PAVEMENT MANAGEMENT PLAN

Environmental Quality & Public Works Committee

June 21, 2016

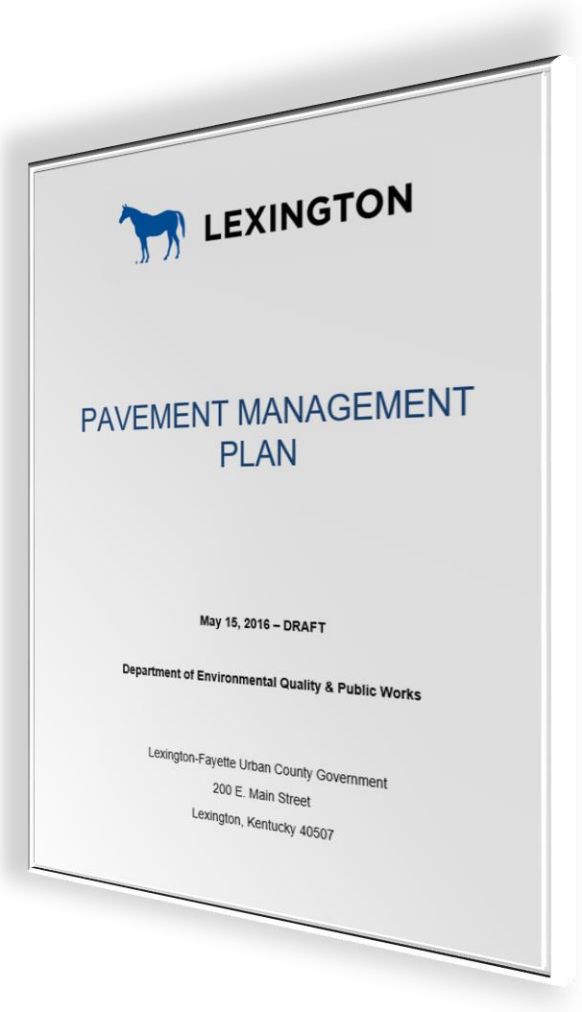
LEXINGTON

Agenda

- Materials included in EQPW packet
- Summary of FY16 paving activities
- Subcommittee process
  - Develop a new pavement management policy for LFUCG
  - Consider roadway functional classification in budget allocation and project prioritization
  - Design a multi-year budget and maintenance strategy for city streets
- Pavement Management Plan elements
- Comparison of benchmark cities

Materials in EQPW Packet

- Pavement Management Plan
- FY17capital improvement plan
  - Major/Minor Arterials
  - Collectors
  - Fiscally constrained at $12.8M
- District maps with roadway functional class



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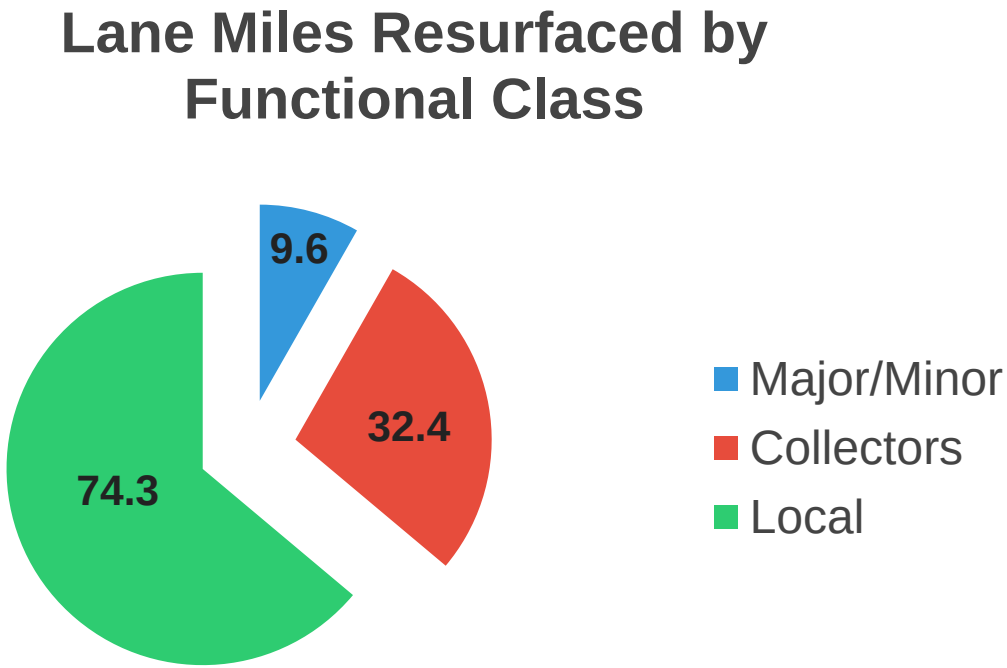
Summary of FY16 Paving Activities

