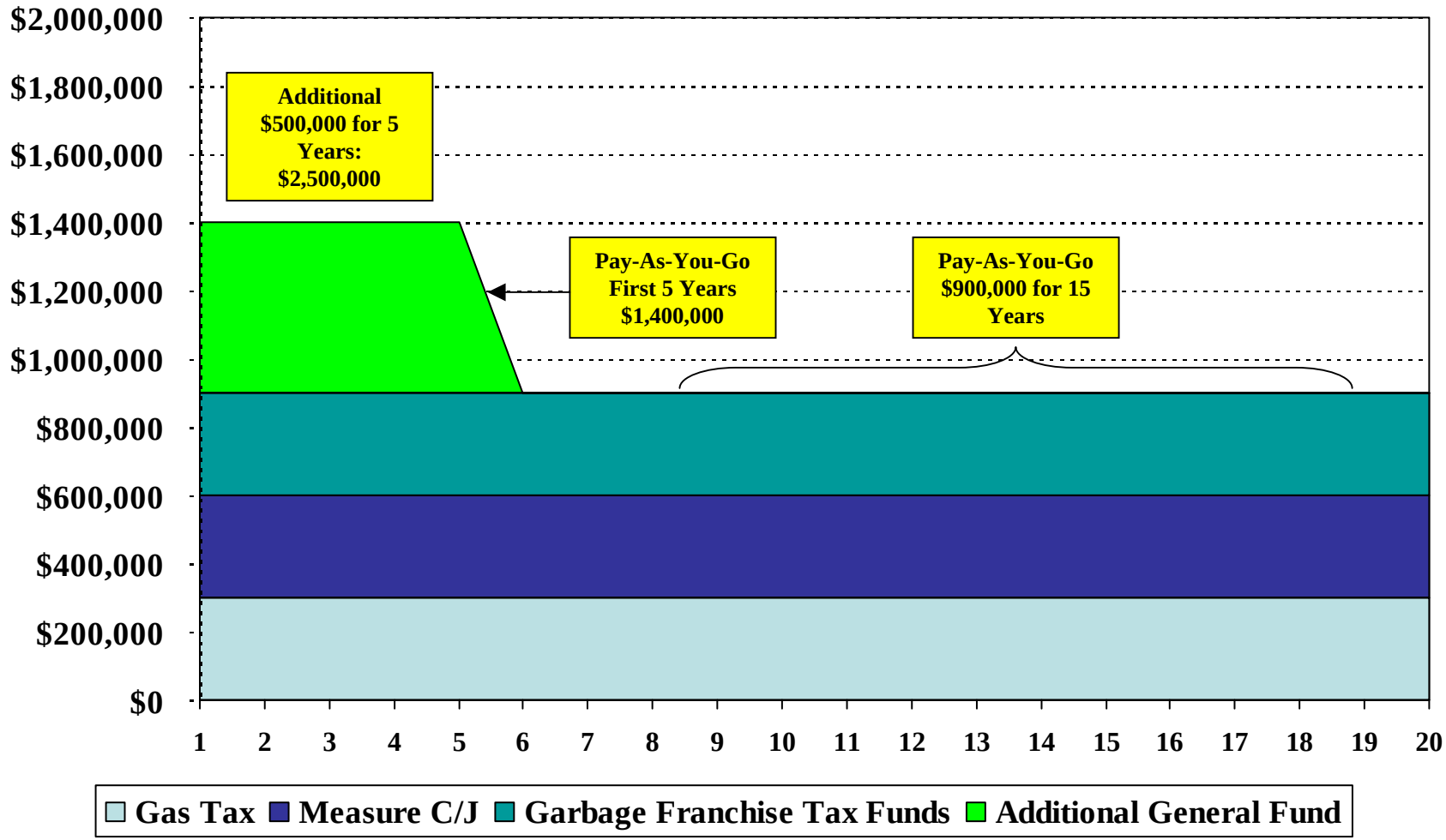
Pay-As-You-Go Funding
Infrastructure Improvement Program
"Outside" Sources Plus Current City Funding



