



2018 PAVEMENT MANAGEMENT REPORT

March 13, 2019



2018 Pavement Management Report

Town Council

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I EXECUTIVE SUMMARY

The Town is responsible for the maintenance and repair of 55.95 centerline miles of paved public streets which includes includes 13.8 miles of arterial, 15.8 miles of collector, and 26.3 miles of residential streets. The Town's street network replacement value is estimated at \$100.6 million and assumes replacement of the entire pavement network in present day dollars. This represents a significant asset for Town officials to manage. A Town Council goal for 2019 is to "continue to implement annual Measure K neighborhood streets and roads repair program for Moraga." Within this goal is a sub-goal to "prepare a comprehensive 2018 Pavement Management Report to evaluate Town's progress since 2015 and assess additional funding needs."

In 2012, the Measure K sales tax initiative was approved for general purposes and the Town may use the revenue for a variety of purposes, including but not limited to addressing the Town's most financially critical need to repair its failing streets and storm drains. The Town Council has stated its intention to spend the proceeds from the additional sales tax for road repair, as reflected in its annual goals since 2010 and unanimously supported by the entire Town Council.

In 2013, the Town leveraged \$600,000 of Measure K funds to yield upfront funds of \$7.7 million in Certificates of Participation to spend on a three-year intensive pavement program which significantly increased the Town's Pavement Condition Index (PCI) from 49 to 70. In 2015, the Town garnered a Pavement Management Technical Assistance Program (P-TAP) grant from the Metropolitan Transportation Commission (MTC) to survey the pavement condition of all Town streets. The 2015 P-TAP report projected that the network PCI would decline to a 67 by 2018 given the reduced funding level of \$1.1 million. The Town prepared a plan on how to address the remaining 17 years of Measure K with remaining unleveraged annual sales tax to maximize the condition of the pavement network by integrating four new pavement strategies:

- Focus on one type of treatment per year;
- Budget an appropriate percentage of funding for each treatment type;
- Budget non-Measure K funds at or greater than pre-Measure K levels; and
- Partner with other agencies to reduce costs.

In 2018, the Town garnered another P-TAP grant to evaluate the condition of the streets which resulted in an increase in the Town's PCI to 74. This increase is a result of the impact of the above strategies, Road Maintenance and Rehabilitation (RMRA - new SB1 Gas Tax) revenue, additional Garbage Vehicle Impact Fees, and the success in securing additional funding in excess of \$700,000 annually, on average.

The 2018 P-TAP report also developed budget scenarios to project 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. For the purpose of this report, the following scenarios were analyzed for a fourteen (14)-year period (2019-2032) to coincide with when Measure K will sunset. The results are summarized below:

- 1) **Optimal Pavement Maintenance Strategy (Unconstrained)** – This scenario shows the effects of implementing the ideal investment strategy (as recommended by the MTC

PMP Needs module). This analysis assumes an inconsistent annual budget to remove all backlog each year which is not possible for the Town given the funding sources.

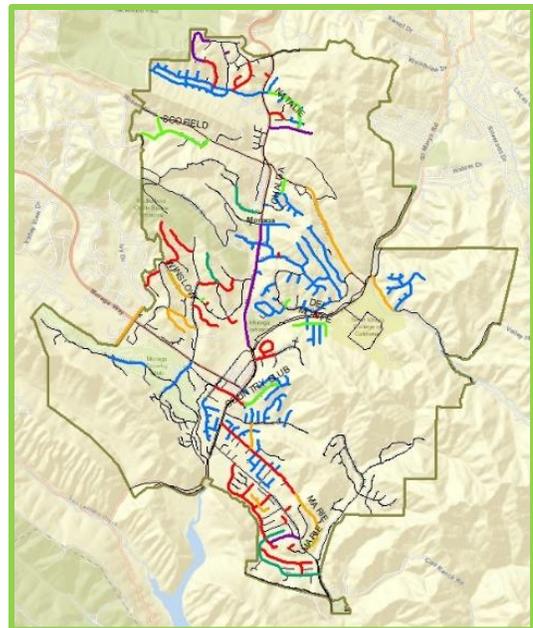
- 2) **Current Investment Level** – An average annual budget of \$2.52 million was evaluated over fourteen years, for a total of \$35.2 million, to determine the effects of continuing pavement maintenance at the current budget level. Assuming an inflation factor of 2%, the average annual funding is based on steady reliable funding sources of Measure K, Road Maintenance and Rehabilitation Account (RMRA), and Garbage Vehicle Impact Fees. The overall Network PCI will decrease by one point, to 73, under this funding level.

- 3) **Increase PCI by 5 points** – An average annual funding level of \$2.89 million, for a fourteen-year total of \$40.5 million, should increase the overall network PCI to 79 by 2032, and maintain that level through 2032. Since Measure K was adopted in 2012, other funds have been programmed for a total amount of \$4.6 million (\$1.6 million in grants and \$3.0 million in non-Measure K funds) or \$775 thousand per year. If steady reliable funding sources of RMRA and Garbage Vehicle Impact Fees are removed from the calculation, an average of \$711 thousand per year was spent in the last six years. Continuing this trend will allow the Town to achieve the results of Budget Scenario 3 and increase by at least 5 PCI points when Measure K sunsets in 2032.

Scenario Name	14-Year Budget	2032 PCI (Change)	2032 Deferred Maintenance	2032 % Good	2032 % Very Poor
1) Unconstrained	\$40.8 M	80 (+6)	\$0	91.4%	0.0%
2) Current Investment	\$35.2 M	73 (-1)	\$13.1 M	80.3%	8.6%
3) Increase PCI 5 Points	\$40.5 M	79 (+5)	\$519,000	88.7%	0.0%

Since the inception of Measure K, the Town has applied pavement treatments on 189 street segments (as shown on the map to the right) out of the 441 street segments throughout Town, or 43% of the Town’s network. The percentage of “Good” condition streets have increased from 21.0% to 69.5% while the “Poor” and “Very Poor” condition streets have decreased from 57.0% to 17.6%.

In summary, Measure K and the Town’s implementation of a comprehensive and innovative pavement management approach has resulted in better than anticipated pavement conditions which are likely to improve in the future should grants and other funding remain available. No additional General Fund contribution is recommended at this time to maintain the Town’s streets.



II TOWN'S PAVEMENT HISTORY

1. Pavement Needs

The Town of Moraga is a small semi-rural community of 17,416, nestled in the East Bay region of the central California coast, east of Oakland. Moraga was incorporated in 1974 and in the years that followed, its street network of 56 centerline miles was neglected due to lack of dedicated funding. Since incorporation, new streets created as part of new housing subdivisions are privately maintained by respective homeowners' associations.

By 2012, Moraga's Pavement Condition Index (PCI) had deteriorated to 49 and was ranked in the bottom 15 of all 109 Bay Area cities and counties. Using a 0 to 100 PCI scale, with 0 representing failed pavement and 100 representing new pavement, a rating of 49 placed the Town's street network in the "Poor" condition category. The Town's pavement network was at a critical juncture, with a backlog of \$25 million in pavement needs. Given General Fund revenues of \$6.3 million in Fiscal Year 2011-12, it was clear that additional revenue was needed to prevent the streets from falling further into a state of disrepair. Without significant maintenance, the Town's network would deteriorate at a more rapid rate and put much of the network at risk of falling into poor condition.

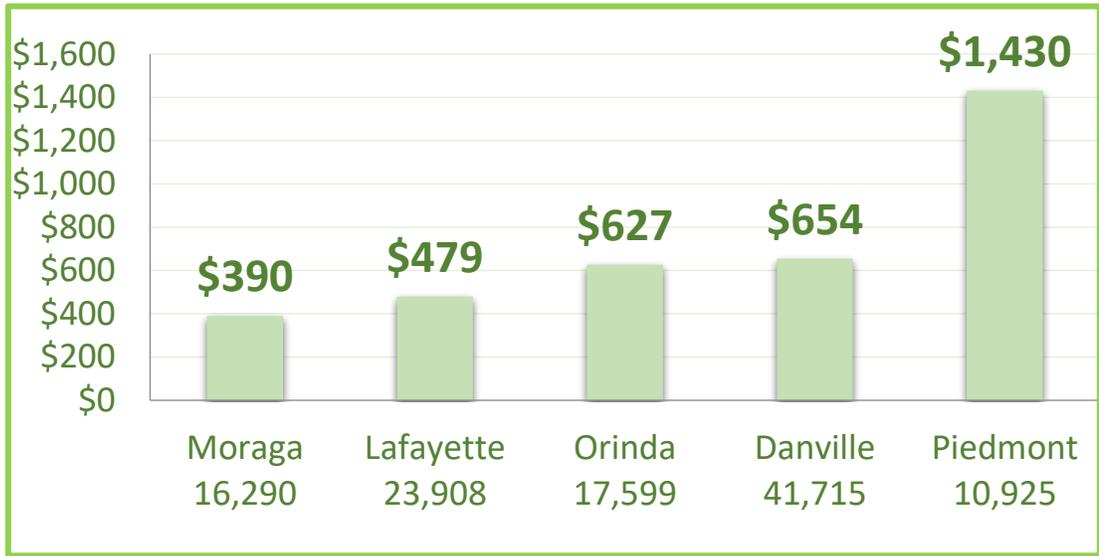
Not only did the Town recognize this from a pavement management perspective, the community was also alarmed and expressed a need to address road conditions to improve safety, driving and aesthetics. Furthermore, the public understood that the backlog would triple to \$75 million in 10 years if no new dedicated funding was created.