Total Paving Budget	**$12.4 M**
Cost of ADA ramp compliance	**$1.0 M**
Total Lane Miles Resurfaced	**116.3**



Subcommittee Process

- CM Fred Brown – Chair
  - CM Jennifer Mossotti
  - CM Russ Hensley
- Process began in January 2016
  - Met seven times as a group
- Developed Pavement Management Plan (attached)

Pavement Management Plan Elements

1. Objectives
2. Roles and Responsibilities
3. Annual Budget Allocation
4. Process for Development of Paving Projects
5. FY17 Council District Local Street Budget Allocation
6. Lane Mile Summaries by Council District
7. Listing of Streets by Major Arterial, Minor Arterial and Collector Classification

Objectives

a. Develop a policy for maintenance of City streets

b. Differentiate project development responsibility by roadway functional classification

c. Develop 5-year Capital Improvement Plan for Major/Minor Arterials and Collectors

d. Develop annual CIP for Local/Residential Streets

e. Establish annual schedule for CIP development and construction activities

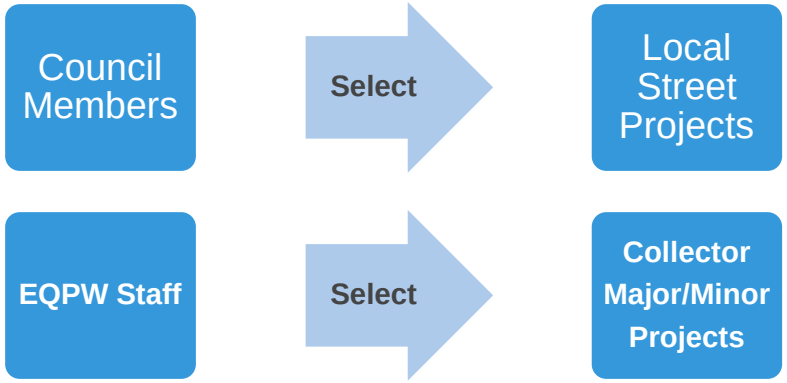
f. Update pavement condition data every 3 years

Roles and Responsibilities

Roles were defined for the primary stakeholders involved in the Pavement Management process.

a. Establish annual paving budget

b. Select projects for implementation



c. Review projects against planned construction/utility work

d. Identify opportunities for pavement marking changes (e.g., add bike lanes)

e. Commit selected projects and update pavement database

Annual Budget Allocation

- Fiscal year budget allocations are recommended as a percentage of the total paving budget, based on functional classification.