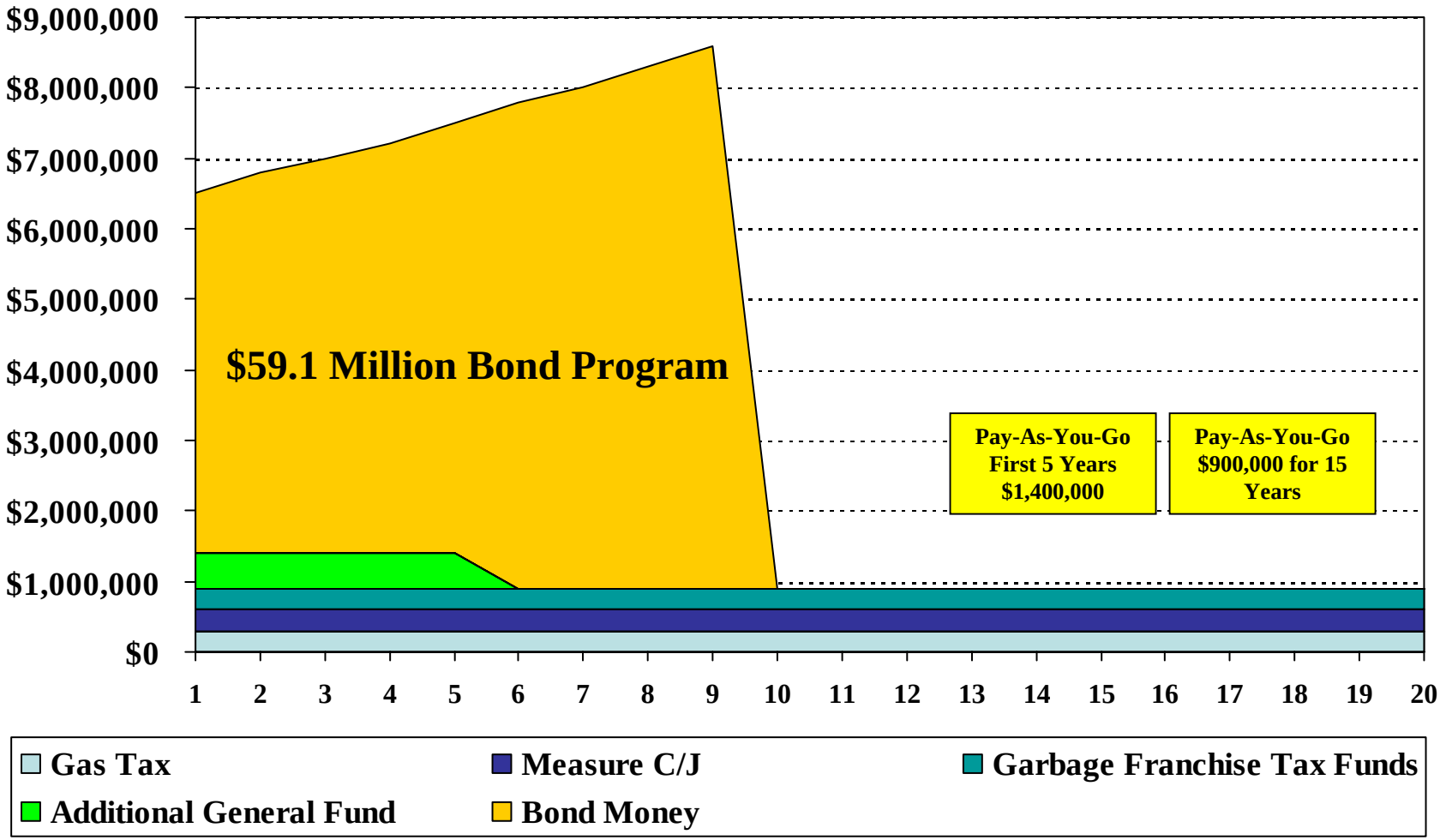
Pay-As-You-Go Funding
Infrastructure Improvement Program
Funding with Five Year Step-Up in City Funding



Summary of the Pay-As-You-Go Funding Approach
Infrastructure Improvement Program



The Impact of Bonds on the Infrastructure Program
Pay-As-You-Go Funding with Bond Proceeds