2. Revenue Enhancement Committee Outreach to Neighborhoods

Recognizing the funding shortfall and community needs, in 2010 the Town embarked on an intensive and thorough grassroots public outreach program through a Revenue Enhancement Community Outreach to Neighborhoods (RECON) subcommittee to communicate the critical need of the Town's roads. This RECON program was developed by a six-member subcommittee appointed by Town Council to consider what appropriate measures should be undertaken to obtain information from the community about their views of the Town's fiscal condition and their perceptions of issues that should be dealt with in the upcoming years. In addition, the subcommittee identified the proper venues in which to inform Moraga residents about the financial condition of the Town and collect information on issues identified by the community. The subcommittee included Councilmembers Mike Metcalf and Howard Harpham, Town Manager Mike Segrest, Administrative Services Director Joan Streit, and community leaders Ellen Beans and Dick Olsen.

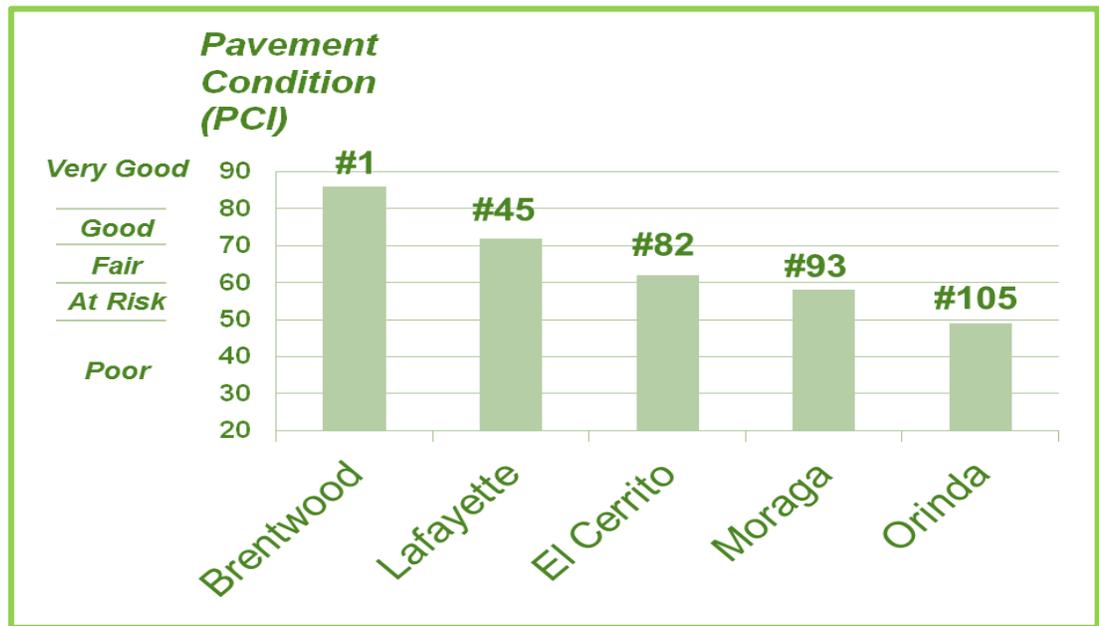
On February 16, 2011, RECON presented to the Town Council information that had been prepared in response to the following questions and perceptions learned from the May 2010 focus groups that included 79 individuals:

- What is the state of Moraga’s finances?



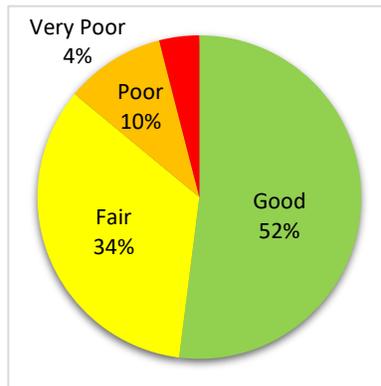
Revenues Per Capita Among Peer Cities

- How does Moraga compare with peer cities?

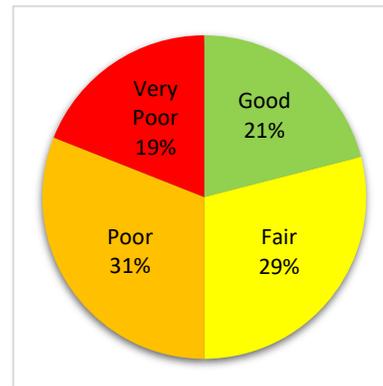


Condition Pavement Condition Indices Among Peer Cities

- What are Moraga’s unmet infrastructure needs?

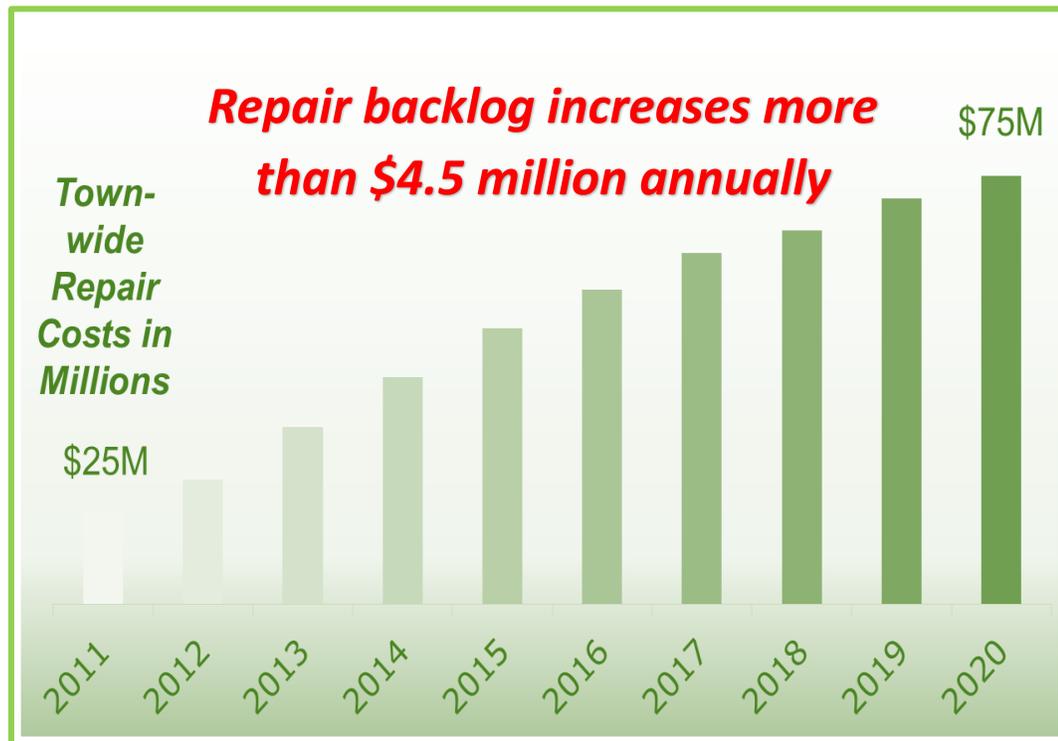


*2011 Arterials
(25% of Network)*



*2011 Neighborhood Streets
(Residential & Collectors)*

- What are the consequences of failing to meet those needs?



RECON summarized their responses with the following conclusions:

- Moraga spends \$6 million annually for essential services and lives within its means;
- Moraga is only able to fund \$500,000 per year for road and storm drain repairs and roads and storm drains are deteriorating faster than they are being repaired;
- Moraga cannot adequately fund infrastructure repairs from current resources; and
- Moraga cannot count on Federal or State bailout as this is a local problem that requires a local solution.

On February 23, 2011, the Council discussed revenue options available for Town consideration in the future and brought three consultants, Lew Edwards Group, Godbe Research, and Leptien, Cronin Cooper, Morris & Poore, Inc., on board to assess the awareness of the infrastructure issues facing the Town.