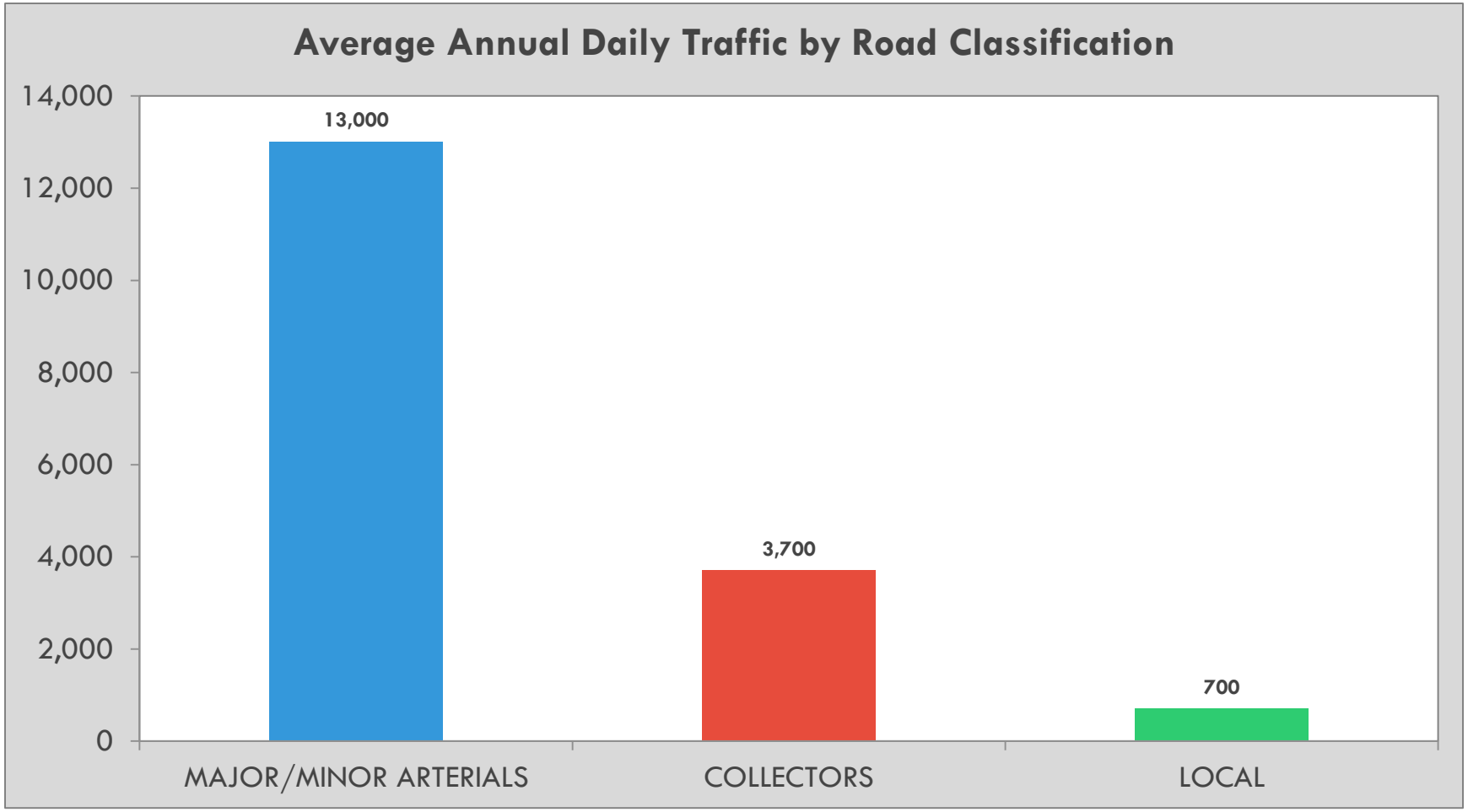
Budget Category by Functional Classification	FY Budget Allocation
Major/Minor Arterials	33%
Collectors	25%
Local	42%
TOTAL	100%

Budget Allocation Methodology

- The recommended fiscal year budget allocation was developed using a combination of two methods:
  - Proportion of lane miles by functional classification.
  - Proportion of the Average Annual Daily Traffic (AADT) range based on functional classification multiplied by the lane miles.
- By using the AADT, priority is given to the types of roadways that carry the highest traffic volumes.

