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CORPUS CHRISTI TEXAS

FINAL REPORT

AD HOC RESIDENTIAL STREET INFRASTRUCTURE ADVISORY COMMITTEE

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May 23, 2016

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Section 1 – The Residential Street Problem and the Ad Hoc Committee

Corpus Christi is a difficult environment to maintain smooth streets. Large parts of the City have subsoil consisting of clay that expands and contracts in both seasonal and moisture-related cycles. The weather of the region can include hurricane-induced deluges and long-cycle droughts. The City has a 150 year history, with many road problems inherent to outdated materials, methods, and designs of the original construction causing problems with road base, drainage, and utility facilities. Finally, there have been periods of underspending in maintenance and reconstruction which started long ago and continue today in comparison with the requirements and size of the in-place street network.

The Street Committee consists of nine volunteer individuals who have been empaneled for a short period of time without independent resources. It is the opinion of the Chair of the Committee that each individual has brought common sense, experience, and good faith to the process.

Our goal is to define a sustainable lifecycle maintenance and replacement program for the entire residential street network.

The Street Committee wishes to acknowledge and thank the City Manager, City Management, and City Staff for their support throughout this effort. The conclusions of this report and suggestions for improvement are testament to their willingness and ability to make the streets and services to the citizens better – it is not a criticism of the individuals. The people that we have met at all levels of City street processes are knowledgeable, hardworking, and caring. We appreciate the time, advice, and support that they have given the Committee.

The Street Committee would like to thank the contractor community. We believe that the Contractor service to the City has been commendable. There is an extraordinary group of prime contractors and sub-contractors who work very hard and have an enormous amount of pride in the quality of the work product. We appreciate the testimony and advice that they have provided to the Committee.

The Street Committee would like to thank the engineering community. We believe that the professional services community has a deep understanding of local conditions and they have delivered substantial value to the City in terms of their paid professional services and their unpaid advice in service to the community overall. We appreciate the testimony and advice that they have provided to the Committee.

The Street Committee would like to thank the Mayor and City Council. The opportunity to serve has been a wonderful personal experience. We know that difficult choices are ahead, and we hope to have provided guidance and understanding to make their process easier.

1.0 Fixing the Residential Streets

Streets are of primary importance in society. The streets move people, commercial goods, and waste products to and from every residence and business in a city. Streets must be well designed and maintained in order to minimize the social costs of safety to the public, damage to vehicles, and unproductive loss of traffic backups. In addition to the aforementioned criteria, citizens also focus on a smooth ride quality and uniform appearance as being factors associated with their satisfaction.

109 Streets have a finite lifespan that is determined by initial build quality/design, maintenance,
 110 environmental conditions, sub-surface characteristics, and vehicle utilization. There is also a utilities
 111 component which has its own lifecycle needs, but can force replacement or repairs to the street surface.

112 Because streets are a common social good, streets are a necessary and proper responsibility of
 113 municipal government. In order to service the streets, the City must provide for funding, asset
 114 management, operational maintenance, and planning for future streets.

115 Corpus Christi City Council has empaneled the Ad Hoc Residential Street Infrastructure Advisory
 116 Committee to formulate recommendations to maximize value for residential street spending and to
 117 suggest best practices.

118 The streets require a perpetual maintenance and rebuild cycle which is very expensive. Even with the
 119 most efficient plan in place, the degree to which the streets are repaired or replaced is ultimately a
 120 question of funding.

121 The general mileage or dollars in the following table are important to understand the general magnitude
 122 of the ongoing cost of street construction and required maintenance.

123 PER MILE COST OF TOTAL REBUILD OF RESIDENTIAL STREETS INCLUDING UTILITIES
 124 IN 2016 CONSTANT DOLLARS COST PER MILE:

Scenario Name	Street Lifespan	Major Maint Cycle	Upfront Cost (\$000)	Cumul Overlay Cost (\$000)	Cuml Seal Coat Cost (\$000)	Total Cost per mile (\$000)	Total Cost per mile per year (\$000)
No Major Maint	30 years	N/A	\$2,455	- \$0 -	- \$0 -	\$2,455	\$82
Overlay Only	30 years	15 years	\$2,455	\$475	- \$0 -	\$2,930	\$98
Overlay and Seal	30 years	7.5 years	\$2,455	\$475	\$475	\$3,405	\$114
No Major Maint	60 years	N/A	\$2,455	- \$0 -	- \$0 -	\$2,455	\$41
Overlay Only	60 years	15 years	\$2,455	\$1,426	- \$0 -	\$3,881	\$65
Overlay and Seal	60 years	7.5 years	\$2,455	\$1,426	\$950	\$4,831	\$81

125

126 SYSTEM WIDE COST OF TOTAL REBUILD OF RESIDENTIAL STREETS INCLUDING UTILITIES
 127 IN 2016 CONSTANT DOLLARS:

Scenario Name	Street Lifespan	Total Cost for 881 mile Residential Street System (\$000,000)	Total Cost for 881 mile Residential Street System per Year (\$000,000)
No Major Maint	30 years	\$2,163	\$72
Overlay Only	30 years	\$2,581	\$86
Overlay and Seal	30 years	\$3,000	\$100
No Major Maint	60 years	\$2,163	\$36
Overlay Only	60 years	\$3,419	\$57
Overlay and Seal	60 years	\$4,256	\$71

128

129 Rebuilding the streets is very expensive. In addition to the street surface itself, there are additional
130 significant costs. These ancillary systems must be upgraded to meet functional standards or as required
131 by law or regulation. Certain street reconstruction treatments may trigger federally mandated ADA
132 improvements adjacent to the street; corner access ramps are a good example. Curb and gutters
133 function as the interface between the roadway and the yard but also function as the primary drainage
134 pathway for stormwater drainage. Understreet utilities have their own finite lifespan for necessary
135 services such as potable water, waste water, and gas.

136 Because the residential streets are relatively narrow and short as compared with arterials and collector
137 streets, the fraction of expenditure on these required spending categories are relatively larger than in
138 comparison with high-capacity streets. We estimate that for residential street reconstruction the
139 relative spending categories for a street program will be surface cost – 32%, ADA cost – 5%, curb/gutter
140 – 30%, and utilities – 33%.

Finding / Recommendation 1.0:

The Committee finds that the amount of money that Corpus Christi would have to spend to maintain and replace residential streets on a 60 year cycle would be approximately \$71 million per year. This amount does not include spending for arterial and collector streets.

141

142 The political and fiscal reality is that the available funding will be a small portion of what is would be
143 required for replacement based solely on engineering criteria. The Committee also estimates that
144 market constraints on materials and contractor capacity in the near term limit the size of any program.

145 Because there is not enough money to rebuild streets in their entirety, it is likely that citizen
146 dissatisfaction with the streets will continue.

147 The goal of the newly created program described herein is to begin a systematic reconstruction of failed
148 streets and to perform intensive maintenance on all streets in a proactive, systematic manner to address
149 dangerous or damaging conditions and to improve ride quality.

150 The Committee is an advisory body that is making recommendations to the City Council, City leadership,
151 and City Staff. However, the decision authority and responsibility for implementation remains with the
152 respective responsible groups within the City. We are eager to discuss these findings in addition to
153 providing this written recommendation. The Committee has prepared several presentations that were
154 discussed in open, public session. We encourage review of those recorded sessions to understand the
155 context of these recommendations.

