



# 2014 Revised 5 Year Road Plan

May 31, 2014

# Presentation Overview

- Improved Roads Boost:
  - Influx of residents
  - Property values
  - Collection rates of road fees
  - # of residents paying for services (water, sewer, etc)
- Tahitian Village Road Statistics demonstrate criteria for New Road Projects need to be re-defined
- Revised 5 year Road Plan created using new road selection criteria



# Revised 5 Year Plan

- Presented to Road Committee – April 10<sup>th</sup>
  - Agreed to Support Presenting to Board for Revision
- Presented to BCWID#2 Board – April 17<sup>th</sup>
  - Agreed to Support Presenting to Tahitian Residents at Formal Annual Road Meeting (May 31<sup>st</sup>)
  - Agreed to Vote (Yeah/Nea) on May 31<sup>st</sup> to Approve/Deny after presentation to the Residents

# Current Bylaws for Road Selection

**By order of priority from most important (1) to least important (10)**

- #1 Master Roadway Plan (Connects to County Road, time of year, etc)
- #2 Road Condition/road classification (1-7/Major arterial, Arterial, Collector)
- #3 Natural disaster preempts current road plans (ie bridge out, flooding, etc)
- #4 Safety issues (ie road shoulders, exit from subdivision)
- #5 Available funds (cost of replacing water & sewer pipes, culverts, flat/hilly)
- #6 Interlocal agreements with Bastrop County, City of Bastrop, and/or Pine Forest (equipment & resource availability)
- #7 Price of materials (asphalt, concrete, road base, etc)
- #8 Density of homes and apartments on the road (old homes vs new homes)
- #9 Residents collect funds to have their roads paved early.
- #10 Houston toad considerations.