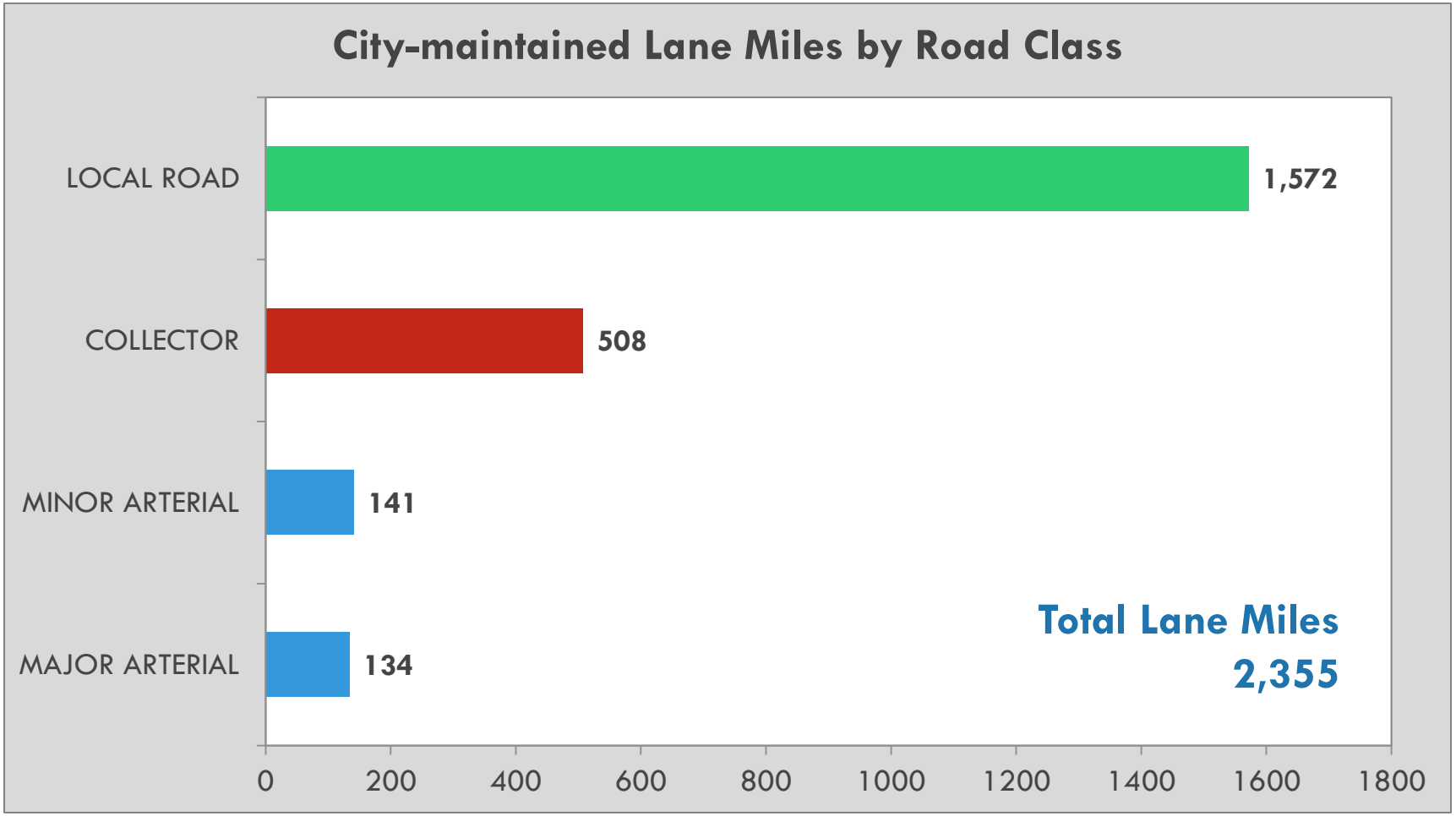
See page 4 of attached Pavement Management Plan for calculations

Comparison of Traffic Volume



AADT range for road classification based on Federal Highway Administration (FHWA) guidance.