156

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Section 2 – Process Observations

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2.1 Job Costing

Finding / Recommendation 2.1:

The Committee recommends that the City track job cost at the street level.

161

162

The City does not have a very good handle on individual job cost. It seems to the Committee that the logical unit of understanding job cost is the street. Certainly residents and the media have an expectation that the City should understand the cost of work accomplished within a logical unit that corresponds with the way the average citizen understands streets.

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166

We think that this information discipline would benefit department management to understand:

167

- Production efficiency in comparing contractor and internal costs in order to conduct a make versus buy decision or to compare relative efficiency between crews.

168

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- Factors or conditions that cause the scope of work to expand or shrink. This is especially important to understand projects that experience a catastrophic expansion where a project with a relatively small budget blows-out to absorb substantial resources.

171

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- Understanding the relative cost of various street treatments so that the least-cost workplan can be implemented.

175

176

177

- Understanding stability of cost over time for unit cost decision making and contract negotiation.

178

179

- Understanding the relative value associated with the components of the Indefinite Delivery, Indefinite Quantity contracts.

180

181

Currently the City keeps track of invoices presented by contractors. The invoices generally cover regular periods of time which may include only a portion of work or several blocks of work depending on numerous factors. It is clear that even when the correct amount gets paid for a particular volume of work, it just is very difficult if not impossible to tie back to specific work.

182

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Effective job costing is also the first step to clear communication with the public and City Council. It also can serve as a point of discussion with contractors to understand how the City's cost structure for these services may be improved.

186

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2.2 ContractingFinding / Recommendation 2.2:

The Committee recommends that the City use the contracting methods of IDIQ, Micro-IDIQ, and Project Bid method, in addition to tasking City-internal crews to perform the work to maintain and rebuild the streets. The Micro-IDIQ would represent a recently created method of contracting.

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Method 1: Indefinite Delivery, Indefinite Quantity (abbreviated as "IDIQ") Contracting

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The City primarily uses the Indefinite Delivery, Indefinite Quantity (abbreviated as "IDIQ") method of contracting for the Street Preventative Maintenance Program and the Minor Pavement Improvement Program. The IDIQ processes that have historically provided high value to the City in terms of cost and in-field results for a large scope of work. The Committee recommends continued use of the IDIQ method.

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The City puts forth a general scope of work, and various contractors provide bids which consist of a very extensive list of activities with a price for each activity based on the units used or output produced. The City then selects one contractor for award of the IDIQ contract which exclusively covers a particular scope of work, within a defined area, for a specified period of time.

201

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Once the IDIQ contract has been awarded, the City then dispatches delivery orders of work to the contractor. The contractor performs the work and invoices the City based on the quantity of work or materials actually used to complete the work.

204

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- There are positive aspects of the IDIQ: The City always has access to a qualified contractor to perform the work at a known price. There is less need for detailed project specification during planning which results in reduced upfront cost as well as minimization of in-house resources. Flexibility allows the City to re-prioritize, increase, or decrease the aggregate work. The City has the ability to engage in work of unknown scope without a constant rebidding or change order cycle. The large contractors that bid on the IDIQ projects can operate with minimal supervision required and they also tend to offload administrative burden from the Engineering Services Department.

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- There are negative aspects of the IDIQ: The exclusivity of the contract impairs the City's ability to hire a substitute contractor to the extent that the relationship with the awarded contractor does not produce the expected results. There are also no change orders, so it is hard to tell if a workplan goes haywire. There is the risk for adverse selection of work which is a risk for the City as well as the contractor because the profitability or value varies greatly by line-item and the amount of each line-item varies greatly between delivery orders. The Texas Local Government Code requires the City to award contracts for construction of roads, streets, utilities and other civil works projects to the lowest responsible bidder, but the lowest bid may be difficult to determine when comparing bids with à la carte service pricing – this is a consequence of the indefinite nature of these types of projects

223

224 Method 2: Micro - Indefinite Delivery, Indefinite Quantity (abbreviated as "Micro-IDIQ") Contracting

225 The Committee recommends that City Staff create a simplified process for projects where breaking a
226 large job into smaller executional units would produce cost savings or enhanced manageability. We
227 define this contracting process as a micro-IDIQ with a limited award size, geographic scope, process
228 scope, and the time scope. We think that the benefits of the micro-IDIQ to the City include:

- 229 • Multi-source provision of services so that the City maintains the skills, availability, and readiness
230 of contractors which ultimately delivers higher value through the competitive bid process.
231
- 232 • The shorter timeframe makes it less likely that the contractor will fall behind and ultimately fail
233 to produce the work.
234
- 235 • Smaller contract size should enable smaller contractors to bid the work because the bonding
236 requirements or workload requirements fit within the capabilities of a small provider.
237
- 238 • Focused scope of work may allow specialized contractors to bid on discrete portions of the
239 work. The larger contracts usually result in large contractors serving in the role as prime
240 contractor with the actual work performed by subcontractors which are billed to the City with a
241 substantial mark-up on their services.
242
- 243 • Smaller contract size reduces risk to the City which has the derivative effect of allowing contract
244 simplified terms.
245
- 246 • The Texas Local Government Code allows the City to award contracts for construction of streets
247 using the competitive sealed proposal method if the expenditure is \$1.5 million or less. The
248 effective result is that the City can consider other criteria in addition to the price, use a best
249 value determination, and have more flexibility to include small or new contractors as meeting
250 the "responsible bidder" criteria.

251 Certainly the increased number of contractors associated with the Micro-IDIQ and project coordination
252 will likely require increased workload within the Engineering Services Department. This will require
253 additional staffing.

254 Method 3: Traditional Project Bid Contracting

255 The City should continue to use the traditional project bid method. This method has typically been used
256 on bond projects, where the project is well defined and large in scope.

257 This method typically consists of a well-defined, specific scope of work which is bid using a competitive
258 bid process where the contractor agrees to complete the entire project, typically at a fixed price. For
259 projects larger than \$1.5 million, the project must be awarded to the lowest responsible bidder.

260 This method requires substantial upfront design resources and an exact knowledge of the initial
261 conditions of the surface and subsurface. If the scope of the project changes, due to either voluntary

262 design changes or discovery of complications, then the amount paid to the contractor typically increases
263 through a change order process.

264 Method 4: Award Work to Internal Street Operations Department

265 The City should continue to directly perform the work using the substantial resources and expertise
266 within the street operations department. The City has successfully performed large-scale seal coat
267 operations.

268 Using internal resources provides the City with a flexible and responsive alternative to outside
269 contracting. It is prudent to have these capabilities within the City. However, the cost of these activities
270 needs to be benchmarked to understand the relative value of internal versus contractor produced work
271 and the efficiency of in-house teams.

272 The City historically has achieved great success in “reworking” streets to renew their life; however, the
273 City does not currently have the capability to perform this activity due to loss of internal expertise as a
274 result of staffing challenges and budget cuts. The Committee recommends that the City hire crews and
275 acquire equipment to restore these capabilities within internal operations. (See Section 2.7)

276

277 2.3 Payment interval

Finding / Recommendation 2.3:

The Committee recommends that the City should pay contractors promptly. This should be achieved by resolving bottlenecks in the process and improved coordination between City departments. It will also require substantial input from the legal department to ensure compliance with numerous applicable laws. As a first step, the City should track path, time until payment, and status of each invoice starting with presentment for payment. The Committee further recommends that the City set a target of six months for Council review so that there is urgency and accountability for completion of this task.