# Current Basic Criteria Used for Road Selection

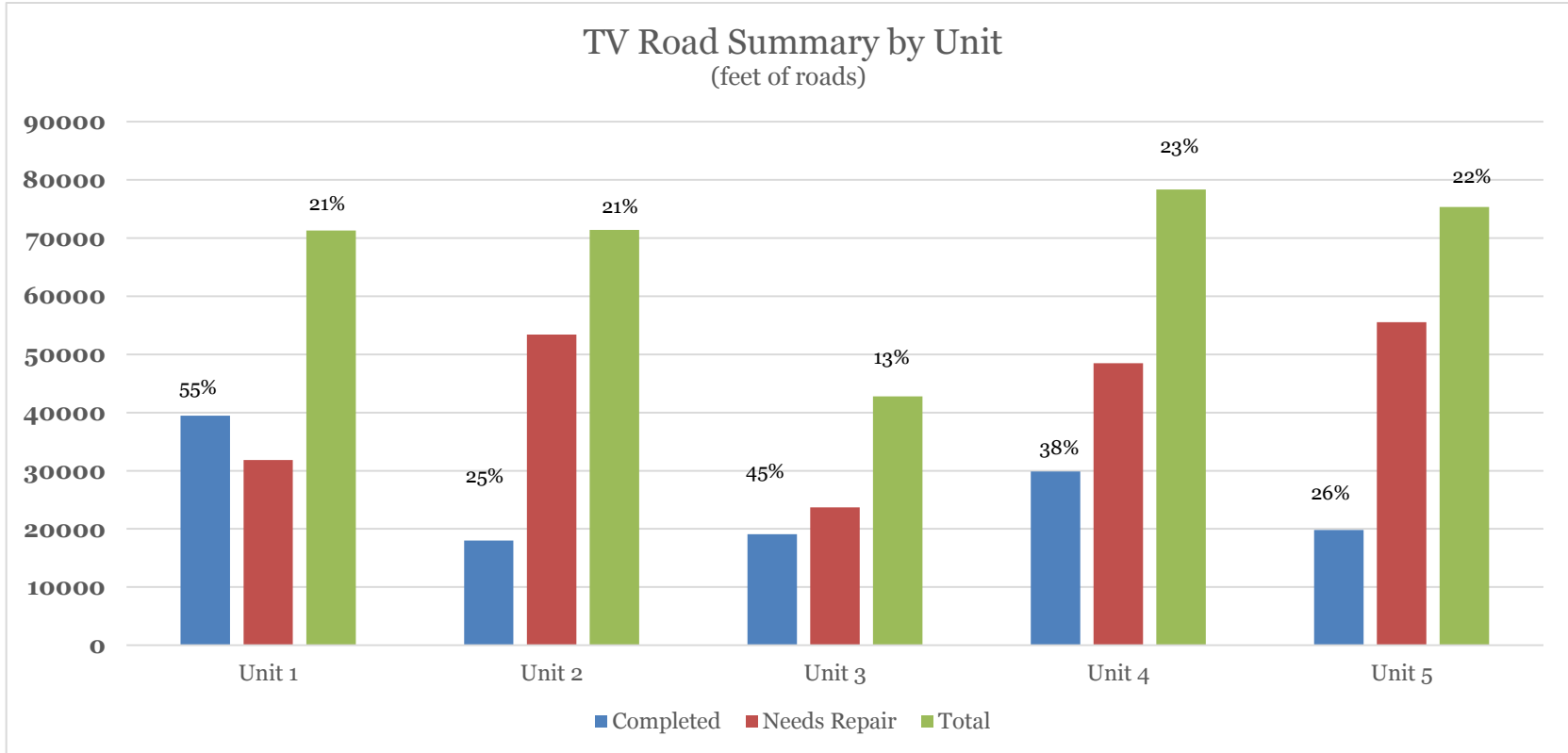
## By order of general priority

- #1 Connects to County Road
- #2 Equal (fair) mileage paved per unit
- #3 Type of Road
  - #1 Arterial Road
  - #2 Collector Road
  - #3 Residential Road
    - Road poses Critical Risk (evacuation route, flooding homes, hazardous)
    - Mail or Bus routes heavily traveled with road concerns
    - Road improvement would create new home development

## Results of first 40 years

- All Arterial roads completed
- 50% of collector Roads completed
- 37% of all Roads completed
- Selections are becoming more subjective

**Need New Analytics Based Criteria**



- Completed Feet per Unit are not Comparable
- Total Feet of Road in each Unit Unequal (42,000-78,000)
- % Completed per Unit is greater in Units 1 & 3