Comparison of Lane Miles

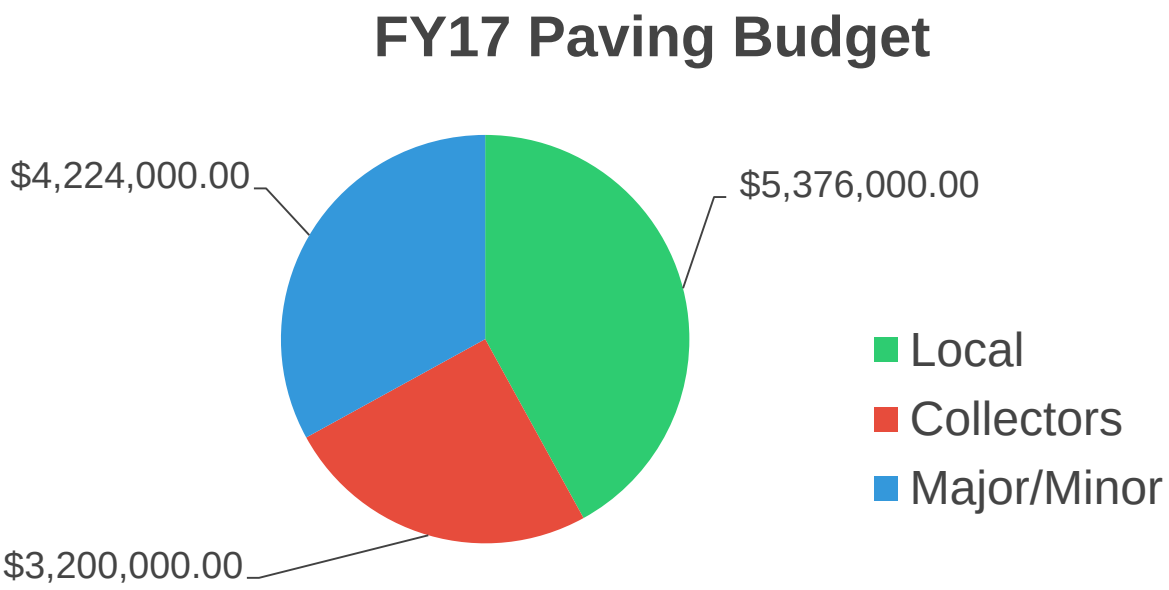


County-maintained roads excluded from statistics above.

FY17 Major/Minor Arterial and Collectors Budget Allocation

Major Minor Arterials (0.33) * $12,800,000 = $4,224,000

Collectors (0.25) * $12,800,000 = $3,200,000



FY17 Local Road Budget Allocation

- Percentage of local road lane miles with OCI less than 60

  (0.42) * $12,800,000 = $5,376,000

Council District	Percentage of Local Lane Miles with OCI Less than 60	Allocated Funds by District
1	8.8%	$ 473,262.90
2	8.3%	$ 444,100.79
3	5.4%	$ 292,535.99
4	8.9%	$ 479,760.35
5	9.4%	$ 504,577.91
6	11.9%	$ 638,202.43
7	5.1%	$ 275,548.22
8	7.8%	$ 418,181.05
9	10.7%	$ 577,240.05
10	9.8%	$ 527,909.61
11	6.6%	$ 353,270.43
12	7.3%	$ 391,410.26
	FY17 Total	**$ 5,376,000.00**