278

279 The Committee believes that the City should pay contractors and/or vendors within 30 days of the
280 completion of work or delivery of goods.

281 If the City is slow at paying contractors after the work is performed, the following occurs:

- 282 • Small contractors cannot afford to work directly for the City because of a working capital
283 funding gap. This financing need is caused because the small contractors must pay their
284 employees and vendors, before they receive payment from the City for completed work.
285 Currently, these small contractors only perform City work by being sub-contractors to large
286 contracting companies who advance funds to the small contractors and directly invoice the City.
287 Due to this arrangement, the City effectively pays a mark-up on the small contractor work
288 because the large contractor adds an amount to the invoice presented to the City which
289 represents the large contractor profit, administrative markup, and financing markup.

290

- 291 • Large contractors who work directly for the City calculate the cost of financing their working
292 capital funding gap and add it to their bid as a cost of the job.

293 The Committee believes that the City can lower the cost of hiring contractors by paying promptly,
294 because small contractors can bid directly on City work and large contractors can afford to lower their
295 bids by the amount of savings on financing costs.

296 With respect to street projects, the City conducts on-site inspections of the work performed proximate
297 to the completion of the work in the field. We believe that these inspection can provide the City with an
298 estimate of the percentage of completion as well as the assurance that the work was completed in good
299 faith.

300 Solving this issue will require refinement of the invoicing process internal to the City as the invoice is
301 processed among multiple departments. It will also require substantial legal review due to the high
302 degree of regulation with respect to Texas State law, among other issues.

303 Even if the City cannot ultimately meet the 30 day payment objective, anything that can be done to
304 shorten the interval will improve the situation for contractors and the City. If the invoice cannot be paid
305 in full, if consistent with applicable rules and regulations, perhaps the City can pay the undisputed
306 amount or provide for a large mobilization payment for bonded contractors where performance risk can
307 be mitigated.

308 As a first step to understanding the magnitude of this problem, the Committee recommends that the
309 City should track the path, time intervals, and status with respect to each individual invoice as it moves
310 within and between departments, starting from the date of vendor presentment for payment. This data
311 will indicate probable bottlenecks as well as provide a basis for reporting.

312 While we believe that the street operations and engineering department would benefit from these
313 changes, the issue of payment interval exists external to these departments and is likely to affect most
314 City operations.

315

316 2.4 Acquisition Planning

Finding / Recommendation 2.4:

We recommend that the City create an internal purchasing and contract administration role to ensure that acquisition planning results in the highest value to the City through the bidding process and throughout the completion of the work.

317

318 Acquisition planning is the combined role of strategic purchasing and contract administration.

319 The Committee believes that engineering and acquisition planning are distinct skill sets. Currently, it is
320 typical that a project goes from engineering design specification directly to procurement without an
321 evaluative step to thoroughly consider relative value between procurement methods or other
322 considerations to improve procurement results, such as project aggregation or disaggregation.

323 As such, we strongly recommend that the City create an internal, acquisition planning role.

324 The acquisition planning role would include understanding the historical cost for services, understanding
325 best estimate of current costs, comparing costs with similarly situated entities, coordinating with
326 contractors to understand their cost structure to re-design City processes to make everyone more
327 efficient, understanding contractor capacity and availability, farming small contractors into larger ones,
328 de-bottlenecking the contracting process, assuring prompt payment of invoices, negotiating terms and
329 pricing. We also believe that the acquisition planning role should have responsibility for contract
330 administration to ensure that the business terms of the contract are respected by both the City and the
331 contractor.

332 The City engages numerous contractors which, in the aggregate, represent payments in the tens of
333 millions of dollars in spending each year. Currently, the contracting process occurs within the
334 Engineering Department which includes people who have professional ties with the entities who work
335 on or a have a history of being on both sides of the table. In addition, these same people often serve as
336 the authority within the City with respect to pursuit of contract claims or enforcement. We believe that
337 there is the appearance of conflict of interest which could be avoided by implementing this
338 recommendation.

339 While we believe that the street operations and engineering department would benefit from these
340 changes, the issue of acquisition planning is likely to affect many City departments.

341

342 2.5 Improvement of Information Systems

Finding / Recommendation 2.5:

We recommend that the City design and implement process and system improvements to document cost, geo-spatial parameters, and performance measurements in order to achieve effective operational and asset management of the street inventory. In many instances, non-street City departments may have already made the investment and can be adopted with little incremental cost by the street-related departments.

The Committee recognizes that it will take substantial effort and investment to effect these improvements. The process will take many years.

343

344 The Committee believes that street operations would benefit substantially from implementation of best
345 practices of the industry or copy successful implementations of electronic recordkeeping, materials
346 management, or labor management systems which are in common use elsewhere. For example, street
347 inspections and materials/labor tallies are recorded in the field on paper and submitted into the City
348 system on a manual basis. We believe that these processes which have probably not changed for a
349 generation are a substantial barrier for the City to understand its cost structure, implement efficiency
350 improvements, or guarantee accountability.

351 We recommend that the City continue to engage experts to design and implement these process and
352 system improvements. In other instances, non-street City departments may have already made the
353 investment and can be adopted with little incremental cost by the street-related departments. Here are
354 particular examples that seem ripe for improvement:

- 355 • Real-time tracking of street operation vehicles and people. This properly documents street
356 repair activity, allows job costing, allows specific review of a repair location at a particular GIS
357 coordinate, efficient routing to reduce mobilization loss, and time/hour employment
358 responsibilities. Certainly this technology is in widespread use and may be partially or wholly
359 implemented by the utilities department of the City.
360
- 361 • Street management has a large GIS component. Damage and repairs happen at a particular
362 location. Costs should be understood at the block level. Work plans should be site specific,
363 because various treatments/contractors relate to specific locations along a street. Third-party
364 street cuts and repairs are location specific. Under street utility location for replacement or
365 service impacts street surface. Dispatch for repair for citizen complaint is site specific. Pre-
366 construction base and sub-grade testing happens at particular test holes which may need to be
367 spatially understood if testing needs to be repeated or expanded. Work completion and
368 acceptance has location, date, and responsibility parameters that should be tracked to evaluate
369 performance over time. As such, the current GIS system need to evolve to support these needs.
370 This expertise may already exist within the City, but has not been applied to streets yet.
371
- 372 • Portable devices for construction inspection and management. Portable tablets for inspection,
373 with construction management software / apps installed can help City Staff or City
374 representatives to document work and communicate in the field. For example in-field
375 management of schedules, change order process support, creation of contemporaneous
376 construction records, photographic documentation, materials tickets recording, documentation
377 of baseline conditions, and electronic record creation and filing. These systems could also
378 provide information to the inspectors such as real-time access to drawings, specifications, or
379 contract document provisions.
380
- 381 • Group Communications for time-critical decision support. Whenever a job is halted in the field,
382 enormous expense accrues that will either be borne by the contractor or the City. Resolution
383 needs to be as quick as possible to minimize this unproductive deadweight loss. Communication
384 systems can document the timeframe, process, information for decision making, and
385 notifications or directions from the authoritative, responsible person.
386
- 387 • Data interchange with contractors or equipment. Contractor back offices probably produce a lot
388 of information with respect to the work that was performed. Execution of a particular job
389 probably has metrics or information such as materials tickets or materials testing results.
390 Advanced machinery has the ability to report location, in-service data, or construction
391 performance data. This data has the potential to improve accountability as well as reduce
392 construction cost.
393

- 394
- 395
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- 397
- The street department still circulates contracts for signature. The use of “DocuSign” or other acceptable technology would eliminate the time, expense, and hassle of paper shuffling and produce an electronic record which is a more consistent documentation of what occurred and eliminates the backend conversion of paper to electronic records.