**New Criteria Should Not be Based on Equal Feet per Unit**

## Home Distribution by Completed/Incomplete Roads Per Unit

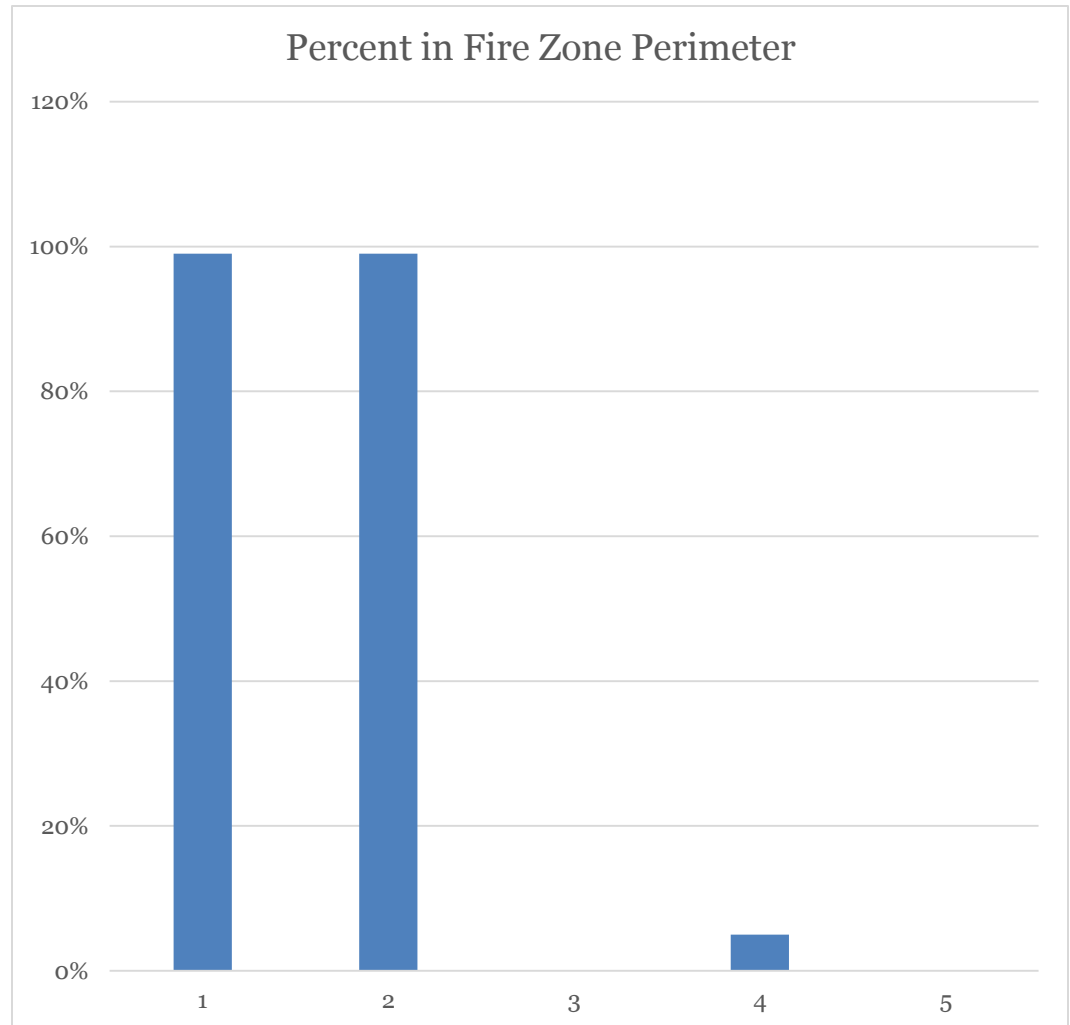


- Highest % Homes on Paved Streets (Unit 1, Unit 4)
- Highest % Homes where Streets are in Need of Repair (Unit 2 -69% & Unit 3 – 58% )
- Highest Number of Homes where Streets are in Need of Repair (Unit 2 – 184, Unit 1-107, Unit 3- 106)
- Areas with Higher # of Homes per Street need more emphasis

**New Criteria Should be based on  
Highest Density of Homes per Street to  
Impact Highest # & % of Residents**

## Current Analytics % of Roads Inside the Fire Damaged Area

- 99% of Unit 1 & 2 fall within 2012 Fire Perimeter
- Road Damage to previous Emulsion Roads reduced Property owners home values & decreased access to many homes
- Priority should be given to roads damaged in areas within Fire Perimeter over dirt roads never improved in other areas



**New Criteria Should Prioritize Fire Damaged Emulsion Roads in Unit 1 & 2**



# Original Proposed Road Projects – 5 Year Plan

2014			2015			2016			2017			2018		
Rd	Ft	U	Rd	Ft	U	Rd	Ft	U	Rd	Ft	U	Rd	Ft	U
Lamoloa	2400	5	Lamaloa	1600	5	Papaloa	1100	1	Puu Waa Waa	2400	5	Keawakapu	4300	3
Kalalea	2060	3	Alele	3150	2	Pele Ct	200	1	Mokulua	3230	5	Mokuleia Cir	2550	4
Pahoa	650	3	Peahi Ct	200	2	Kulua	850	1						
Kaeleku	500	3	Paia Ct	450	2									
S. Pahihi	600	2												
Total	6210			5400			2150			5630			6850	

**5 Year Plan = 1 mile (5200 feet)/year average where funding now allows for closer to 2 miles (10,400)/year**

**100 Homes added to County/City Roads for a total of 738 Homes—  
Leaving 459 of 1197 Homes on Unpaved Roads (38%)**

# Original Proposed Road Projects – Summary

Unit	2014	2015	2016	2017	2018	Total
Unit 1	0	0	2150	0	0	2150
Unit 2	600	3800	0	0	0	4400
Unit 3	3210	0	0	0	4300	7510
Unit 4	0	0	0	0	2550	2550
Unit 5	2400	1600	0	5630	0	9630
Total	6210	5400	2150	5630	6850	26240