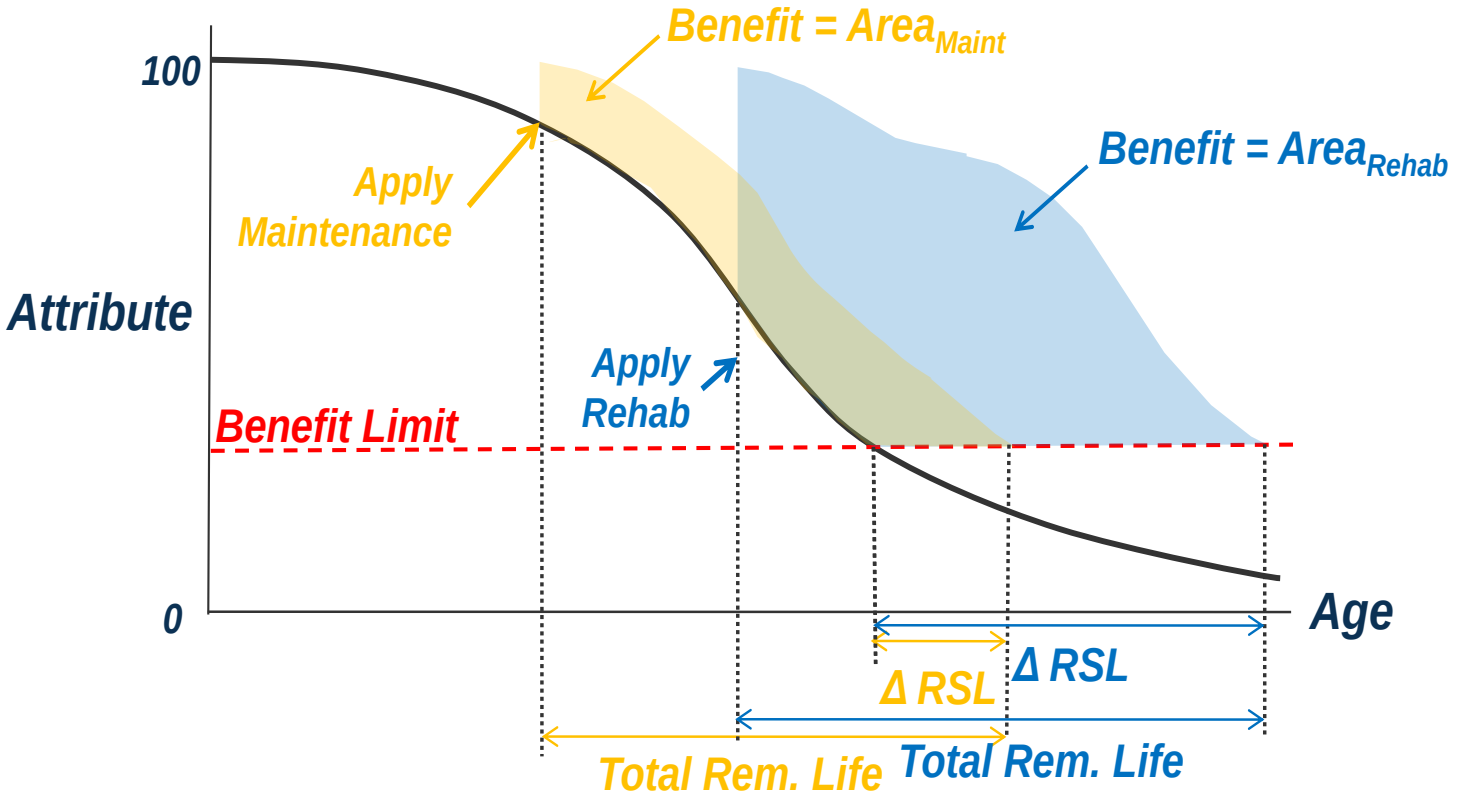
Paving Project Development Process

Pavement maintenance projects

- Use approximately 25% of budget allocation to select projects with the highest Benefit-Cost Ratio.
- We must maintain good pavement segments for longer service life.
- Address more lane miles at lower unit cost.
- Logically group projects by street and treatment option → cost efficiency.

Paving Project Development Process

Pavement Deterioration Curve showing how if maintenance applied at the right time, pavement life will be extended.