In May 2011, the Town received the survey results of a statistically valid and representative survey conducted in March and April 2011 to identify Town priorities and the willingness of community members to support various funding mechanisms. A key finding was that although 60 percent of the community supported a Moraga pothole and neighborhood street repair bond measure, the community also needed more information about the ramifications of the Town's failing infrastructure.

In August 2011, the Town Council received an update on RECON efforts and their "work stream" of future activities. This update included information from a June 2011 report, *The Pothole Report: Can the Bay Area Have Better Roads?* by the Metropolitan Transportation Commission, the transportation planning, financing, and coordinating agency for the nine-county San Francisco Bay Area. The report ranked all 109 jurisdictions in the Bay Area by the condition of each community's average pavement condition.

The analysis ranked the Town's roadway conditions as 'at risk' with an average pavement condition of 55. By comparison, Orinda's average pavement condition was 49, putting it in the "Poor" category. Lafayette, whose voters passed a bond measure in 2004, improved its average pavement condition from a "Fair" 64 in 2006 to a "Good" 72 in 2010.

On February 22, 2012, the Council, with the expertise of the Lew Edwards Group, reviewed revenue measures, and narrowed down the revenue options to a local sales tax or a community facilities district (CFD).

On May 30, 2012, Godbe Research presented to Council the results of a statistically valid survey of Moraga voters who were asked whether they would support a sales tax measure or a CFD. An estimated 54 percent of survey respondents supported the one-cent sales tax and only 40 percent supported a \$14 million CFD, with a margin of error of 5.5 percent. As a result, the pollster recommended the Town proceed with a one percent general purpose sales tax measure and eliminate the CFD as an option.

At the same time, RECON put the pavement challenge in front of Town residents by continuing a variety of outreach efforts including neighborhood meetings, mailers, and public outreach events. Neighborhood meetings included 17 hosted by residents (225 attendees), while 11 service clubs and organizations reached 334 attendees. Four public events were also held.

Two informational mailers with feedback forms were sent to Moraga residents in April and June 2012. Over 682 feedback forms were returned detailing community priorities. Press releases spurred feature articles in the local newspapers about Moraga, the proposed sales tax and road infrastructure conditions.

3. Measure K



On July 25, 2012, the Moraga Town Council, by unanimous vote of Council members present, placed a local one-cent transaction and use tax (i.e. sales tax) measure on the November 6, 2012 General Election ballot by approving Ordinance 238. The local measure was then submitted to the voters as “Measure K” and had the following components:

- A one-cent sales tax would be implemented.
- The sales tax would “sunset” in 20 years.
- Independent audits of this revenue source would be publicly available and submitted annually to a Citizens’ Oversight Committee and the Audit and Finance Committee.
- The Citizens’ Oversight Committee would be responsible for ensuring and communicating with the public that the funds were spent appropriately.
- The Town would be authorized to incur debt against the proceeds of this sales tax.
- With Measure K, the total sales tax rate would be 9.25%, the same as the statewide Sales Tax in effect since 2009 and eliminated on July 1, 2011.

In November, the voters of Moraga overwhelmingly passed Measure K with 70.5% (5,993 yes votes; 2,503 no votes) in support of the measure. This vote of support was spread fairly consistently throughout all voting districts with 85.52% voter turnout throughout Moraga. On December 12, 2012, the Town Council confirmed the passage of Measure K, the Town of Moraga’s one-cent local transactions and use tax.

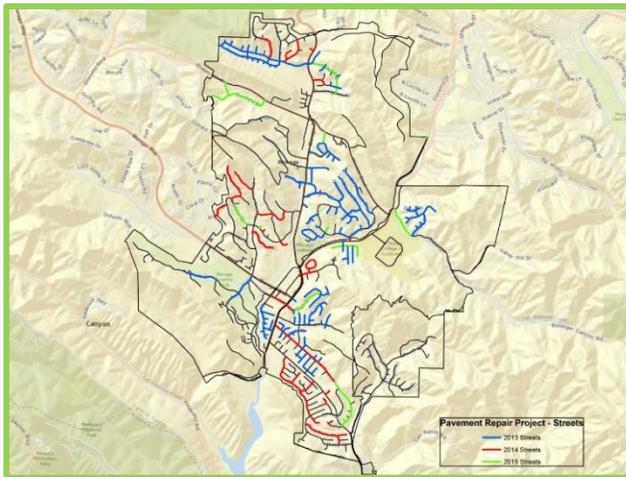
The Measure K sales tax measure was approved for general purposes and the Town may use the revenue for a variety of purposes, including but not limited to addressing the Town’s most financially critical need to repair its failing streets and storm drains. In 2015, the Town Council adopted Resolution 98-2015 classifying Measure K sales tax revenue as a Major Fund to provide greater clarity and transparency about the intent and use of Measure K funds for street and related infrastructure maintenance and repair.

4. Three-Year Intensive Pavement Program

In 2013, the Town leveraged \$600,000 of the estimated \$1 million annual sales tax revenue at that time to yield \$7.7 million through Certificates of Participation, a municipal financial instrument, to complete an intensive three-year pavement repair program focused on residential streets, with the first year (2013 Pavement Repair Project) concentrating on preventive maintenance, the second year (2014 Pavement Repair Project) on overlays and the third year (2015 Pavement Repair Project) on reconstruction treatments.

Year	Completed Segments	Percent of Neighborhood Segments (358)	Percent of Entire Town Network (439)
2013 - Preventative Maintenance	107	29.9%	24.4%
2014 - Overlay	28	7.8%	6.4%
2015 - Reconstruction *	13	3.6%	3.0%
3-Year Total	148	41.3%	33.7%

* Three of the thirteen reconstruction streets were constructed in 2016 due to delays related to utility conflicts



**3-Year Intensive Pavement Program
Street Segments Completed**

Since over 40% of neighborhood street segments (over a third of the entire town network) received a pavement treatment, impacting a substantial portion of the community, the following extensive public outreach program was developed for the three-year intensive pavement program:

Pre-Construction Activities

- Letters mailed to all residents on affected streets
- Door-to-door education through a team of volunteers
- 2 public informational meetings held during day and evening

Construction Literature

- Public Outreach Brochure
- Frequently Asked Questions
- Door Hangers

Online Activities

- Town website with project information and three-week look ahead schedule
- Facebook page with daily construction updates



Door-to-Door Volunteers

Construction Notifications

- Door to door volunteers
- “No parking” sidewalk notices 3 days in advance of work
- Letters to residents 2 weeks in advance of work

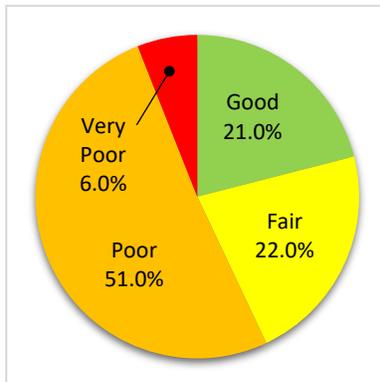
Project Signage

- Applied to contractor equipment and workers safety vests
- Changeable Message Boards at neighborhood entrances
- Lawn signs “Shop Moraga First”

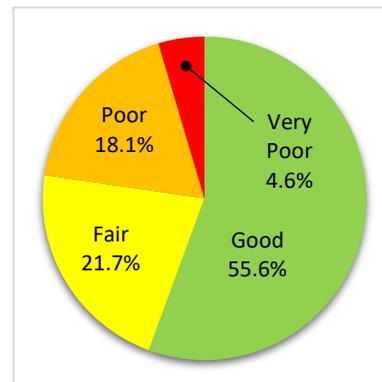


Measure K Lawn Sign

The three-year intensive pavement program effectively stopped the rapid decline of the Town’s failing pavement network. In 2015, the Town garnered a Pavement Management Technical Assistance Program (P-TAP) to inspect each paved street maintained by the Town to assess its pavement condition. The 2015 P-TAP pavement condition assessment concluded that through being good stewards of the local sales tax revenue, the leveraged funds raised the Town’s network PCI significantly, from 49 (a network at risk) in 2012 to 70 (a network in good condition) in 2015.



Pre-Measure K



3-Year Results

The Town’s pavement management approach garnered the following recognition:

- 2013 Best All-Around Pavement Management Award by the Metropolitan Transportation Commission
- 2014 Outstanding Local Streets and Roads Project Award by the League of Cities
- 2015 Project of the Year for Small Cities/Rural Communities by the American Public Works Association

5. Remaining 17 Years of Measure K

The 2015 P-TAP report determined that after spending the \$7.7 million of leveraged funds, the Town needed to spend \$2.1 million annually to maintain the PCI of 70 that the Town diligently achieved. Measure K originally was projected to generate \$1 million annually; however, the different collection methodology of local sales tax which is destination based as opposed to the Bradley Burns State sales tax which is

based on the point-of-sale, was far more favorable to the Town. The Town benefitted from online purchases and vehicle sales which was reflected in \$1.7 million of annual revenue in Fiscal Year 2015-16. After accounting for the \$600,000 in debt service for the Certificate of Participation, the remaining unleveraged \$1.1 million was short of the \$2.1 million recommended funding for streets.