**Many Units not adequately Represented  
Highest Populated Units & Fire Areas Represents Lowest Totals**

# Data Assessed to Build New 5 Year Plan

- Bastrop WCID Master Plan by BEFCO
  - Streets Paved within each Unit (by Feet)
  - Streets Not Paved within each Unit (by Feet)
- List of Active Water Meters
  - Houses on Paved streets by Unit
  - # of Houses on Unpaved streets by Unit
  - Feet of Unpaved Street divided by # of Houses on that Street
- Bastrop Bus Routes
- BCWCID Maps
  - Connection to County Roads
  - Collector Streets
  - Feeder Streets & the streets that feed into each (where other streets access a feeder street to get out of their area)

# Results of Revised 5 year Plan

- Direct Benefits to Current Homeowners
  - 2/3 (64%) of all Homes not currently on County/City approved roads will have Paved Roads by end of 2018
  - 360 Additional Homes will have their streets paved with new 5 year plan
  - 40 Additional Homes will see improved access based on feeder road improvement
- After 5 Year Plan completed
  - Majority of remaining unpaved streets will be those with 5 or less homes
  - Only 16% of Tahitian Village homes remain on non County/City streets
  - 158,970 feet of roads (30 miles) remain unpaved

# Ranking Results (Sample Unit 1)

Streets Not Up to Standards												
Unit	Priority	Collector Road	Feet Proposed to be Paved Street	Length Ft	Homes	Feet Between Homes	Full Ratio of Feeder Rd & Connecting Rds	Originally Planned	Off CTY Road	Existing Condition	Bus Route Y/N	Comments
1	1		400 Lei Ct	400	6	67	67		X		3 No	Off Kona
1	2		1100 Papaloa Lane	1100	10	110	94 P		X		3 No	Off Kona
1	2		220 Pele Ct	220	4	55	p				3 No	Ct off of Papaloa Proposed plan
1	3	Collector	950 Olaa	950	4	238	138		X		2 No	Feeder road to 3 main populated areas. Use City \$\$ to Complete
1	3		750 Pahala Ct	750	9	83					3 No	off Feeder road Olaa
1	3		650 Homonu Ct	650	4	163					3 No	off Feeder road Olaa.
1	4		1640 Pahoiki Lane	1640	12	137	120		X		3 No	Use Fire \$\$ Off Kaanapali. Many houses rebuilt after fire
1	4		160 Kou	160	3	53						
1	5		400 Kimo Ct	400	5	80			X			Off Kaanapali
1	6		850 Kulua Ct	850	6	142	142 P		X		3 No	Off Kaanapali
1	7	Feeder	700 Kawela	700	2	350	152					Off Kaanapali
1	7		750 Lai	750	7	107						
1	7		830 Kamoi (E&W)	830	6	138						

\*\*Existing Condition:

- 1 – County/City Road
- 2- Weathered Asphalt with Patches
- 3- Weathered and Rutted Asphalt
- 4 – Bladed with Gravel Base
- 5 – Rutted with Thin Gravel Base
- 6 – Undeveloped, not in use

# Revised Road Projects – 2014

Unit	Collector Road	Total Paved	Street	Length Ft	Homes	Feet Between Homes	Average using all roads serviced by feeder	Original Plan	Off CTY Road	Existing Condition	Bus Route Y/N	Comments
3		2060	Kalalea	2060	24	86	86 P		X		4 No	Off Keanahalululu
4		2800	Ulupau & Kalama	2800	12	233	233 P		X		4 No	Fire Damaged Road with Drop Offs
5		2400	Lamalaoa	2400	9	267	267 P		X		4 No	Western Portion currently not paved
1		400	Lei Ct	400	6	67	67		X		3 No	Off Kona
2	Collector	3150	Alele	3150	13	242	197 P		X		3 Yes	Off Tahitian
2			Paia Ct	450	1	450	P/Not Accepted				4 No	Only 1 house on cul-de-sac with 1 other being built.
2		200	Peahi Ct	200	3	67	p		X		3 No	Off Alele
2	Feeder	320	Umipaa	320	1	320	29		X		3	Feeder Road for Papawai, Koae Ct gives 29ft per house.
2			Papawai Dr	2430	7	347					3	
2			Koae Ct	220	3	73					4	
	Total	11330										