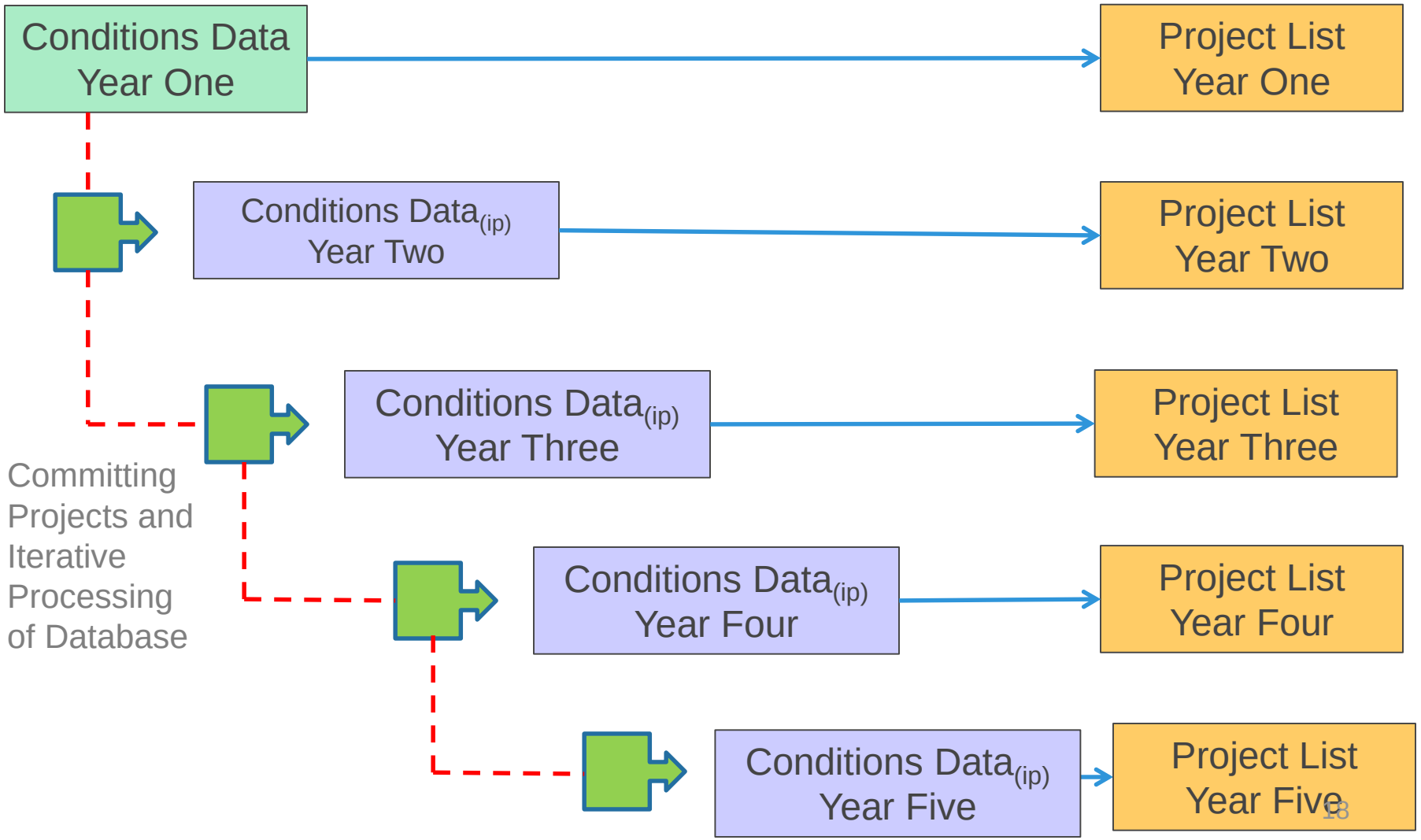


Paving Project Development Process

Pavement rehabilitation projects

- Use approximately 75% of budget allocation to select projects with the lowest Overall Condition Index.
- These are the pavement segments in the worst condition and have the highest average repair costs.
- Address fewer lane miles at high cost.
- Logically group projects by street and treatment option → cost efficiency.

Development of 5-year CIP



Comparison of Benchmark Cities

Municipal Area	Lane Miles	Approx. FY2016 Paving Budget
NASHVILLE-DAVISON COUNTY, TN	5,800	$ 20,000,000
LEXINGTON, KY	2,355	$ 12,400,000
CHATTANOOGA, TN	2,311	$ 3,600,000
LOUISVILLE-JEFFERSON COUNTY, KY	2,170	$ 19,600,000
KNOX COUNTY, TN	2,006	$ 2,000,000
HAMILTON COUNTY, OH	1,200	$ 1,000,000
KNOXVILLE, TN	1,000	$ 7,000,000
CINCINNATI, OH	985	$ 14,000,000
HAMILTON COUNTY, TN (CHATTANOOGA-AREA)	849	$ 990,000

Questions?

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