398 Part of the challenge is defining standards. Part of the challenge is re-defining processes. Part of the
399 challenge is systems. There is a need for a re-design of the system from the big picture all the way to the
400 small picture. This is the same challenge that is faced by numerous entities that engage in road
401 construction and asset management as part of their regular business practices. The first step is probably
402 to review a number of public and private entities, as well as other internal City departments, to
403 incorporate actual experience and actual solutions to eliminate the trial-and-error of theoretical
404 discovery.

405

406 2.6 Incorporation of Technical Advances

Finding / Recommendation 2.6:

The Committee recommends that the City define a formal process in place for the intake, evaluation, trial, and acceptance of new technologies.

407

408 Technical innovation has transformed almost every industry within the last generation. The
409 improvements have come in the form of chemistry/materials, information systems, and machinery,
410 among other areas. Correspondingly, street management and construction have seen improvements in
411 technology as well. These improvements lead to lower cost, reduced labor content in construction, or
412 longer road lives.

413 There is no need for the City to risk being an early adopter in order to get the benefit of these advances.
414 Certainly other governmental entities or private industry have probably conducted the research and
415 development of these processes and technologies and have proven the performance in field trials or
416 actual installations. If a process or technology has a proven track record in a similarly situated usage,
417 then it should be evaluated by the City in order to save money or improve street lifespan.

418 There are numerous vendors of additives to streets during the reconstruction or seal coat process.
419 Certainly there are many vendors willing to sell ineffective or cost-ineffective products, and the City
420 should be on guard to protect its interests. However, the Committee believes that there are many
421 products that have the ability to substantially improve the efficacy of existing processes in terms of
422 street-life extension.

423 Many of these products seem especially effective at stabilizing streets in wet environments, which is a
424 particular problem in Corpus Christi. The Committee recommends that the City undertake a formal
425 process to consider and trial these innovations. It is probably as simple as verifying a successful
426 implementation of these materials by a similarly situated municipal entity to initiate a small-scale trial
427 locally. The Committee believes that the potential of these products will produce substantial cost
428 savings in the long run.

429 Machinery has the potential to make labor more efficient and improve product quality. This
430 incorporates issues of machine specialization, the right size for a particular job, onboard
431 measurement/intelligence, and materials utilization efficiency, as examples.

432

433 2.7 Hidden Cost of Understaffing and Staff Turnover

Finding / Recommendation 2.7:

The Committee finds that budgetary savings that result from understaffing, unfilled vacancies, or under-compensation probably are outweighed by increased project costs, increased training costs, high-cost of contract labor, or lost value due to deferred maintenance. As such, we recommend appropriate staffing levels and market compensation for demonstrated performance. This is both a quantity and quality of workforce issue. We recommend that the City Council increase Street Operations crew staffing and equipment by three crews.

434

435 The City engages in multi-million dollar operations either directly or in an oversight capacity. As such,
436 qualified individuals can have a multi-million dollar impact on the cost of maintenance, construction, or
437 asset values. These individuals require fair-value, market based compensation in order to attract and
438 retain talented leadership and workforce.

439 There is an enormous cost to the City when street projects are delayed. This cost is hidden from view
440 until it becomes very real, usually in the form of budget over-run. It impacts the City in terms of
441 increased cost of projects due to inflation which has occurred during the delay of bond projects for
442 example. Another example is the increased damage to streets when preventative maintenance such as
443 seal coats are not completed on schedule. Street related departments have experienced double-digit
444 vacancy rates.

445 Within the street operations department, the loss of skilled equipment operators requires expensive
446 retraining of remaining employees, mandatory outsourcing of street work to contractors, or
447 irreplaceable loss of expertise. City Staff estimates that the budget for pavement operations has been
448 essentially flat for 10 years which is equivalent to cutting the budget as compared with inflation and
449 road-network growth.

450 Training is an investment that makes employees more valuable to the City. However that value is lost
451 and the expense of training wasted, if the employee goes to another city or private contractor. This is
452 especially true if the employee leaves the City shortly after training and before the City benefits from
453 the value received through improved service. The City must address this issue by paying market priced
454 compensation, including wages and benefits. It should also consider recapture of training costs if the
455 employee leaves shortly after training.

456 While it is easy to underfund personnel positions to save on-budget dollars, there may be a real overall
457 loss to the City as these increased costs of doing business vest over time in the form of higher project
458 costs or cost of maintenance.

459 Street Operations believe that skin patches done in dry weather hold much longer than just pot hole
460 filling. Execution of skin patches requires a level-up crew and equipment. Currently the department
461 has two level-up crews and has requested additional crews in decision packages in the past that have
462 not been approved. Staff believes that two more crews (12 full-time equivalents) and equipment would
463 help the efficiency of existing operations and provide workforce to allow internal completion of TAR
464 program work (the TAR program as explained in Section 3.1).

465 Street Operations believe that a base-rework crew (8 full-time equivalents) and equipment would allow
466 it to internally perform the street Rework process (the Rework process as explained in Section 3.2).

467
468 2.8 Engineering versus Construction Project Management Perspective

Finding / Recommendation 2.8:

The Committee recommends that the City expands the pool of qualified workforce by exploring the hiring of certified or experienced construction project managers to fill roles within relevant City departments which have heretofore unnecessarily required an engineering certification as a precondition for job consideration.

469
470 Engineering is a particular knowledge set which is validated by professional licensure. It is critical to
471 many processes and projects and may be required by law, insurance, or best practices. Although some
472 engineers may be excellent construction project managers, some are not.

473 Much of the professional engineering required by the City to support its projects is provided by outside
474 engineering firms and individuals. Their work is validated by engineers internal to the City. Because the
475 City primarily relies on outside engineering for proper design at project inception, the City is already in a
476 position to refocus the department on construction project management.

477 However, it seems to the Committee that much of the workflow which is the responsibility of the
478 Engineering department is better understood as a construction project management challenge. A
479 successful construction management process actively manages and balances cost, quality, and timing.
480 We think that the department would benefit from an increased emphasis on these aspects.

481 By specifying construction management expertise (as opposed to engineering) during the hiring process,
482 the department may be able to get qualified and experienced people from a larger pool of applicants.
483 Hence the possibility of increased quality and lower cost. Individual qualifications can be demonstrated
484 with appropriate certifications or demonstrated practical experience.

485 Del Mar College can be a resource for training of existing Staff, as a source of interns, or recent
486 graduates as well trained employee prospects.

487

488

489

490 2.9 Seal Coats**Finding / Recommendation 2.9:**

The Committee recommends continuation of the SPMP seal coat program. However, data must be gathered in order to judge cost effectiveness and efficacy of the program.

491

492 The City undertakes seal coats in order to prevent the degradation of good streets that meet a particular
493 physical standard. Seal coats are a widely-used treatment that involves the application of a mixture of
494 water, asphalt emulsion, aggregate, and additives to an existing asphalt pavement surface. The
495 treatment is designed to add additional wear surface to a road that is in good condition as well as to
496 inhibit water intrusion. There are variations on this treatment including fog seal, slurry seal, chip seals,
497 scrub seals and cape seals.