III. Revenue Analysis

Funding Infrastructure in California

- Pay As You Go
  - Utilize reserves/revenues
  - Advantages
    - » Avoid interest cost – no future burden
  - Disadvantages
    - » Current residents pay cost
    - » Can funding program keep up with project need and escalating costs?
    - » Raise revenues/cut costs to generate enough money
- Borrow
  - Issue bonds – long-term assets funded with long-term borrowing
  - Advantages
    - » Cost spread over time = "generational equity"
    - » Moneys available – complete projects sooner
  - Disadvantages
    - » Interest cost
    - » Tax burden over time

Revenue Basics

- Taxes Require Approval by Voters
- "General Purpose" Tax = Simple Majority Approval
  - Revenues for undefined usage
- "Special Purpose" Tax = Two-Thirds Approval Required
  - Revenues for defined usage
    - » Police services
    - » Infrastructure
- Fees Must Be Tied to "Cost of Service"
  - Must establish nexus between charge and service
  - Any charge in excess of nexus is a tax

Tax Alternatives

- Utility User Tax
  - Tax on consumption of utility services
    - » Electricity, gas, water, phone, cable, etc.
  - Tax ranges from 1% to 11% of bills, generally 5%
  - Revenue estimate: $220,000–$440,000
    - » 7,200 parcels x $50–$100 monthly bill x 5%
- Sales Tax
  - Tax on sale of certain goods
  - Addition to current 8.25% tax rate
  - Revenue estimate: $200,000
    - » $77 million taxable transactions (2004) x 0.25%
- Parcel Tax
  - Flat fee on taxable property for City services
  - Revenue estimate: $360,000–$720,000
    - » 7,200 parcels x $50–$100
- Business Payroll Tax
  - percent of payroll (San Francisco tax at 1.5%)

Other Revenue Options

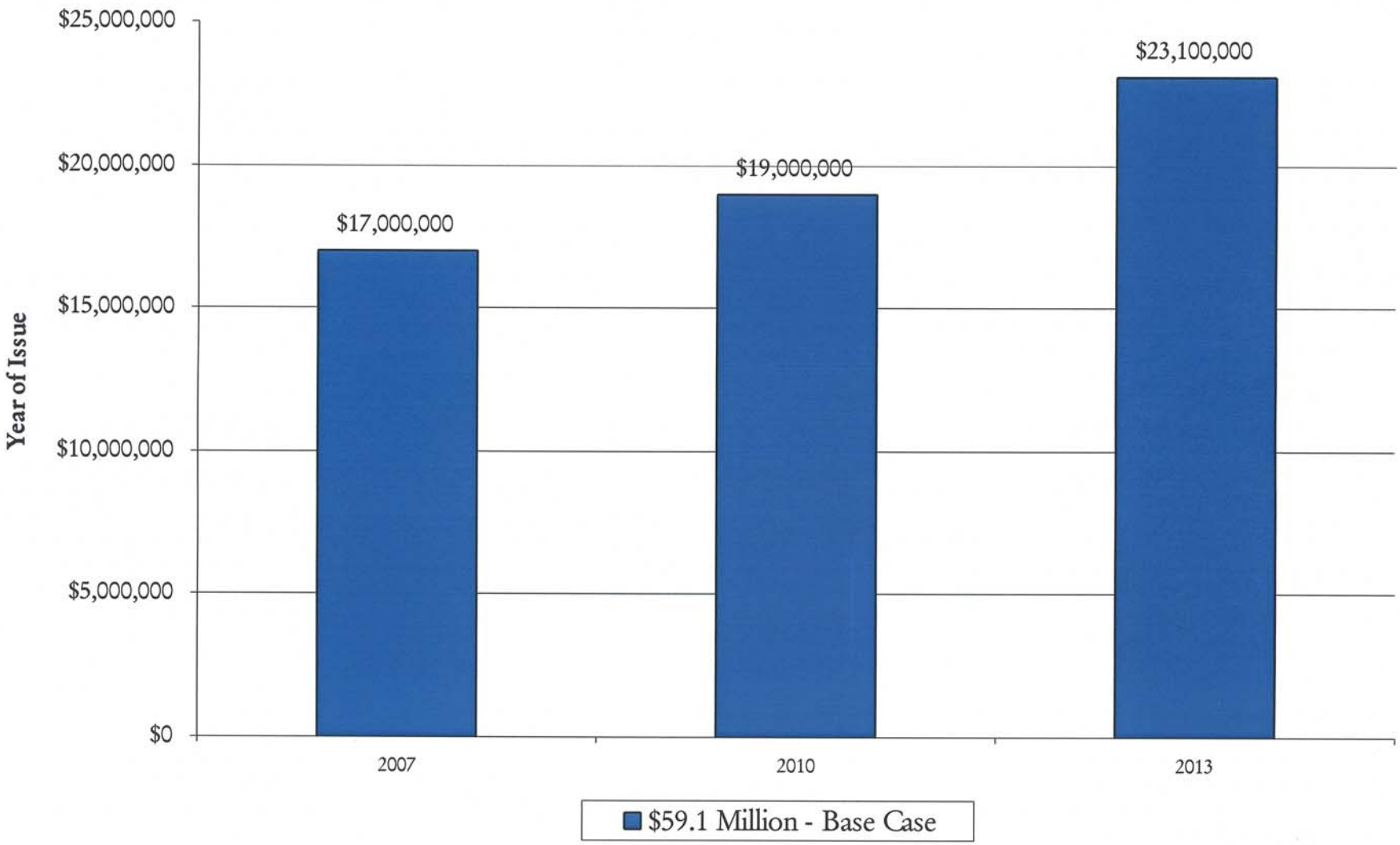
- Mello-Roos Services Community Facilities Districts
  - 2/3 voter approval – can be approved landowner in undeveloped areas
  - Charge for "additional" police, recreation services
    - » Over what is provided to the community
  - Tax on square footage, acreage, trip generation factors, etc.
  - Revenue estimate – relates to cost
    - » $500,000 = 0.1% of Montanera value
- Lighting and Landscaping Districts
  - Pay costs of ongoing maintenance
    - » Flexibility for "heavy maintenance"
  - Majority protest