**1<sup>st</sup> - Minimized Disruption this Year -Kept Originally Planned 2014 Streets with High Density and/or At Risk Roads (Kalalea, Ulupau/Kalama, Lamalaoa)**

**2<sup>nd</sup> – Highest Priority Roads in other Units (1&2)**

# Revised Road Projects – 2015

Unit	Collector Road	Total Paved	Street	Length Ft	Homes	Feet Between Homes	Average using all roads serviced by feeder	Original Plan	Off CTY Road	Existing Condition	Bus Route Y/N	Comments
1		1100	Papaloa Lane	1100	10	110	94	P	X		3 No	Off Kona
1		220	Pele Ct	220	4	55		p	X		3 No	Ct off of Papaloa
1	Collector	950	Olaa	950	4	238	138		X		2 No	Use City \$\$ to Complete Feeder road to 3 main populated areas.
1		750	Pahala Ct	750	9	83			X		3 No	off Feeder road Olaa.
1		650	Homonu Ct	650	4	163			X		3 No	off Feeder road Olaa.
2		1440	Kanaio	1440	20	72	72		X		3?	Use Fire \$\$ Off Koloiki
2		2120	Kaupo	2120	16	133			X			Use Fire \$\$ Off Koloiki
2	Collector	1374	Wahane - W. of Akaloa	1374	7	196	47		X		3 No	Use Fire \$\$ Off Akaloa. Collector Road for Huelo, Koko, Keaau, Hekili, Nanakuli, & Kaupa
4			Huelo Ct	350	4	88					4	
2			Hekili	1750	5	350					2	
4			Koko Ct	450	2	225					3	
4			Keaau Ct	800	4	200					4	
4			Nanakuli Dr	1250	5	250					3	
4			Kaupa Ct	400	2	200					3	
3		720	Keanahalululu	720	12	60			X		4 No	On flats- dead ends at railroad
4		2120	Konahuanui Lane	2120	12	177			X		3 No	Between Akaloa & MokuManu
	Total	11444										

**Highest Populated Units & Fire Areas Represents Highest Totals  
(2015 & 2016)  
Due to 10,400 (2 miles) added to Fire Area with Fire \$\$**









# Roads Removed from Original Plan

Unit	Collector Road	Total Paved	Street	Length Ft	Homes	Feet Between Homes	Avg using ALL Roads serviced by Feeder	P/S	Off CTY Road	Existing Condition	Bus Route Y/N	Comments
5			Puu waa waa	2400	8	300		P/Not Accepted	X		5 No	Low Home Density. Off Lamoloa
3			Pahoa Lane	650	2	325		P	X	4	No	Less than 3 houses & Low Home Density. Off Kaanapali.
3			Keawakapu	4300	2	2150		P/Not Accepted	X			Less than 3 houses & Low Home Density. Off Lamoloa
4			1225 Mokuleia Cr	2550	5	510		P/Only Part Accepted	X	4	No	Flooding on Lower 1/2. Due to low house density, only pave that half. Off Akaloa
5			900 Mokulua Lane	3230	3	1077		P/Only Part Accepted	X	4	1 stop	Bus goes down between Pohakuloa and Waikakaaua. Pave only between those 2 roads.
5			Lamaloa	1800	1	1800		P/Not Accepted	X	5	No	Low Home Density & Less than 3 Houses