498 Currently this type of treatment is mostly, although not exclusively, funded through the Street
499 Preventative Maintenance Program ("SPMP"). That program currently divides the funding between
500 arterial/collector streets and residential streets. For 2016, the seal coat budget was \$3.45 million, with
501 the spending divided as 45% arterials/collectors, 55% local/residential.

502 It is also likely that the SPMP funding is insufficient to provide seal coats on all roadways for which the
503 engineering assessment would indicate seal coat treatment.

504 Efficacy is strongly impacted by the initial condition of the road that receives the seal coat, the weather
505 conditions during the time of application, proficiency of the application road crew, and choice of
506 materials, among other factors.

507 Since the City had undertaken a large-scale seal coat program starting in spring 2014, there have been
508 challenges effectuating seal coats related primarily to weather and contractor delays with the result that
509 the work has been substantially behind schedule. However, the City's internal street operations crew
510 has had success completing large-scale seal coat projects.

511 It is unclear to the Committee if the seal coat treatment actually preserves the life of the roads. We
512 strongly believe that this is an open question which must be systematically evaluated by City Staff to
513 determine cost effectiveness of this treatment within the next few years. We strongly encourage
514 evaluation of street cohort groups through time to judge the value of seal coats using definitive data. It
515 is important to design the data collection protocol now, so that the City can effectively monitor road
516 performance.

517 The SPMP is too new to judge and Staff has learned from the new program in order to improve all
518 aspects. However, the historical record of prior seal coat programs offer an incomplete, but un-inspiring
519 picture.

520 Further, we believe that citizen satisfaction with seal coats on arterials and collectors has been low,
521 because this category of treatment does not fix ride quality on roads that have a poor ride prior to
522 sealing.

523 We believe that it is likely that technical improvements in commercially available industrial additives are
524 likely to improve the performance of the seal coat treatment, and these should be evaluated.

525

526 2.10 Overlays

Finding / Recommendation 2.10:

The Committee recommends continuation of the SPMP overlay program with a reallocation to increase the relative spending on residential collector streets.

527

528 The City undertakes preventative maintenance on the streets in order to prevent the degradation of
529 good streets. The overlay treatment consists primarily of milling off the surface portion of the road to a
530 depth of between 1" to 2" with the replacement of the asphalt ride surface.

531 The City had undertaken a large-scale overlay program starting in spring 2014, with good results. The
532 projects have generally been completed on time and within the expected budget. Currently the City
533 does not conduct large-scale overlays with City crews, primarily because of the lack of expertise and
534 experience within the City street operations group.

535 We believe that citizen satisfaction with overlays has been very high. The treatment gives the road an
536 improved appearance and ride. However, because of the extensive nature of the street work associated
537 with this treatment, the City has undertaken ADA upgrades, sidewalk, driveway, and curb/gutter
538 renovation at the same time as the overlay process on the street surface. While the results have been
539 very good, and the value very good, the cost for each road resurfaced has been high in terms of dollars
540 spent per area of road overlaid.

541 It is also likely that the SPMP funding is insufficient to provide overlays on all roadways for which the
542 engineering assessment would indicate overlay treatment. The SPMP overlay funds service arterials,
543 collectors, and residential streets.

544 Currently this type of treatment is mostly, although not exclusively, funded through the Street
545 Preventative Maintenance Program ("SPMP"). That program currently divides the funding between
546 arterial/collector streets and residential streets. For 2016, the SPMP overlays had a \$10.4M budget with
547 the division of work being 47% arterials/collectors, 53% local/residential streets.

548 The Committee recommends that City Staff adjust the allocation of overlay spending to reflect: 40%
549 arterials/non-residential-collectors, 25% residential-collectors, and 35% residential/local streets. In
550 particular, the Committee believes that many citizens have the perception that residential collectors are
551 residential streets. But because collectors have more traffic, higher traffic speeds, and longer travel
552 distances we believe that better allocation of this scarce resource to residential collectors will result in a
553 dramatically improved ride quality and corresponding citizen satisfaction.

554 The Committee recognizes that if funds are reallocated as we recommend, that there will be
555 approximately \$1.9 million less spent on overlays of true residential streets as compared with historical
556 amounts. We believe that this is prudent because there will be substantial improvement in streets that

557 most citizens consider as residential. In addition, spending efficiency improves such that more street
558 surface is renewed because collectors have a higher percentage of overlay spending in the street surface
559 as compared with residential streets which have less surface area relative to required ADA, curb/gutter,
560 and sidewalk spending.

561

562 2.11 Residential vs. arterials/collectors

Finding / Recommendation 2.11:

The Committee recommends prioritization of incremental spending on arterial/collector streets.

563

564 The Committee has been tasked with the reconstruction of Corpus Christi's residential streets, and we
565 have presented recommendations thereto. Residential streets are important to keep in good repair as a
566 matter of damage to property, public safety, civic pride, and in support of residential property values.

567 However, the City has an enormous need to reconstruct and improve arterial/collector roads too. The
568 Committee believes that the condition of the arterial/collector roads has a larger impact on the citizens
569 because most citizens, almost all commercial traffic, and many visitors spend more time and drive at
570 higher speeds on the arterials/collectors. Therefore, while it is important to establish a credible
571 residential street reconstruction program, incremental spending of available funds is better spent on
572 arterial/collector streets.

573

574 2.12 Grandfathering of Street Design

Finding / Recommendation 2.12:

The Committee recommends initiation of legal review to explore the ability to apply current road construction standards to projects that would otherwise be grandfathered to build outdated designs for many years in the future.

575

576 The City gains most of its new residential roadway by acceptance of completed streets by private
577 developers following construction of new subdivisions.

578 The City adopted improved specification for residential streets in 2013. We think that it was the general
579 expectation that the improved standards would be implemented as new development tracts were built.
580 It is the responsibility of the land developer to build streets according to City specifications when farm
581 fields are turned into a neighborhood residential development within the City limits.

582 However, this is not the way the process currently works. As a result, many new subdivisions that have
583 been completed since 2013 and will be completed in the future do not reflect the current design
584 standards.

585 This unexpected result occurs because the City regulations are grandfathered for that development at
586 the time the initial plat is filed and accepted by the City's Development Services Department. After that
587 initial-plat, it may take as long as fourteen years to completely develop that neighborhood for the entire
588 development span, yet the grandfathered rules apply.

589 As a matter of process, the developers are typically given a two year window to complete development
590 of the initial-plat. However, it is the expectation of virtually all developers that the lifespan of the
591 development will be many years in the future. As such, it is common practice for the Planning
592 Commission to renew the plats for two year intervals near each expiration date.

593 It seems to the Committee that at the time of any renewal, the time extension could be conditioned
594 upon acceptance of certain new regulations. This is the policy question at hand to be considered.

595 There is certainly a balancing act necessary when considering forcing new regulation on a developer in
596 the middle of a project. Some regulatory changes would impair the fundamental economics of the
597 project and would be imprudent for the City to impose. An example of this would be the increased
598 radius of a cul-de-sac circle, which was added to the development code to facilitate turning of heavy
599 trucks including fire protection. If this were forced on a developer, the parcels adjacent to the cul-de-
600 sac would need to be resized, setbacks adjusted, and the development plan necessarily reconfigured.
601 We view this as an example of an unfair, imprudent, and unnecessary burden.