User Charges/Cost Savings

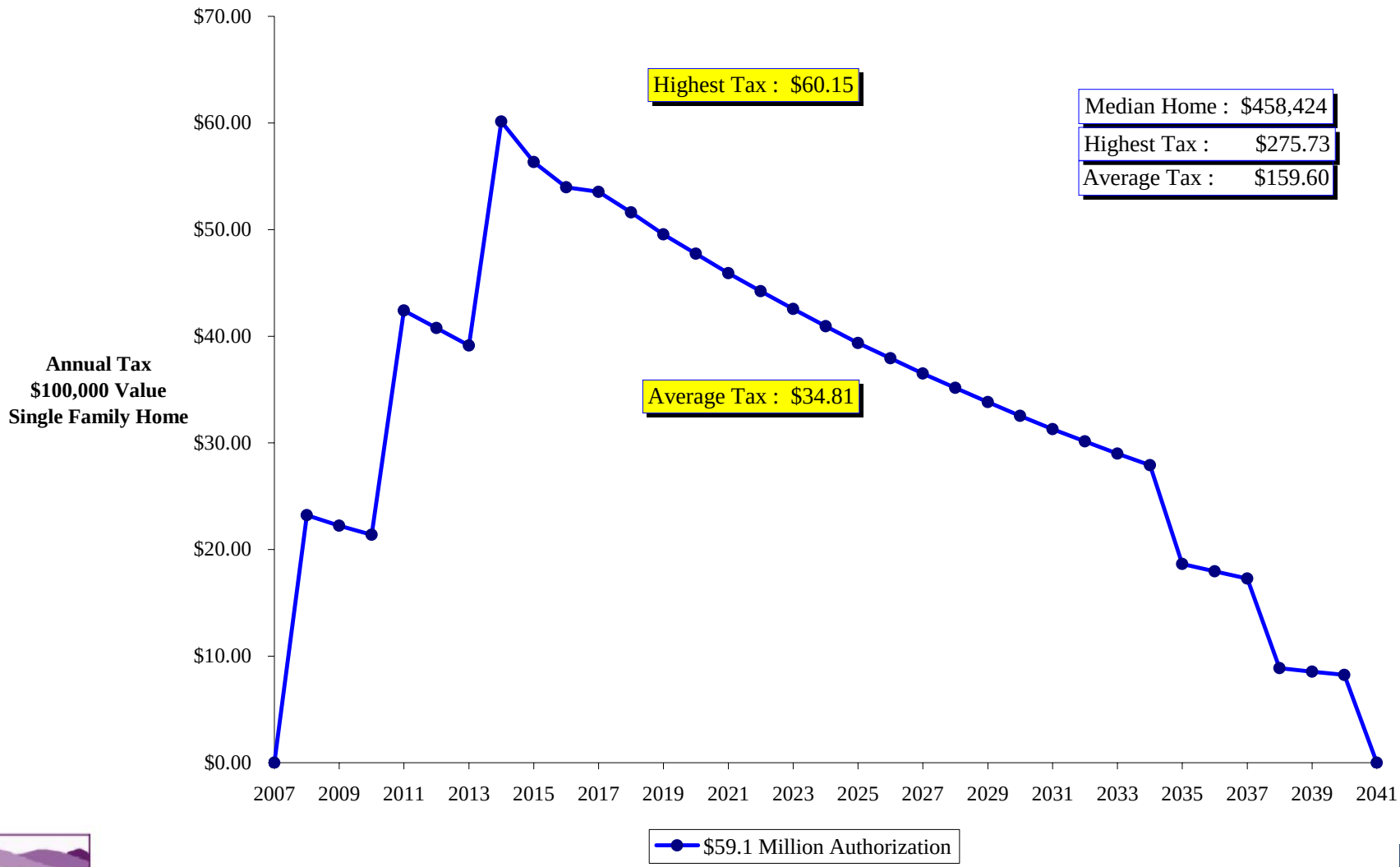
- Increase Park and Recreation Fees
  - Eliminate General Fund support
    - » 28% increase = $400,000
- Review Building Inspection/Plan Check Fees
  - City already charges for services – enough?
- Construction Impact Fees
  - Impact of heavy trucks on roads
- Cost-Sharing with Other Agencies
  - Joint purchase of supplies, gas, etc.
- Review Cost Items
  - Telecommunications
- Business Registration Fees

IV. General Obligation Bond Analysis

City of Orinda
Phasing of General Obligation Bond Issues



City of Orinda
Effect of Tax Rates for $100,000 Assessed Value Single Family Home
$59.1 Million General Obligation Bond Authorization
9-Year Capital Drawdown
Base Case



TAX RATE EFFECT OF GENERAL OBLIGATION BONDS

City of Orinda

Base Case

Financing Assumptions

	Escalating Debt Service
Amount of Bonds	$59,100,000
Construction Proceeds (1)	$59,100,000
Number of Bond Issues	3
Principal Amount of Bonds by Bond Issue	
May 2007	$17,000,000
May 2010	$19,000,000
May 2013	$23,100,000
Pattern of Annual Tax	Descending
Debt Repayment Structure	Escalating

Estimated Ad Valorem Tax Rates

	$100,000 Assessed Valuation		Median Value (2) Assessed Valuation	
Estimated Average Annual Future Assessed Valuation Growth	Average Annual Tax	Highest Annual Tax	Average Annual Tax	Highest Annual Tax
6% to 2006-07, 6% to 2007-08, and 6% thereafter (3)	$34.81	$60.15	$159.60	$275.73

(1) Gross construction proceeds at closing.
(2) The 2005-06 median assessed valuation of single family homes in the City is $458,424 based on the 2005-06 secured assessment roll of the Contra Costa County Assessor.
(3) The average annual compound growth rate for assessed valuation in the City was 6.93% between 1987-88 and 2005-06.