The 2015 P-TAP report projected that the network PCI would decline to a 67 (or rolling average last three years of 69) by 2018 given the \$1.1 million funding level. The Town prepared a plan on how to address the remaining 17 years of Measure K with remaining unleveraged annual sales tax to maximize the condition of the pavement network by integrating four new pavement strategies outlined in Section III, 2. Additional Town Pavement Strategies below.

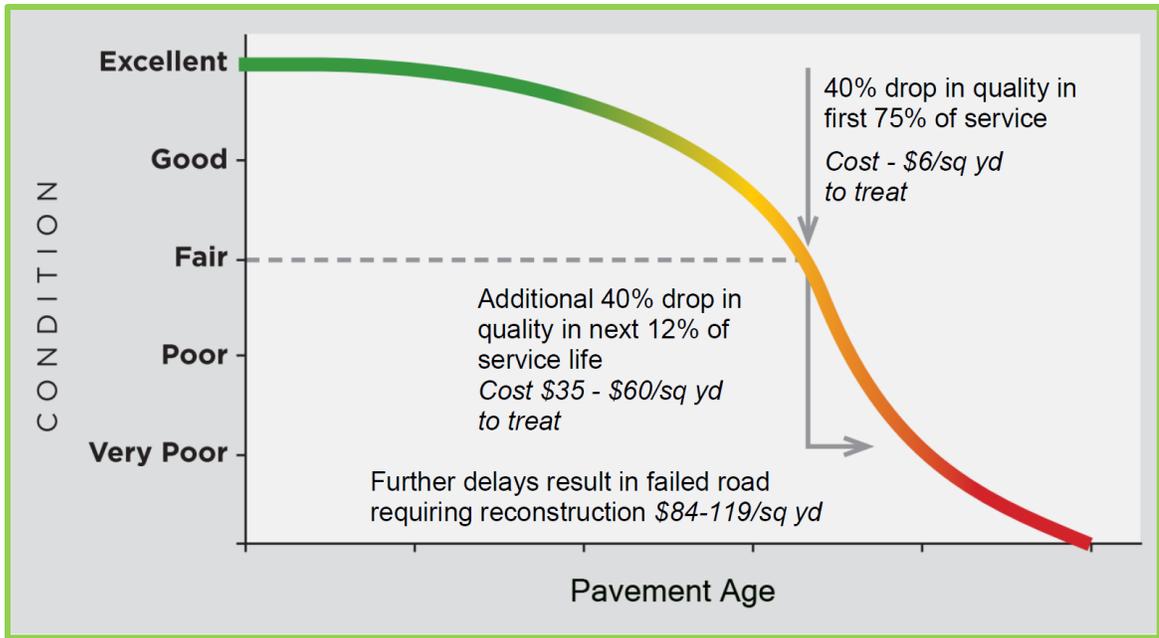
III PAVEMENT MANAGEMENT APPROACH

1. Asset Management Strategy

Pavement Management is a set of tools and philosophies designed to manage the maintenance activities of asphalt concrete and concrete pavements. A Pavement Management Program consists of a module to track existing and historical pavement condition data and a planning-level decision-making process to help choose the most cost-effective maintenance strategies, which streets to repair and when.

Conventional wisdom of most public works and street department agencies used to be to treat streets in a “worst-first” philosophy. Under this “worst-first” policy, streets are allowed to deteriorate to a nearly failed condition before any rehabilitation (such as overlays or reconstruction) is applied. This can also be called the “don’t fix if it isn’t broke” mentality.

Pavement Management Programs are designed with a more cost-effective “best-first” approach. The reasoning behind this philosophy is that it is better to maintain streets with lower-cost, preventative maintenance treatments, such as slurry seals, chip seals, and crack sealing, and extend their life cycle, before the street condition deteriorates to a state where it requires more costly rehabilitation and reconstruction. Generally, paved streets spend about three-quarters of their life-cycle in “Fair” to “Good” condition, where the street shows little sign of deterioration, and has a high service level. After this time, the street condition begins to deteriorate at a rapid rate and, if not maintained properly, soon reaches a condition where it will require costly overlays and reconstructions. If treated with a surface seal or other preventative maintenance, the street condition will remain in “Good” condition or better for a longer period of time. The below figure shows a typical condition deterioration curve for a street.



Typical Pavement Deterioration Curve

2. Additional Town Pavement Strategies

Starting in 2016, the Town integrated four new pavement strategies into the pavement management program:

Focus on One Type of Treatment per Year

The three-year intensive pavement program that spent the majority of the leveraged \$7.7 million of Measure K funds focused on preventative maintenance treatments in the first year, overlay treatments in the second year, and reconstruction treatments in the third year. This strategy was intentional to maximize quantities for encouraging more competitive and cost-effective construction bids and activities. The “buying in bulk to reduce cost” concept was applied to the remaining 17 years of Measure K. Continuing with the treatment cycle approach, a preventative maintenance project was completed in 2016, an overlay project was completed in 2017, and a reconstruction project was completed in 2018, with the cycles repeating thereafter.

Budget Appropriate Percentage of Funding for Each Treatment Type

A custom analysis was conducted as part of the 2015 P-TAP report to determine the appropriate percentage of funding that should be programmed for each treatment type to maximize the overall PCI. The results identified approximately 50 percent of the funding towards preventative maintenance treatments, with 17 percent for overlay treatments, and 33 percent for reconstruction treatments. For example, if an annual funding amount of \$1 million for three years provides a total \$3 million, the funding will be distributed at \$1.5 million (50%) for a preventative maintenance project, \$500,000 (17%) for an overlay project, and \$1 million (33%) for a reconstruction project. Programming of pavement funding used this calculation model for the 2016 through 2018 paving projects. The 2018 P-TAP report reconducted the custom analysis and recommends spending 50 percent, 25 percent, and 25 percent on preventative maintenance, overlay, and reconstruction treatments, respectively.

Budget Non-Measure K Funds at or Greater than Pre-Measure K Levels

The Town continued leveraging Measure K funds with grant opportunities as matching funds or augment the pavement program with non-Measure K funds. For 10 years prior to Measure K, the Town spent \$2.2 million of local funds and garnered \$2.8 million of grant funds which averaged \$507,000 per year. The Town committed to continue providing the same level or greater of non-Measure K funds towards the Town's pavement program. Since Measure K was adopted in 2012, other funds have been programmed for a total amount of \$4.6 million (\$1.6 million in grants and \$3.0 million in non-Measure K funds) or \$775 thousand per year.

Partner with Others to Reduce Costs

Lastly, the Town considered joint projects with local agencies and private developers to reduce duplicate administration costs and increase quantities to reduce bid prices. This objective has been a recurring goal at the 2013 and 2014 Lamorinda Joint Council meetings and was part of the 2014 Town Mayor's Goals. The following completed projects utilized this pavement strategy:

- 2016 Joint Moraga-Orinda Ivy Drive Reconstruction Project
- 2016 Joint Moraga-Lafayette Surface Seal Project
- 2016 Rheem Boulevard Landslide Repair and Repaving Project (partnered with SummerHill developer as part of the Bella Vista Subdivision)
- 2017 Livable Moraga Road Segment 3 Restriping (funded by SummerHill developer as part of the Harvest Court Subdivision and includes slurry seal)
- 2018 Joint Moraga-Orinda Full Depth Reclamation Project
- 2018 Gas Pipeline Replacement Project (funded by PG&E and includes St. Mary's Road slurry seal)

Moraga, Lafayette, and Orinda were awarded the 2016 Project of the Year for Small Cities/Rural Communities by the American Public Works Association for the Lamorinda Paving Partnership.

3. Cost-Effective Pavement Treatments

The Town considers innovative pavement treatments when they are more cost effective than conventional methods. During the design phase of a paving project, existing pavement and soil properties are tested and characterized to determine an appropriate treatment. The following are pavement technologies that have been included in Town pavement repair projects.