602 The Committee, in conjunction with the Staff of the Engineering Department and Development Services,
603 believes that the prudent middle ground would be to condition plat renewal on non-geometric changed
604 regulation. From the perspective of the Street Committee this would include the construction standards
605 for street cross-section, curbs, gutters, sidewalks. We believe that the City Development Services
606 Department will have a similar list of affected systems such as required water or wastewater pipe size,
607 for example.

608 Allowing continued development using old street standards has a substantial cost to the City because of
609 increased maintenance cost, problems with storm water runoff, or pre-mature failure requiring
610 reconstruction earlier than expected according to current standards.

611
612 However, before any action is taken, there must be a thorough legal review. State law may preempt the
613 ability of Corpus Christi to directly address the issue.
614

615 2.13 Improving Street Standards

Finding / Recommendation 2.13:

The Committee recommends that the City consider improved street standards or construction damage mitigation such as increased warranties, delayed acceptance, or delayed installation guaranteed by performance bonds.

616

617 During new neighborhood subdivision development, the streets are built prior to home construction.
618 Substantial damage can occur as concrete truck loads or other heavy equipment associated with the

619 building of the subdivision by the developer transits the new streets. The City should evaluate strategies
620 to reduce its exposure to increased cost related to this type of damage. These include:

- 621 • Lengthened warranty periods
- 622 • Delayed acceptance of the roads
- 623 • Delayed installation of road wear surface or sidewalks with developer performance guaranteed
624 by performance bonds or cash
- 625 • Consider concrete streets for new road construction within residential subdivisions.

626 Improved street design standards may also be necessary. Streets engineering is an advanced and well
627 understood science. However, as a general matter, the design standards for streets rely on a series of
628 assumptions that are converted by formula into a profile for the street design. Thus when a street is
629 designated as having a 30-year design life, it is often a short-hand estimate of Equivalent Single Axle
630 Loads (often abbreviated as “ESAL”).

631 If the assumptions which feed the formula are incorrect, or if road use changes, then the road will not
632 achieve its design life in terms of years. Examples include:

- 633 • Incorrect assumptions with respect to the weight of garbage trucks, recycling trucks, delivery
634 trucks, or busses which have tended to increase in weight or frequency as compared with
635 historical periods.
- 636
- 637 • Usage may increase on a residential street if it inadvertently becomes a through-street due to
638 issues of construction on neighboring streets or congestion on nearby arterials and collector
639 streets.
- 640
- 641 • Street usage far beyond design life. The City currently contemplates using a street for 60 years
642 even though the initial design life was 30 years.

643 Design-life extension can be simplified to be thought of as increased base and wear surface depth.
644 Because road elevations get set on primary construction, it is much, much easier to increase these
645 parameters on new construction as compared with redeveloping older streets to these new standards.
646 Further, in most reasonable scenarios, additional base material has the effect of making maintenance
647 and reconstruction cheaper in addition to expanding the useful life of the roadway.

648 More work has to be done, before a clear course of action is apparent.

649

650 2.14 Construction in the ETJ

Finding / Recommendation 2.14:

The Committee recommends that the City consider a strategy to address street construction in the ETJ to limit exposure to increased costs if those roads become City responsibility through annexation.

651

652 The City should also understand and catalog construction of residential streets in the ETJ. As the City
653 grows, these streets will become the financial and operational responsibility of the City. If they are
654 substandard because the City has no jurisdiction or if they are not properly inspected, then this will
655 become a very expensive burden on the City as expansion occurs.

656 The County encourages construction that omits common features such as curb, gutter, sidewalks, or
657 some storm water improvements so that it does not become responsible for maintenance of these
658 expensive systems.

659 Because the City may have no or limited authority over new construction in the ETJ, the Committee
660 recommends working closely with the County to address this issue.

661

662 2.15 Storm Water

Finding / Recommendation 2.15:

The Committee recommends that the City evaluate the stormwater problem outside of the purview of this Ad Hoc Committee.

663

664 Standing water due to ineffective stormwater drainage is a significant contributor to the degradation of
665 City streets.

666 Unfortunately, stormwater is a complicated and expensive responsibility of the City. Effectively moving
667 stormwater has a large impact on street health, safety, and the potential for property damage. The
668 issue presents complex engineering challenges, land use issues, and an enormous funding problems.

669 The Street Committee believes that successful understanding and resolution of these issues is beyond
670 the capabilities, timeframe, and resources of the Committee and, as such, we have no opinion on this
671 matter other than making a small budgetary allowance within reconstruction scenarios.

672

673

674

Section 3 – Street Treatment Types

675

676 The need for street maintenance and reconstruction is large. However, the budget is necessarily small.
677 As such, there will always be difficult choices that must be made to allocate scarce funding for maximum
678 effect. Life extension of existing assets is the only way to cope with the physical and fiscal reality.

679 Ultimately, any street management program will be a combination of the following treatments:

680 3.1 Targeted Area Reclamation (“TAR”)

Finding / Recommendation 3.1:

The Committee recommends that the City funds a program of residential street spending to achieve a Targeted Area Reclamation (a “TAR”) with a defined budget amount and program cycle time. The TAR is a proactive, intensive maintenance cycle applied throughout the City to extend the functional life of streets until reconstruction can occur.

681

682 The Targeted Area Reclamation is an intensive maintenance program which is designed to pro-actively
683 service streets throughout the City. The goal of the targeted area repairs is street life extension.

684 The TAR program repairs targeted areas to alleviate damaging conditions, dangerous conditions, low
685 quality ride areas, or other specific areas that need remediation. Examples of problems that would be
686 addressed can include but are not limited to jarring dips, recurring pot holes, and lane sag as examples.
687 The TAR could also be used to achieve signage/stripping designation of Metropolitan Planning
688 Organization (“MPO”) bike routes on residential streets, to the extent that these improvements are not
689 directly funded by the MPO.

690 Remediation treatments can include but are not limited to area wear-layer treatments, micro-surfacing,
691 area limited depth repair, area full depth repair, level-up treatments, structural pot hole repair, and
692 signage/stripping improvement, as examples. Improvements may also be made to curb, gutter, and
693 flatwork as necessary. These treatments are currently used by the City on a smaller scale and more
694 reactive basis. So there is substantial precedent that this type of process is both achievable and
695 effective.

696 There will also be overlay-type improvements in the limited case where the streets require minimal
697 ADA, curb, gutter, or flatwork. In these cases the overlay process is extremely cost effective, because
698 almost all the money funds street surface renewal and little is required to be spent on ancillary facilities.

699 There are two key policy decisions that must be made with respect to the TAR process:

- 700 • The budget per unit of area. Policy makers would determine the annual amount of the program
- 701 in their sole discretion. However, the Committee envision that the annual amount is
- 702 approximately sized to be the financial equivalent of reconstruction of 10% of the surface area
- 703 of the streets with a PCI < 55 within a defined area.
- 704

- 705 • The cycle time to service all areas. The promise to the citizens is that by completing a TAR cycle,
706 each neighborhood within the City will have received proactive intensive maintenance within a
707 defined number of years. It is this promise to the Citizens that is an important part of any policy.
708 The Committee believes that the appropriate range of cycle span is five to seven years.