SOURCE: Stone & Youngberg LLC 20-Jun-06

6% AV GROWTH RATE
ESCALATING DEBT SERVICE
THREE BOND ISSUES

6/20/06

GENERAL OBLIGATION BOND TAX RATE ANALYSIS
City of Orinda

TAX RATE FOR FOUR BOND ISSUES ASSUMING CURRENT MARKET RATES PLUS 50 BASIS POINTS

Current Interest Bonds Only - $59.1 Million in Bonds

Base Case

Fiscal Year Ending	Secured Valuation (1)	Unsecured Valuation (2)	Total City Assessed Valuation	Secured Tax Rate for $100 of Assessed Value (3)	Annual Tax for Property with $100,000 Assessed Value	Annual Tax for Median Assessed Value Single Family Home (4)	Annual Tax for Average Assessed Value Single Family Value (5)	Annual Tax for Property with $600,000 Assessed Value	Annual Tax for Property with $700,000 Assessed Value	Debt Service for Bond Issue (6)
2006	3,761,280,589	31,867,433	3,793,148,022	0.0000	$0.00	$0.00	$0.00	$0.00	$0.00	$0
2007	3,986,957,424	31,867,433	4,018,824,857	0.0000	0.00	0.00	0.00	0.00	0.00	$0
2008	4,226,174,870	31,867,433	4,258,042,303	0.0232	23.21	106.39	126.26	139.24	162.45	$980,755
2009	4,479,745,362	31,867,433	4,511,612,795	0.0222	22.22	101.88	120.91	133.34	155.56	$1,002,555
2010	4,748,530,084	31,867,433	4,780,397,517	0.0214	21.39	98.05	116.37	128.33	149.72	$1,022,355
2011	5,033,441,889	31,867,433	5,065,309,322	0.0424	42.42	194.46	230.79	254.52	296.94	$2,141,678
2012	5,335,448,402	31,867,433	5,367,315,835	0.0408	40.78	186.93	221.85	244.66	285.44	$2,188,478
2013	5,655,575,306	31,867,433	5,687,442,739	0.0391	39.13	179.39	212.90	234.79	273.92	$2,225,478
2014	5,994,909,825	31,867,433	6,026,777,258	0.0601	60.15	275.73	327.24	360.88	421.03	$3,617,597
2015	6,354,604,414	31,867,433	6,386,471,847	0.0563	56.35	258.32	306.58	338.10	394.45	$3,598,997
2016	6,735,880,679	31,867,433	6,767,748,112	0.0540	53.98	247.45	293.67	323.87	377.84	$3,652,922
2017	7,140,033,520	31,867,433	7,171,900,953	0.0535	53.54	245.46	291.32	321.27	374.81	$3,839,422
2018	7,568,435,531	31,867,433	7,600,302,964	0.0516	51.61	236.59	280.79	309.66	361.27	$3,922,272
2019	8,022,541,663	31,867,433	8,054,409,096	0.0496	49.56	227.18	269.62	297.34	346.90	$3,991,377