**Streets Removed due to Low # of Residents**

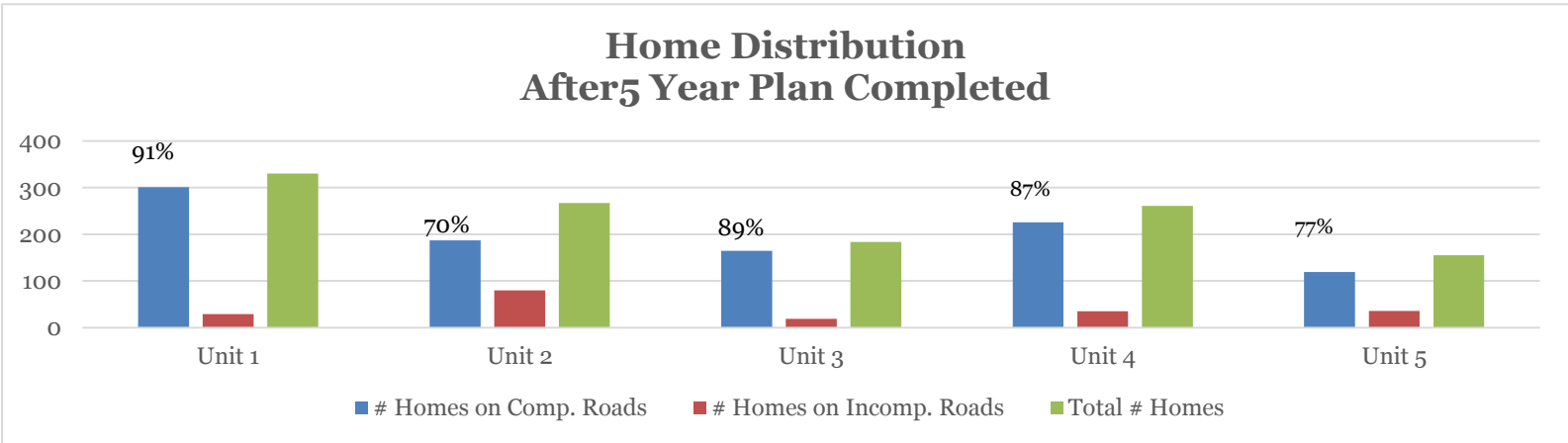
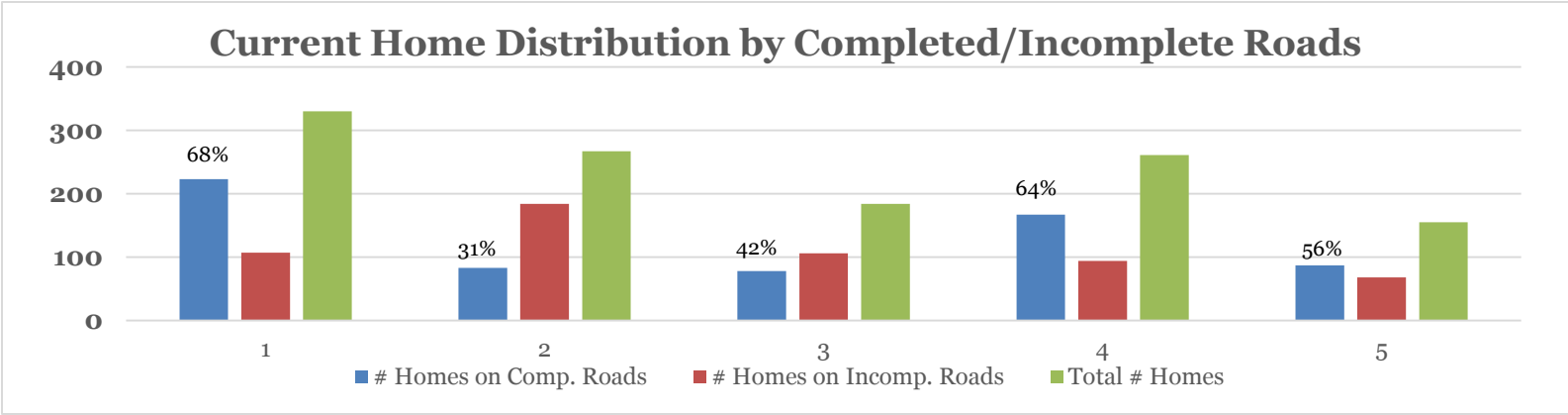
## Original Proposed Road Projects – Summary