709 The first element of defining the TAR process is to determine Project Units which are geographic areas
710 that segment Districts into areas for which an annual TAR workplan is produced. Project Units are
711 logically defined, compact areas within City Council Districts that each have approximately the same
712 square yardage of surface area of residential streets with a PCI less than 55. The number of Project
713 Units within a district is equal to the number of years required to achieve intensive maintenance to the
714 entire District area. For example, if the policy makers determine that the entire City should receive TAR
715 maintenance over a five year cycle, then there would be five Project Units within each district. The
716 Project Units will be designated by District number and year order related to a particular TAR cycle. As a
717 hypothetical example on a five year cycle for District 1, there will be TAR 1-2017, TAR 1-2018, TAR 1-
718 2019, TAR 1-2020, TAR 1-2021.

719 The second element of the TAR process is to allocate funding to each Project Unit. The allocation is
720 made by taking the total annual budget amount and dividing by the total square yardage of all Project
721 Units expected to be completed for that particular year. The resulting amount is the allocated dollars
722 per square yard. This factor is multiplied by the square yardage of a particular Project Unit to determine
723 the total budget dollars available that year for a particular area.

724 The third element of the TAR is a detailed workplan for the streets within that year's TAR Project Units.
725 The workplan is determined by a qualified street expert. The workplan identifies the specific problems
726 and the proscriptive fix for each location. The amount and degree of work is limited by the budget
727 allocated to the area under review.

728 TAR treatments would not be implemented on streets that had failed and are included in the Rebuild
729 program.

730 While the spending between districts may be uneven due to the differing amount of residential roads in
731 poor condition within each district, each area would receive funding proportional to the amount of poor
732 condition streets in a particular area as compared with the City as a whole. We think that this achieves
733 equity in street maintenance among citizens across the City.

734 The TAR process does improve the utility and safety of the streets. This method stretches the life out of
735 streets to the fullest extent possible; however, it is not a substitute for replacement of failed streets or
736 facilities. We do think that this approach benefits the City's water and wastewater utilities by allowing
737 time for them to engage in an independent process to prioritize their spending to meet EPA
738 requirements and assess under-street facilities health.

739 As compared with traditional reconstruction alternatives, the TAR is very effective at reclaiming problem
740 areas of the surface of residential City streets per dollar spent. However it must be acknowledged that it
741 achieves this by not improving curbs/gutters, under street utilities, or storm water drainage in material
742 amounts.

743 The typical street serviced by the TAR will have sections that are unimproved. The damage repair in the
744 areas that have received the intensive reclamation will appear to be new road surface. Visually the
745 street will have a patchwork appearance, but the damage in the target area will be fixed.

746 The City may implement TAR treatments using both internal street operation resources as well as
747 outside consultants. In addition to the large-scale contractors, we believe that there will be the
748 opportunity for the City to strategically and effectively use small contractors to provide specific
749 treatments or over small areas.

750 We believe that the first TAR cycle has the most value to address the most visible and ride impacting
751 problems. The Committee recommends that the TAR program is reviewed in its entirety after the first
752 cycle to judge its effectiveness and to assess the incremental value of a second cycle. We believe that
753 the completion of the first TAR cycle will probably coincide with the completion of the Harbor Bridge
754 and other major road projects such that availability of materials, contractors, or experienced workers
755 may impact City priorities or cost structure of road repair.

756

757 3.2 Rebuilding Residential Streets

Finding / Recommendation 3.2:

The Committee recommends that the City funds a program of residential street spending known as Rebuild with a defined budget amount. Streets that are rebuilt will receive a new wear surface, base renewal, curb/gutter/ADA improvements, and under-street utilities as required.

758

759 Rebuild consists of a choice between two methods to address a failed street, either rework or
760 reconstruct. The choice between these two processes for any particular street is determined by
761 evaluating the street base, sub-soil, and existing materials quality in order to determine the possibility or
762 degree of reuse of existing street materials. There is also evaluation of the under-street water, waste
763 water, gas, and stormwater utilities for replacement or reconfiguration which may impact the decision
764 between rebuilding methods.

765 During the rebuilding process curb, gutter, flatwork, and ADA required improvements are made.

766 Rework:

767 The rework process is a proven and cost effective method of rebuilding failed streets. For streets that
768 are tested and have sufficient base and favorable sub-grade conditions, the City can rebuild the street
769 using a rework process. That process mills the existing surface and base, stabilizes the mixture with
770 additives, and re-uses about 80 percent of the materials in situ. A new wear surface is applied as the
771 final step.

772 The street is functionally new at a cost less than full depth reconstruction.

773 The City used to complete the rework process with internal crews. The best example is Texan Trail
774 between Reid and Staples that was reworked in August 2011 and remains in excellent condition.

775 Reconstruct:

776 Reconstruction is the required rebuilding process for failed streets where testing indicates that a rework
777 is not possible or for streets that must be reconfigured. The existing material is removed. The sub-
778 grade soil is mechanically and chemically stabilized. New base and wear surface is applied.

779 During the Reconstruction process, the under-street water, waste water, and gas utility facilities are
780 evaluated and replaced if necessary to be funded by the respective utility departments. Stormwater will
781 be considered subject to a budget limitations.

782

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Section 4 – Prioritizing Street Rebuilding

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787

4.0 Prioritization Recommendation

Finding / Recommendation 4.0:

The Committee recommends prioritizing street rebuilding according to a process that considers road condition, safety, maintenance history, proximity to schools, population density, utility coordination, transportation coordination, and road network connectivity.

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In order to effect a rebuilding program, failed streets must be prioritized. This is a very difficult process to define but it is critically important so that it is implemented in an unbiased manner across the City and free from political considerations as much as possible. The process must be transparent, stable, organized, and well understood by all stakeholders. The results must be documented and available to the public.

794

795

796

The deliverable from the City to the citizens is a list of streets in order of expected reconstruction for each District. Each street accepted for reconstruction would have a defined work plan and associated budget. Roads not accepted for reconstruction would be eligible for service by the TAR process.

797

798

799

The Committee expects that the prioritization process will occur on a two year cycle which corresponds to recent Transmap data (or the equivalent) and the expected cycle of automated measurement of street health.

800

Prioritization Step 1 – Determination of Budget by District:

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802

803

Each year, in conjunction with the budget cycle, the determination is made to divide the amount budgeted for street rebuilding between Districts. The calculation is designed to allocate budget according to relative need.

804

805

806

807

The City shall determine the total square yardage of residential streets with a PCI value of less than 55 for each District. Using the aforementioned total, the percentage of the annual budget for each District shall be the proportion of square yardage for the streets within a particular District as a ratio to the total square yardage among all Districts.

808

Prioritization Step 2 – Triage:

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810

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The candidate list of streets to be considered for Rebuilding shall consist of each residential street segments with a PCI of less than 20. The ranking process should be repeated for each District, because each District will have an independently prioritized list of streets designated for Rebuilding.

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815

The triage is important because there are hundreds of streets that are in poor condition, and there is not enough budget or contracting capacity to address them all. By making an upfront determination of severity using a data-centric ranking, the City avoids spending time, labor, and expense to evaluate every situation in a detailed manner, but for which there are insufficient funds to address through

816 reconstruction. This process is also an important feedback mechanism for conditions that can be
 817 ameliorated through the TAR process.