2020	8,503,894,162	31,867,433	8,535,761,595	0.0478	47.75	218.91	259.81	286.52	334.27	$4,075,874
2021	9,014,127,812	31,867,433	9,045,995,245	0.0459	45.92	210.52	249.85	275.54	321.46	$4,153,974
2022	9,554,975,481	31,867,433	9,586,842,914	0.0442	44.23	202.74	240.62	265.35	309.58	$4,239,652
2023	10,128,274,010	31,867,433	10,160,141,443	0.0426	42.56	195.12	231.57	255.38	297.94	$4,324,282
2024	10,735,970,450	31,867,433	10,767,837,883	0.0409	40.93	187.64	222.69	245.59	286.52	$4,407,249
2025	11,380,128,677	31,867,433	11,411,996,110	0.0394	39.37	180.48	214.20	236.22	275.59	$4,492,710
2026	12,062,936,398	31,867,433	12,094,803,831	0.0379	37.94	173.91	206.41	227.63	265.56	$4,588,300
2027	12,786,712,582	31,867,433	12,818,580,015	0.0365	36.49	167.30	198.55	218.96	255.46	$4,677,846
2028	13,553,915,337	31,867,433	13,585,782,770	0.0352	35.16	161.16	191.27	210.94	246.09	$4,776,096
2029	14,367,150,257	31,867,433	14,399,017,690	0.0338	33.84	155.12	184.10	203.02	236.86	$4,872,054
2030	15,229,179,272	31,867,433	15,261,046,705	0.0325	32.54	149.15	177.01	195.21	227.75	$4,965,087
2031	16,142,930,029	31,867,433	16,174,797,462	0.0313	31.28	143.41	170.20	187.69	218.98	$5,059,740
2032	17,111,505,830	31,867,433	17,143,373,263	0.0301	30.13	138.13	163.93	180.79	210.92	$5,165,345
2033	18,138,196,180	31,867,433	18,170,063,613	0.0290	28.98	132.85	157.67	173.88	202.86	$5,265,519
2034	19,226,487,951	31,867,433	19,258,355,384	0.0279	27.91	127.94	151.84	167.45	195.36	$5,374,661
2035	20,380,077,228	31,867,433	20,411,944,661	0.0186	18.64	85.43	101.39	111.82	130.45	$3,806,505
2036	21,602,881,862	31,867,433	21,634,749,295	0.0180	17.95	82.31	97.68	107.73	125.68	$3,884,304
2037	22,899,054,773	31,867,433	22,930,922,206	0.0173	17.27	79.16	93.94	103.60	120.87	$3,959,386
2038	24,272,998,060	31,867,433	24,304,865,493	0.0089	8.88	40.72	48.32	53.29	62.17	$2,161,174
2039	25,729,377,943	31,867,433	25,761,245,376	0.0086	8.55	39.21	46.54	51.32	59.88	$2,203,574
2040	27,273,140,620	31,867,433	27,305,008,053	0.0082	8.23	37.75	44.80	49.41	57.64	$2,248,369
AVERAGE TAX RATE				$0.0348	$34.81	$159.60	$189.42	$208.89	$243.70	
MAXIMUM TAX RATE				$0.0601	$60.15	$275.73	$327.24	$360.88	$421.03	