Unit	2014	2015	2016	2017	2018	Total
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Unit 2	600	3800	0	0	0	4400
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Unit 4	0	0	0	0	2550	2550
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Total	6210	5400	2150	5630	6850	26240

## Revised Road Projects – 5 Year Plan

Unit	2014	2015	2016	2017	2018	Total
Unit 1	400	3670	1800	3530	0	9400
Unit 2	3670	4934	5630	1100	3430	18764
Unit 3	2060	720	1700	1860	0	6340
Unit 4	2800	2120	900	0	3271	9091
Unit 5	2400		1600	3150	2460	9610
Total	11330	11444	11630	9640	9161	53205

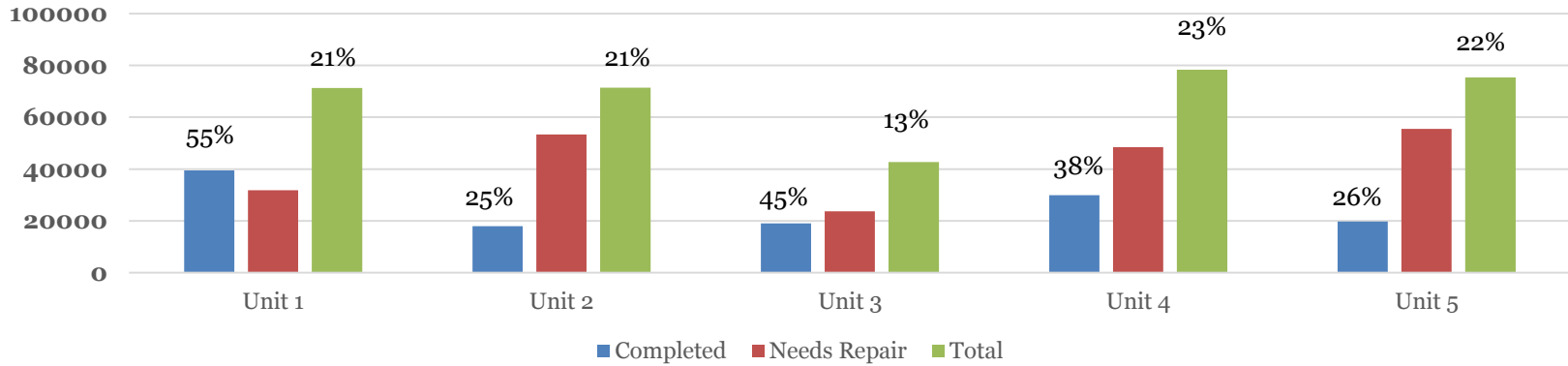
**10,400 feet -2 miles- using Fire \$ (\$230 TV & \$60 City)  
 Remaining 42,805 = 1.65 miles per year**



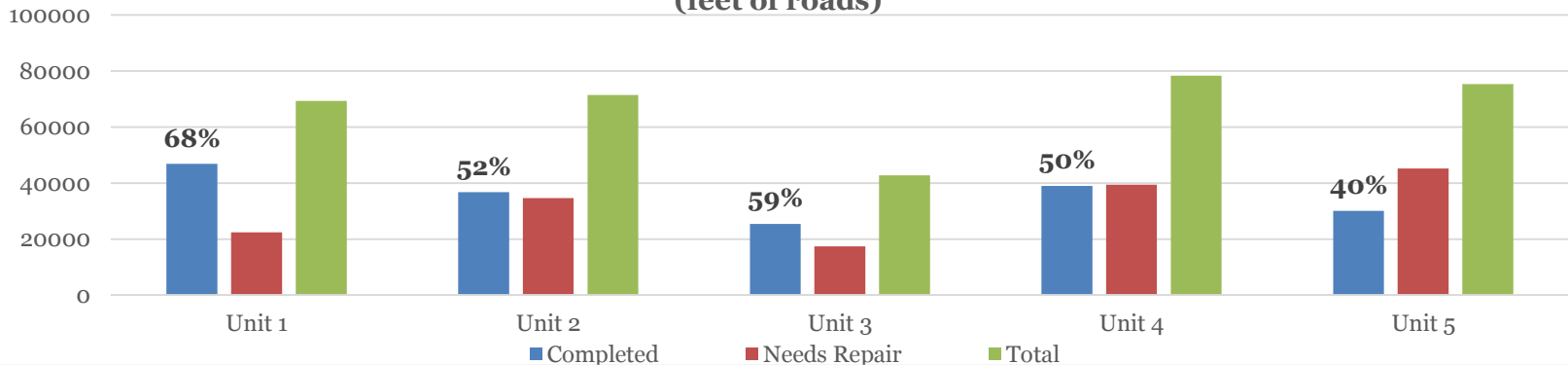
	Today	5 Year Plan (March)	Revised 5 Year Plan
% of Homes on City/County Roads	53%	62%	84%
# Homes On City/County Roads	638	738	1000
# of Homes Not on City/County Rds	559	459	197
Remaining Homes Not on City/County Rds			