Preventative Maintenance Treatments: Microsurfacing and Rubberized Cape Seal

Surface seals are typically applied to streets in "Fair" condition. Microsurfacing is a surface treatment like traditional slurry seal but is more durable and can be used for the preservation of all types of streets from residential to collector and arterial. Like a slurry seal, microsurfacing is a mixture of emulsified asphalt, water, fine aggregate, and mineral filler. Additionally, microsurfacing emulsions are always polymer modified, which hold the crushed aggregate very well. Between the modified emulsion and the crushed aggregate, microsurfacing can be placed in thicker layers than slurry seals making it more durable and longer lasting. Microsurfacing is primarily used to mitigate raveling and oxidation of asphalt pavement and improves friction and appearance of both asphalt and concrete surfaces. Microsurfacing can be designed

with larger aggregate (Type III) for use in filling shallow to moderate depth ruts in asphalt pavement. It can also seal low-severity cracks, though it's best to seal the cracks first before application of microsurfacing. Microsurfacing applied as part of the 2013 Pavement Repair Project is performing much better than traditional slurry seals, based on current observations.

The rubberized cape seal treatment is a three-layer application of an asphalt rubber chip seal (chip seal) followed by the application of a slurry seal or microsurfacing. The chip seal is constructed by placing crumb rubber (recycled tire rubber) modified hot liquid asphalt binder onto the pavement surface followed by hot pre-coated (conventional asphalt) chips. Microsurfacing or slurry seal is then placed on top. Through CalRecycle grants from the State, the Town has received funding to help offset some of the costs for the rubberized products on streets in "Fair" to "Poor" condition. Due to the crumb rubber in this product, a rubberized cape seal can also significantly slow down reflective cracking from the pavement through the new seal. The rubberized cape seal can be used in lieu of much more expensive traditional overlays on lower volume streets (roughly 50% savings). These treatments applied in 2013 and 2016 are performing much better than traditional slurry seals or cape seals based on pavement rating inspections conducted in 2018.

The rubberized cape seal and microsurfacing treatment types have been applied to the following projects:

- 2013 Pavement Repair Project
- 2016 Joint Moraga-Lafayette Surface Seal Project

Overlay Treatment: Rubberized Hot Mix Asphalt Overlays (RHMA)

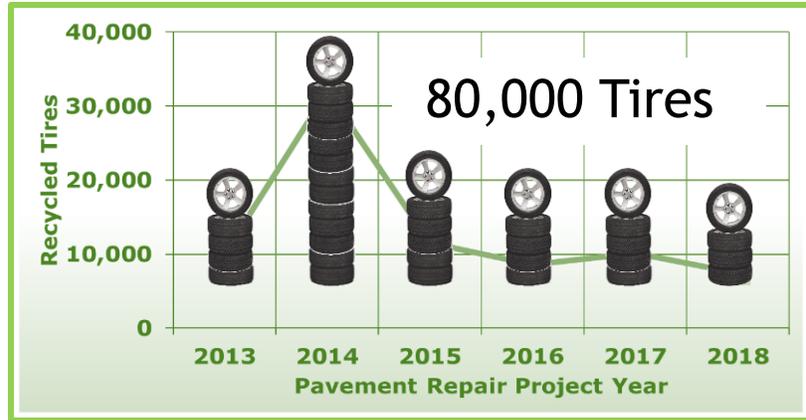
Asphalt overlays are typically applied to streets in "Fair" or "Poor" condition, depending on the traffic volumes. Rubberized Hot Mix Asphalt (RHMA) is a combination of liquid asphalt and crushed aggregate, that differs from conventional mix in that the asphalt is modified with recycled crumb rubber derived from rubber tires. An "overlay" is the placement of new asphalt over existing pavement. The Town has also used grants from CalRecycle to help offset some of the costs related to the RHMA overlays, as they tend to be slightly more expensive than conventional asphalt. RHMA provides the following benefits:

- Diverts rubber tires from landfills
- Slows reflective cracking from appearing than conventional asphalt
- Provides better skid resistance and better traction
- Dampens vehicular traffic sound
- Retains its darker color longer

The RHMA treatment type has been applied to the following projects:

- 2014 Pavement Repair Project
- 2016 Full Depth Reclamation Project
- 2017 Pavement Overlay Project
- 2017 Moraga Road (St Mary's to Draeger) Resurfacing Project
- 2018 Joint Moraga-Orinda Full Depth Reclamation Project

Over the course of six years of RHMA and rubberized cape seal projects, the Town has recycled and diverted an estimate of 79,600 rubber tires from California’s landfills. The graph below illustrates the scale of this recycling effort so far by the Town.



Rubber Tires Diverted from California Landfills

Reconstruction Treatment: Full Depth Reclamation

Reconstruction treatments may be used for streets in “Very Poor” condition. Full Depth Reclamation (FDR) is a reconstruction technique in which the full thickness of the asphalt pavement and a predetermined portion of the underlying materials (base and/or subgrade) is uniformly pulverized and blended with cement or lime to provide a stronger, homogeneous base material. By recycling existing materials, less virgin materials and off-haul/delivery trucking are required. A thin asphalt overlay is typically applied to the recycled pavement surface as a smooth wearing course. Cost savings of 30% to 40% compared to traditional reconstruction methods have been realized.

The FDR treatment type has been applied to the following projects:

- 2016 Full Depth Reclamation Project
- 2016 Joint Moraga-Orinda Ivy Drive Reconstruction Project
- 2018 Joint Moraga-Orinda Full Depth Reclamation Project

4. Street Cut Ordinance

On June 26, 2013, Town Council adopted Ordinance 240 adding Chapter 12.06 “Street Excavation and Pavement Restoration Regulations” to the Moraga Municipal Code to establish a pavement cut moratorium to preserve newly paved streets. The Town maintains all public streets to extend their lives as long as possible while seeking to minimize the cost of such maintenance. Independent studies have confirmed that a newly resurfaced street loses half of its life expectancy after it has been cut and starts deteriorating at a much faster rate. To discourage excavating newly resurfaced streets, street excavation and pavement restoration regulations were added to the Moraga Municipal Code to establish a pavement cut moratorium to preserve newly paved streets. The Street Excavation and Pavement Restoration Regulations Ordinance:

- Places a moratorium on cutting new or newly resurfaced streets, unless it is an emergency;
- Requires an excavation permit within public rights-of-way;
- Requires compliance with adopted standards and traffic control procedures;

- Requires a deposit, insurance, and contractor’s license; and
- Sets penalties for violations of the Ordinance.

5. Asset Management Software

Section 2108.1 of the Streets & Highway Code requires all public agencies to update their Pavement Management Program (PMP) inventory information for all public arterial and collector streets every two years and all public residential streets every five years to be eligible for state transportation grant funding. A PMP consists of a database of pavement sections, tracks existing and historical pavement condition data, and provides decision-making tools to help choose the most cost-effective maintenance strategies for streets.

In 2002, the Town selected StreetSaver® pavement management software developed by the Metropolitan Transportation Commission to comply with PMP requirements. The software is used by all bay area cities and counties, allows for consistent reporting among the agencies, and is a regional planning tool. The software maximizes the cost-effectiveness of the maintenance treatment plan by recommending a multi-year street maintenance and rehabilitation plan based user-defined repair types and criteria. A comprehensive preventative maintenance program is a critical component of this plan, as these treatments extend the life of “Good” condition pavements at a much lower cost than waiting until rehabilitation or reconstruction is needed. To this end, various ‘what-if’ analyses (scenarios) can be conducted to determine the most cost-effective plan for maintaining the Town’s street network at various funding levels.

IV EXISTING PAVEMENT CONDITIONS

1. Pavement Management Technical Assistance Program (P-TAP)

The Town garnered a 2018 P-TAP grant to reassess the conditions of all 442 current sections of public streets and produce a budget options report. The budget options report examines the overall condition of the street network and highlights the impacts of various funding levels on the network pavement condition and deferred maintenance funding shortfalls. The Town’s StreetSaver® software was used for this evaluation. The intent of this program is to develop a maintenance strategy that will improve the overall condition of the street network to an optimal level.

2. Pavement Condition Index

The Town is responsible for the maintenance and repair of 55.95 centerline miles of paved streets. This includes 13.8 miles of arterial, 15.8 miles of collector, and 26.3 miles of residential streets. The network is defined as a complete inventory of all streets and other pavement facilities in which the Town has jurisdiction and maintenance responsibilities. To facilitate the management of streets, they are subdivided into management sections identified as a street segment, which is homogeneous in geometry, function, and general condition.