NOTES:

	2005-06	2006-07	2007-08	2008-09	2009-10 and
(1) Annual compound rate of assessed valuation growth of the secured roll:	Actual	6.00%	6.00%	6.00%	6.00%
(2) Annual compound rate of assessed valuation growth of the unsecured roll:	Actual	0.00%	0.00%	0.00%	0.00%

(3) Tax rate based on a delinquency rate on unsecured valuations of: 5.00%

(4) The median assessed valuation of single family homes in the City was $458,424 in fiscal year 200506, based on the secured

6% AV GROWTH RATE
ESCALATING DEBT SERVICE
THREE BOND ISSUES

GENERAL OBLIGATION BOND TAX RATE ANALYSIS
City of Orinda

TAX RATE FOR FOUR BOND ISSUES ASSUMING CURRENT MARKET RATES PLUS 50 BASIS POINTS

Current Interest Bonds Only - $59.1 Million in Bonds

Base Case

assessment roll of the Contra Costa County Assessor.

(5) The average assessed valuation of single family homes in the City was $544,066 in fiscal year 200506, based on the secured assessment roll of the Contra Costa County Assessor.

(6) Actual debt service based on the issuance of insured general obligation bonds with a 30-year maturity. Assumes the City will sell bonds in the amount of $17 million in May 2007, $19 million in May 2010 and $23.1 million in May 2013.

SOURCE: Assessed Values: California Municipal Statistics
Analysis: Stone & Youngberg

V. Preliminary Conclusions

Preliminary Conclusions

- City Should be Able to Sustain 5-Year $1.4 Million Infrastructure Funding
  - Moderate growth in revenues and expenditures
    - » No additional police officers
  - Maintain General Fund Reserve over $6 million
- Long-Term → $900,000–$1 Million Funding Appears Sustainable
  - May be higher with higher property tax growth
  - Key: no significant changes to City's cost structure
- Revenue Options Involve Difficult Policy Choices
  - Generally 2/3 vote for higher taxes
- Not Enough Cash Flow for Pay-As-You-Go Approach to Fund Needs
  - Cutting costs involve difficult policy choices
- Only Bonds Provide Enough Capital to Fund Infrastructure Needs
  - Supplement Pay-As-You-Go effort

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