Unit 1 – 29, Unit 2 – 80, Unit 3 – 19, Unit 4- 35, Unit 5 - 34

### Current Road Summary by Unit (feet of roads)



### Summary After Revised 5 Year Plan (feet of roads)



**Equitable Plan Benefitting more Residents &  
Maximizing Funds over 5 years  
158,970 feet (30 miles) Remaining to Complete**

# New 5 Year Plan Road Selection Criteria & Process

## Selection of Roads for 5 Year Plan Prioritization

1. Determine House Density for each Street (Sample: 2,000'/5 homes = 400'/house)
2. Rank Streets by Priority for Construction
  1. Determine the 50 roads with the highest density of homes. Lowest No is 1 foot/house
  2. Exclude any of the 50 roads with the highest home density that do not have a minimum of 3 homes and/or connect to an approved/accepted County or City road by the time construction will begin
  3. Refine the ranking based on the following factors:
    1. Critical Risks (flooding, natural disasters & safety issues) that cannot be repaired by other method
    2. Extra Funds allowed for Fire Perimeter Roads
    3. Collector or Feeder Roads
    4. Bus Route/Post Office Route
    5. In some cases, a partial road may be assessed for home density using only a section of the road. Examples could be: the road is divided by an arterial road; the bus only goes down a section of a road, etc.
3. Create the Road Plan for Years 1-5
  1. For Year 1-5 determine maximum feet of streets allowable . See *Factors Affecting Maximum Allowable Annual Road Construction*
  2. Use the above ranking to complete Road Plan for Year 1-5
4. Once highly dense streets are addressed, focus on less populated areas, streets with less than 3 homes, and undeveloped roads. In all cases, roads must be contiguous with a city/county road.

# New 5 Year Plan Road Selection Criteria & Process

## **Exceptions & Other Considerations**

1. All roads not on the 5 year plan will have access to road repair (when funds allow) but will not be inserted into the 5 year plan without qualifying under the ranking process unless a severe safety or natural disaster issue arises that cannot be repaired.
2. Some roads may have their ranking/priority delayed based on various factors, but all efforts will be made to correct these issues in order to keep the purpose of paving densely populated roads as a priority. A few examples of the known factors that could impact these roads are:
  1. Easement/Right of Way issues
  2. Roads with recent high cost repair
  3. Planned high usage by heavy equipment vehicles which might destroy new pavement (logging trucks)
  4. Roads with disputes with other entities (City of Bastrop, Bastrop County, Pine Forest, etc)
  5. Houston Toad breeding season
  6. High cost of material (concrete, etc) without applicable funds for given year
  7. Utilities such as water, sewer infrastructure



# New 5 Year Plan Road Selection Criteria & Process

## **Factors Affecting Maximum Allowable Annual Road Construction**

1. Total Funds Collected from Road Fees and other sources
2. Percent of Road Fees collected that have approved for Road Repair vs Road Pavement Construction
3. Cost of Materials to be used
4. Resources/Equipment availability by City and/or County
  1. If resources are not available for all work planned, higher costs will be incurred for BCWID#2 Road District to pay for those items with outside contractors

Note: All final decisions on the Road Plan will be approved by the BCWID#2 Board of Directors with approved plan submitted to the Bastrop County & Bastrop City.

# Timeline