Each street segment is inspected in accordance with the most recent versions of the Metropolitan Transportation Commission (MTC) “Pavement Condition Index Distress Identification Manual for Asphalt and Surface Treatment Pavements.” Pavement

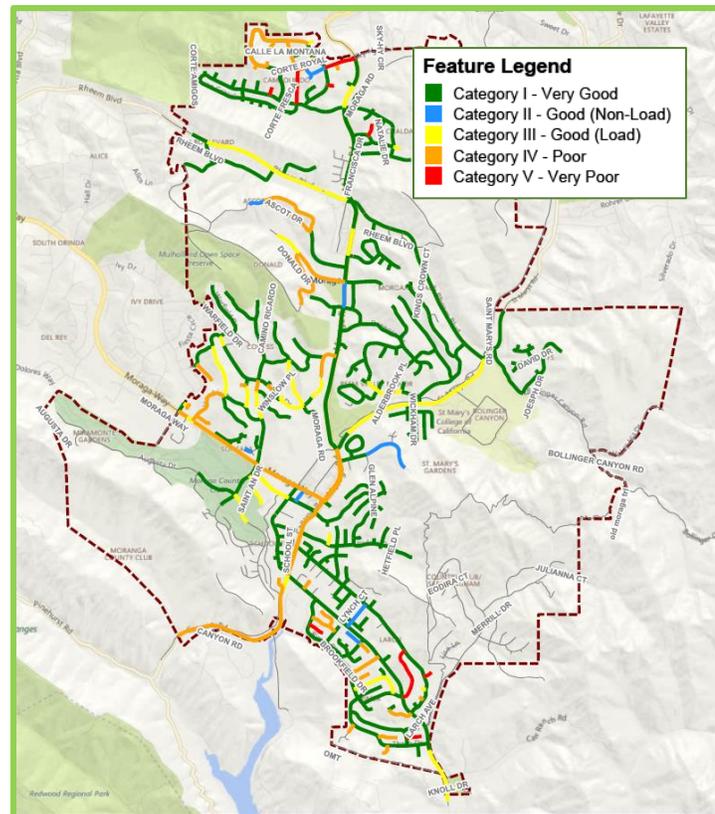
condition inspections are performed using a walking distress survey, where each inspection unit segment is walked by the inspector. Inspection sample sizes are either 50 or 100 linear feet in length and between 1000 to 4000 square feet for asphalt streets. For streets with a pavement width less than 80 feet, the entire width of the paved surface is inspected in each inspection unit. A minimum of 10% of the entire street section area is inspected by using the MTC representative sampling method. The quantity (square feet or linear feet, depending on distress) and severity (low, moderate, high) of the following distresses is recorded for asphalt sections: (1) alligator cracking, (2) block cracking, (3) distortions, (4) longitudinal and transverse cracking, (5) patch and utility cut patch, (6) rutting/depression, (7) raveling, and (8) weathering. Pavement distress data is then imported into the Town’s StreetSaver® database and Pavement Condition Index (PCI) calculations are performed.

Condition Category	Pavement Index Condition (PCI)		General Treatment Strategy
	Upper Limit	Lower Limit	
Good	100	70	Do Nothing/Corrective Maintenance
Fair	70	50	Preventative Maintenance/Surface Seal
Poor	50	25	Rehabilitation/Overlay
Very Poor	25	0	Reconstruction

Pavement Condition Index Range & General Treatment Strategy

The PCI Index is a measurement of pavement condition that ranges from 0 to 100. A newly constructed or overlaid street would have a PCI of 100, while a failed street (requiring complete reconstruction) would have a PCI under 25.

The 2018 P-TAP report rated the average overall PCI of the Town’s street network at 74, which indicates that the street network is in “Good” condition.

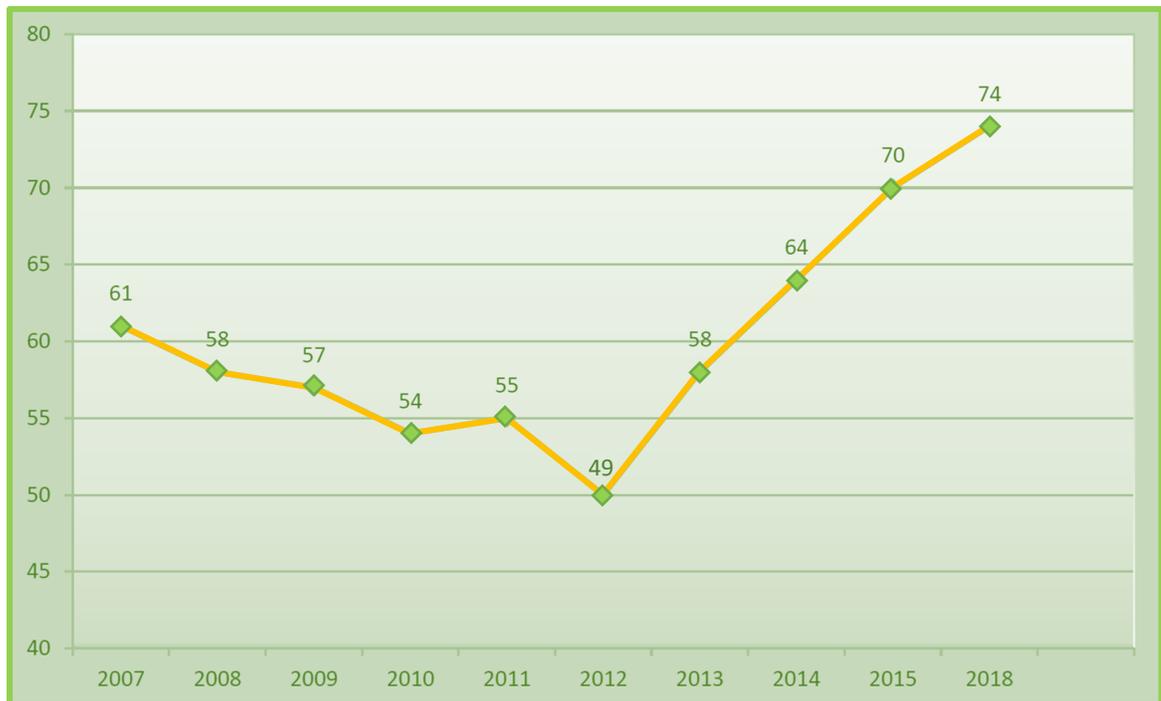


Current Pavement Condition Index Per Street

Functional Class	# of Sections	Centerline Miles	Lane Miles	Average PCI
Arterial	83	13.79	26.56	71
Collector	123	15.82	31.38	74
Residential	235	26.24	52.48	74
Totals	441	55.85	110.42	74

Street Network Statistics and Average PCI by Functional Class

The 2015 P-TAP report projected that the network PCI would decline to a 67 (or rolling average last three years of 69) by 2018 under original funding level assumptions. With the four new pavement management strategies implemented in 2016, the Town was able to stretch its investment and repair more streets. The Town also benefited from additional Road Maintenance and Rehabilitation Account and Garbage Vehicle Impact Fee revenues. As a result, the overall network increased by seven points from the 2015 P-TAP report projection. Other factors include the Town’s use of innovative cost-effective treatments in lieu of conventional methods. For instance, the rubberized chip seals and microsurfacing treatments are performing better than expected in StreetSaver®. Additionally, there was a change in the methodology of rating weather and raveling distresses implemented in 2016 which may be responsible for one to two points of the PCI increase between 2015 and 2018.



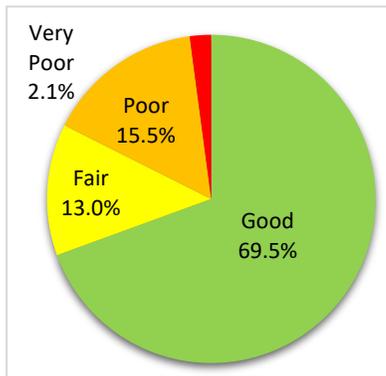
Historical Network PCI from 2007 to Present

3. Present Cost to Repair the Street Network

The Town’s street network replacement value is estimated at \$100.6 million in 2018. This asset valuation assumes replacement of the entire pavement network in present day dollars. This represents a significant asset for Town officials to manage.

The MTC Pavement Management Program (PMP) is designed to achieve an optimal network PCI somewhere between the low and mid 80’s, which is in the middle of the “Good” condition category. In other words, the system will recommend maintenance treatments to bring all of the streets in the Town to a “Good” condition, with the majority of the streets falling in the low to mid 80’s PCI range. Streets with a PCI in the 80’s (as opposed to 70’s) will likely remain in the “Good” condition category for a longer period if relatively inexpensive preventive maintenance treatments (surface seals, crack sealing, etc.) are used. Once the PCI falls below 70, more expensive rehabilitation treatments may be necessary.

The Budget Needs module of the PMP estimates a necessary funding level for the Town’s pavement program of \$40.8 million over remaining fourteen year (2019 - 2032) of Measure K in order to improve and maintain the street network PCI at an optimal level. Of this total, approximately \$9.3 million is needed in the first year alone. The fourteen-year cost of \$40.8 million exceeds the Town’s planned fourteen-year funding level of \$35.2 million by approximately \$5.6 million, or 16 percent.



2018 Percent Network Area by Condition

As mentioned earlier, the average PCI for the Town’s streets is 74 in 2018, which is in the “Good” condition category. As the 2015 P-TAP report projection was that the Town’s PCI would decrease to 67 or lower, this is positive news. **Approximately 70% of the Town’s pavement is in the “Good” condition category and the life of the pavement can be extended with the continued application of low-cost preventive maintenance treatments** such as crack and surface seals, which corrects minor faults and reduce further deterioration. Minor treatments are applied before pavement deterioration has become severe and usually costs less than \$6.50/square yard. However, 13.0%, 15.5%, and 2.1% of the Town’s street network are currently in the “Fair,” “Poor,” and “Very Poor” condition category, respectively.

Condition Class	PCI Range	Arterial	Collector	Residential	Total
Good	71-100	13.6%	22.7%	33.2%	69.5%
Fair	51-70	5.9%	2.1%	5.0%	13.0%
Poor	26-50	7.0%	2.7%	5.8%	15.5%
Very Poor	0-25	0.0%	1.3%	0.7%	2.0%
Totals		26.5%	28.8%	44.7%	

Percent Network Area by Functional Class and Condition

“Fair” condition pavements show some form of distress caused by traffic load related activity or environmental distress that requires more than a life-extending treatment. At this point, a well-designed pavement will have served at least 75 percent of its life with the quality of the pavement dropping approximately 40 percent. The pavement may require a slurry seal application or rubberized cape seal with varying degree of localized pavement repairs. These treatments typically range in cost from \$6.10 to \$30.00/square yard.

“Poor” condition pavements are nearing the end of their service lives and often exhibit major forms of distress such as potholes, extensive cracking, etc. At this stage, these streets usually require a 2" mill and overlay at \$46 to \$59/square yard.

“Very Poor” condition pavements indicate that the street has failed. These pavements are at the end of their service lives and have major distresses, often indicating the failure of the sub base or significant deterioration of the asphalt pavement. Streets at this stage require major rehabilitation, usually complete reconstruction or full depth reclamation (FDR). Estimated costs to perform an FDR are \$84 to \$119/square yard, depending on functional class.

The cost of the deferred maintenance backlog will stop increasing only when enough funds are provided to prevent streets from deteriorating into a worse condition category, or the whole network falls into the “Very Poor” category (i.e. cannot deteriorate any further). The deferred maintenance backlog refers to the dollar amount of maintenance and rehabilitation work that should have been completed to maintain the street in “Good” condition, but had to be deferred due to funding deficiencies for preventative maintenance and/or pavement rehabilitation programs. The actual repairs that are being deferred are often referred to as a “backlog.”

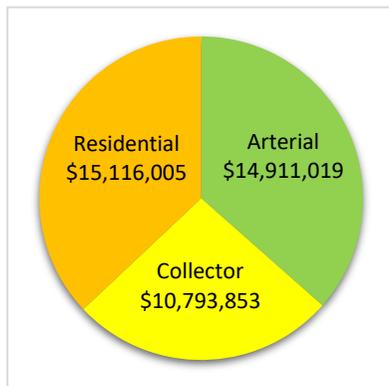
V BUDGET & FUNDING

1. Funding Needs to Eliminate Backlog

Based on the principle that it costs less to maintain streets in good condition than bad, the MTC PMP strives to develop a maintenance strategy that will first improve the overall condition of the network to an optimal level, and then sustain it at that level through the specified timeframe. The average PCI for the Town is 74, which is in the “Good” 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 Town’s street network. Using the PMP Budget Needs module, street maintenance needs are estimated at \$40.8 million over the next fourteen years. If the Town follows the strategy recommended by the program, the average network PCI will increase to 80. If, however, assuming zero investment in the Town’s pavement program and little or no maintenance over the next fourteen years, already distressed streets will continue to deteriorate, and the network PCI will drop to 34. The results of the Budget Needs analysis are summarized in the following Table:

Year	Budget	Rehabilitation	Preventative	Deferred	PCI Treated	PCI Untreated
2019	\$9,269,198	\$8,783,172	\$486,026	0	80	73
2020	\$2,563,750	\$2,171,294	\$392,456	0	79	71
2021	\$5,085,649	\$4,343,212	\$742,437	0	81	68
2022	\$2,113,745	\$1,819,225	\$294,520	0	80	66
2023	\$5,360,284	\$5,019,768	\$340,516	0	82	64
2024	\$313,827	\$129,977	\$183,850	0	80	62
2025	\$1,118,269	\$324,025	\$794,244	0	80	60
2026	\$1,131,994	\$192,296	\$939,698	0	79	57
2027	\$4,202,342	\$1,909,689	\$2,292,653	0	80	55
2028	\$1,164,877	\$482,290	\$682,587	0	79	53
2029	\$1,692,726	\$1,108,542	\$584,184	0	79	51
2030	\$3,157,863	\$1,838,238	\$1,319,625	0	79	49
2031	\$1,636,422	\$552,981	\$1,083,441	0	79	46
2032	\$2,009,931	\$36,026	\$1,973,905	0	80	44
Total	\$40,820,877	\$28,710,735	\$12,110,142	-	-	-



Budget Needs Funding Distribution by Functional Classification

The level of expenditure required to raise the Town’s pavement condition to an optimal network PCI of 80 and eliminate the current maintenance and rehabilitation backlog is \$40.8 million according to the budget needs analysis and recommended by the MTC PMP. Of the \$40.8 million in maintenance and rehabilitation needs shown, approximately \$12.1 million, or 29.7 percent is earmarked for preventive maintenance or life-extending treatments, while \$28.7 million or 71.3 percent is allocated for the more costly rehabilitation and reconstruction treatments. The Pavement Management Program recommends \$14.9 million, \$10.8 million, and \$15.1 million be earmarked for arterial, collector, and residential streets, respectively over the next fourteen years.

2. Budget Scenarios

Having determined the maintenance and rehabilitation needs of the Town’s street network, the next step in developing a cost-effective maintenance and rehabilitation strategy is to conduct ‘what-if’ analyses. Using the PMP budget scenarios module, the impact 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. For the purpose of this report, the following scenarios were analyzed for a fourteen (14)-year period (2019-2032) to coincide with when Measure K will sunset. The results are summarized below:

- a) **Optimal Pavement Maintenance Strategy (Unconstrained)** – This scenario as shows the effects of implementing the ideal investment strategy (as recommended by the MTC PMP Needs module).
- b) **Current Investment Level** – An average annual budget of \$2.52 million was evaluated over fourteen years, for a total of \$35.2 million, to determine the effects of continuing pavement maintenance at the current budget level. The overall Network PCI will decrease by one point, to 73, under this funding level.
- c) **Increase PCI by 5 points** – An average annual funding level of \$2.89 million, for a fourteen-year total of \$40.5 million, should increase the overall network PCI to 79 by 2032, and maintain that level through 2032.

Scenario Name	14-Year Budget	2032 PCI (Change)	2032 Deferred Maintenance	2032 % Good	2032 % Very Poor
1) Unconstrained	\$40.8 M	80 (+6)	\$0	91.4%	0.0%
2) Current Investment	\$35.2 M	73 (-1)	\$13.1 M	80.3%	8.6%
3) Increase PCI 5 Points	\$40.5 M	79 (+5)	\$519,000	88.7%	0.0%

Budget Scenario Summary

Scenario 1 – Optimum Pavement Maintenance Strategy (Unconstrained)

This scenario shows the effects of implementing the ideal investment strategy (as recommended by the MTC PMP Needs module outline in Section V. 1 above). Because it is more cost-effective to eliminate the deferred maintenance backlog as quickly as possible, the bulk of the deferred maintenance needs are addressed in the first year of the fourteen-year program, raising the overall average network PCI to 80. By 2032, 91.4% of the network improves into the “Good” condition category, a significant increase from the current level of 69.5% in “Good” condition. As shown on the budget needs section above, the budget needs for each year will fluctuate vastly to keep pace with eliminating accumulated deferred maintenance. The Town’s steady pavement revenue sources are insufficient to match budget needs of each year.



Scenario 2 – Current Investment Level

This scenario shows the effects of the Town’s current budget for street maintenance and rehabilitation totaling \$35.2 million over fourteen years. Assuming an inflation factor of 2%, the average annual funding of \$2.52 million is based on steady reliable funding sources of Measure K, Road Maintenance and Rehabilitation Account, and Garbage Vehicle Impact Fees. The money will be spent in three-year cycles, with each year’s funding to focus on a treatment category (preventative maintenance, followed by overlays or rehabilitation, and then reconstruction). Under this scenario, the overall network PCI will decrease by one point, from 74 in 2018, to 73 by 2032. Under this investment level, the deferred maintenance backlog increases, from \$9.3 million in 2019, to \$13.1 million in 2032, mainly due to the percentage of the street network that declines into “Very Poor” condition, which require expensive reconstruction. The street network in “Very Poor” condition increases, from 2.1% in 2019, to 8.6% in 2032.



Scenario 3 – Increase PCI by Five Points

This scenario analyzes the funding level that would be required to increase the 2018 PCI by five points over the next fourteen years, which requires an average annual investment level of \$2.9 million, for a total of \$40.6 million. At this funding level, the deferred maintenance decreases from \$6.4 million in 2019, to \$0.5 million in 2032. The percentage of the street network in the “Good” condition increases from 69.5% in 2018, to 88.7% in 2032. The percentage of roads in “Very Poor” condition decreases to 0%, from the 2018 level of 2.1%.



3. Funding Sources & Expenditures

The Pavement Management Program Revenue and Expenditures table below provides a comprehensive summary of the various sources of revenue and expenditures as included in the Town's June 30, 2018 year end financials for Fund 711 (Pavement Management Program). The Town has invested \$14.5 million in street improvement projects over the past six years from multiple Fund 711 funding source.

Expenditure Types (In Thousand \$)	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	Total
Pavement Projects	52	2,688	4,321	2,321	2,362	2,657	14,401
COP Debt Service		498	597	597	598	600	2,890
Other Street Projects				14	56		70
TOTAL	52	3,186	4,918	2,933	3,017	3,257	17,362

Funding Sources (In Thousand \$)	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	Total
Measure K Receipts		498	1,909	1,498	1,589	2,908	8,402
COP Proceeds		2,120	2,745	1,372	1,300		7,537
Gas Tax - Fund 205	51	241	\$207	50			549
Measure J -Fund 210		200					200
Prop 42 - Fund 220	1						1
Garbage Impact Fees				9	37	338	384
CalRecycle Grant		126			84		210
Interest				4	7	11	23
Utility Refund		57					57
TOTAL	52	3,186	4,918	2,933	3,017	3,257	17,362

In addition to the pavement investment through Fund 711, numerous pavement projects were completed that were funded by various funds not accounted for in Fund 711. Following is a list of the projects and their funding sources.

- 2016 Rheem Boulevard Landslide Repair and Repaving Project (partnered with SummerHill developer as part of the Bella Vista Subdivision)

CCTA Grant	\$729 K
Developer Contribution*	\$1,518 K

- 2016 Rheem Boulevard Parking Reconfiguration (includes slurry seal)

Measure J - Fund 210	\$99 K
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- 2017 Moraga Road (St Mary's to Draeger) Resurfacing Project

Federal Grants (OBAG)	\$668 K
Measure J - Fund 210	\$149 K

- 2017 Livable Moraga Road Segment 3 Restriping (funded by SummerHill developer as part of the Harvest Court Subdivision and includes slurry seal)

Developer Contribution	\$55 K
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- 2018 Gas Pipeline Replacement Project (funded by PG&E and includes St. Mary’s Road slurry seal)

Utility Contribution*	<u>\$29 K</u>
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Total	\$3,247 K
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* Projects completed by Developer or PG&E, funds did not pass through the Town.

a) Measure K

One-Cent Local Sales Tax

Pursuant to Section 7265 of the California Revenue and Taxation Code, the one-cent transaction and use tax became operative on April 1, 2013. At that time, retailers began collecting Moraga’s additional local sales tax at the time of sale and remit the funds to the State Board of Equalization, which administers the tax. The Town started receiving the additional tax revenue in the third quarter of calendar year 2013.

In 2013, \$7.7 million in Certificates of Participation (COP) were executed to provide funds to finance improvements to the Town’s infrastructure, fund a debt service reserve fund for the Certificates, and pay certain costs incurred in connection with the execution and delivery of the certificates. The proceeds of the Certificates were used as a tool to leverage additional sales tax as a means to finance a road repair and drainage infrastructure program that will address the deferred maintenance of the Town’s streets.

b) Garbage Vehicle Impact Fees

RecycleSmart, on behalf of the Town, retains the services of a third party firm to conduct regular garbage vehicle impact fee studies. The analysis determines the impact of solid waste, recycling, and yard waste vehicles on street maintenance costs (i.e., maintenance, rehabilitation, and reconstruction costs) within the Town’s maintained road system. The 2014 report identified \$333,000 per year in street impacts associated with the Town’s Refuse Vehicle traffic.

In 2018, an update of the analysis was conducted with assumptions updated to reflect the current collection methodology, vehicles, and changes in the Town’s street maintenance funding levels. The updated analysis has identified approximately \$792,500 per year in street impacts associated with the Town’s Refuse Vehicle traffic. On January 24, 2018, CCCSWA Board of Directors approved increasing the garbage vehicle impact fees to generate \$633,216 annually, effective March 1, 2019. The Town may choose to further increase the \$633,216 to \$792,500 to go towards the Pavement Management Program in the future.

c) Road Maintenance and Rehabilitation Account



On February 8, 2017, Town Council submitted Letters of Support for two companion bills, Assembly Bill AB 1 (Frazier) and Senate Bill SB 1 (Beall) that were introduced at the outset of the new legislative session aimed at helping address the significant backlog of State and local transportation infrastructure needs.

On April 28, 2017, the Governor signed SB 1, which is known as the Road Repair and Accountability Act of 2017. To address basic road maintenance, rehabilitation and critical safety needs on the State highway and local streets and road system, SB 1 increases per gallon fuel excise taxes, increases diesel fuel sales taxes and vehicle registration fees, and provides for inflationary adjustments to tax rates in future years.

On November 1, 2017, the State Controller began depositing various portions of this new funding into the newly created Road Maintenance and Rehabilitation Account (RMRA). A percentage of this new RMRA funding will be apportioned by formula to eligible cities and counties pursuant to Streets and Highways Code (SHC) Section 2032(h) for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system.

The League of California Cities updated as of January 11, 2018, two fiscal years of revenue estimates for the Town of Moraga in the amount of \$95,106 in FY 2017/18 (partial year), and \$276,922 in FY 2018/19.

SB 1 emphasizes the importance of accountability and transparency in the delivery of California's transportation programs. Therefore, to be eligible for RMRA funding, the statute requires cities and counties to provide basic annual RMRA project reporting to the California Transportation Commission. In keeping with the legislative requirements of SB 1, street segments must be selected utilizing the Town's StreetSaver® pavement management software specifically because they provide the highest value and largest return on investment for the RMRA funding being spent.

d) Other One-Time Funding Sources

Other one-time funding sources such as grants, developer contributions, and other restricted funds allows for the Town to augment the Measure K, Garbage Vehicle Impact Fees, and Road Maintenance and Rehabilitation Account steady reliable revenue streams to improve pavement conditions above what was projected by the Town's StreetSaver® pavement management software.

CalRecycle Grants

The State of California Department of Resources Recycling and Recovery (CalRecycle) administers a program to provide opportunities to divert waste tires from landfill disposal, prevent illegal tire dumping, and promote markets for recycled-content tire products. The Rubberized Pavement Grant Program is designed to promote markets for recycled-content surfacing products derived from 100% recycled California-generated waste tires. It is aimed to encourage first-time

or limited users of rubberized pavement in two project types - Rubberized Asphalt Concrete (RAC) and Rubberized Chip Seal.

OneBayArea Grant

The Metropolitan Transportation Commission (MTC) is responsible for establishing the criteria and policies for allocating federal transportation funding in the San Francisco Bay Area. In 2012, MTC integrated various transportation programs with California's climate law (Senate Bill 375) and the Sustainable Communities Strategy to create the OneBayArea Grant (OBAG) Program. OBAG allows flexibility to invest in transportation categories such as Transportation for Livable Communities (TLC), bicycle and pedestrian improvements, local streets and roads preservation, and planning activities. OBAG also supports MTC's commitments to advancing the Bay Area's land use and housing goals. In 2015 and 2016, MTC adopted the selection criteria and programming policy for the second round of the OBAG (OBAG 2) for Fiscal Year (FY) 2017/18 through FY 2021/22 (per MTC Resolution No. 4202, Revised).

These federal grants are ideal funding sources to apply on eligible arterial streets. The Town garnered OBAG funding towards the following projects:

- 2017 Moraga Road (St Mary's to Draeger) Resurfacing Project
- 2019 Moraga Way and Canyon/Camino Pablo Improvements Project

Other Restricted Funds

The Town relies on other restricted funds such as Gas Tax (Fund 205), Measure J (Fund 210) from CCTA, Traffic Congestion Improvement Act (Fund 220) approved through California Proposition 42, developer contributions from SummerHill, and utility contributions. These funds were used as matching requirements for grants or to meet the needs of the various capital projects.