818 The street candidate list shall then be scored according to the following matrix:

Element	Description
Ridability	The City will evaluate the use of the International Roughness Index, as provided by Transmap, as a proxy for degradation of road surface. Most people perceive road roughness as the indicator of road quality. The rougher the road, the higher the rank for a particular street.
Safety	The City will evaluate the accident reporting from the City’s various public safety departments. The higher the incidence or severity of accidents, the higher the rank for a particular street.
Maintenance History	The City will evaluate the historical record of repairs to a particular road segment in order to determine the frequency of material problems. Repeated repairs within the same road segment can indicate the need for the rebuilding as a permanent solution to recurring problems. The higher the number of recurring problems per review period, the higher the rank for a particular street.
Proximity to schools	The City will evaluate the proximity of the road segment to schools. Schools generate substantial local traffic and need safe streets and supporting street infrastructure such as curbs, gutter, and sidewalks. The closer the street is to a school, the higher the rank of the street.
Population density	The City will evaluate the population density along the road segment if the data is available throughout the City or alternatively as a density of improved lots as a proxy for population if the data is otherwise unavailable. The higher population density, the higher the rank for a particular street.
Utility coordination	The City’s utilities have under-street utilities for about 50% of the residential streets. The utility will report the street as a priority, neutral, or negative based on utility knowledge of the conditions and cost of replacement for facilities. A particular street will be ranked from priority as highest and negative as lowest.
Transportation coordination	The City has transportation priorities as determined by traffic engineering to increase safety or reduce traffic backups as examples. There are also planning organizations such as the

	MPO which have designated certain streets as being important to the transportation health of the City. The City will score each street as priority, neutral, or negative based on traffic priorities or planning organizations. A particular street will be ranked from priority as highest and negative as lowest.
Road network connectivity	Residential road segments at each end have either a dead-end, another residential street, a collector street, or an arterial street. The City will calculate a score for a particular street based on the importance of the connections at both ends. Streets will be ranked based on the intensity of their road network connection. Arterial connected streets will rank highest, residential road / dead end streets will rank the lowest.

819

820 The ranking for each category listed above shall have the same weight. Staff will determine the optimal
821 scoring matrix consistent with Committee priorities.

822 The list shall be truncated at 140% of the estimated square yardage that can be serviced within a two
823 year period using standard cost estimates for reconstruction, the expected annual budget, and the
824 square yardage of the street segments. However, for discussion purposes, the Staff may generate a five
825 year list.

826 We have chosen variables that attempt to fix the streets in worst condition but have the highest social
827 impact. We have also tried to improve the efficiency of City spending by identifying roads where a fix
828 can eliminate maintenance costs associated with recurring visits or avoid replacement of utility facilities
829 that have remaining useful life.

830 **Prioritization Step 3 – Information Gathering:**

831 The third step is to gather information necessary to ensure quality of the list results as well as estimate
832 cost of rebuilding for each street segment.

833 For each street segment on the list, a qualified person will visit the street to confirm the degree of street
834 surface failure, evaluate expensive proximate problems such as insufficient stormwater drainage, quality
835 of base or other materials, and condition of curbs/gutters/flatwork/ADA, among other variables. If the
836 street condition is consistent with expected degree of failure, then the street segment will remain on
837 the list for further evaluation.

838 The City should develop a workplan and standard-cost budget estimate for the street segment
839 rebuilding:

- 840 • City and non-City utilities will be notified that street is being considered for replacement so that
841 they advise the City if the street impacts their independent strategic priorities.
- 842
- 843 • Gather historical information regarding street construction, surface/sub-surface testing,
844 maintenance history, third-party street work, etc.
- 845

- 846 • Estimate budget for replacement using standard cost methodologies for surface, curb/gutter,
847 ADA, utilities net of any possibility of cost sharing or reimbursement from non-City entity.
848
- 849 • Estimate budget for any required stormwater facilities cost or other special situation costs.
850
- 851 • Estimate saving associated with efficient mobilization related to other City projects or between
852 street segment candidates.
853
- 854 • Notify any potential sources of cost sharing such as other governmental entities or third-party
855 utilities.
856

857 The workproduct for each street is a small decision package which is easy to create consisting of the net-
858 cost budget, a short narrative, a few pictures, and an overhead street view.

859 **Prioritization Step 4 – High Cost Exception Diversion:**

860 The fourth step is the diversion to high-cost exception list. Certain streets that have failed and would
861 otherwise have a high priority are disproportionately expensive to rebuild. The best example of a
862 condition causing high cost is the need for improvement or addition of stormwater facilities.

863 Because the total funding for rebuilding is limited, there is the potential for a high-cost street to absorb
864 a large fraction of the Rebuild budget to rebuild a single street. By moving the high-cost streets to a
865 separate list for consideration of supplemental funding, the number of regular cost streets which can be
866 rebuilt is maximized.

867 Here is the process for diversion of high-cost streets from the regular rebuilding list:

- 868 • If stormwater or other special situation costs are more than 20% of the estimated budget, then
869 road is placed on a “High-Cost Exception List”
870
- 871 • High-Cost Exception List gets circulated to City Council or other relevant City departments
872
- 873 • The high-cost element is specifically funded or not
 - 874 - Dedicated stormwater funding source or allocated funds for purpose
 - 875 - Private or third-party funds
 - 876 - City Council direction for appropriation or for street program to absorb cost
- 877 • If high-cost element is funded, then street returns to normal ranking process
878
- 879 • If high-cost element is not funded, then street stays on high-cost exception list

880 **Prioritization Step 5 – Finalization of Rebuild Annual Work Plan:**

881 The Rebuild Annual Work Plan is established by assuming rebuilding of streets in rank order from the list
882 for each District. The Rebuild Annual Work Plan is then communicated and authorized:

- 883 • Publish to public and provide City Council with preliminary findings with respect to streets,
884 scoring and District list
- 885 • Public hearing hosted by City staff, can be central or by District
- 886 • Following public hearings, the City Council ratifies Rebuild Annual Work Plan

887 Once a road is accepted on an annual work plan, it will be completed in the expected year or become
888 the first road for the next year rollover. If the City is ahead of schedule and under budget, then the
889 street rebuilding can continue down the list in regular order of District rotation or savings added to
890 subsequent year's plan. If work is over-budget, then amount is 'borrowed' from subsequent year's
891 annual work plan.

892 Streets on ranking list but not in a work plan are referred to TAR list. With City Council approval,
893 unplanned road reconstruction may be jumped into line within a District for good cause, to be
894 determined by the City Council.

895 Results of the finalization and regular reporting of progress should be communicated to the public with
896 respect to any particular street.

897 **Other Considerations:**

898 The Committee is recommending the use of PCI and the related roughness index as a major component
899 to prioritize streets.

900 However, many on the committee have substantial reservations as to the usefulness of PCI in the lower
901 value ranges (i.e. less than 40) as a measure of comparative street health. In making our
902 recommendation, we are trusting the Staff representation to the Committee that the new values from
903 Transmap highly correlate to actual street health.

904 If the Transmap values demonstrate the lack of correlation with street health that we observed in the
905 prior City data, then other proxies or methods must be substituted in order for the City to achieve
906 maximum benefit from this program.

907

908

909

Section 5 – Reconstruction Scenarios

910

911 The goal for the reconstruction program is to get the process underway at a level that credibly starts to
 912 address the problem of rebuilding residential streets. Unsurprisingly, if the City spends more money, it
 913 can rebuild more streets. If we successfully plan and execute a baseline plan, then there will be the
 914 opportunity to add funding on a one-time or recurring basis and accelerate the process.

915 With this in mind, the Committee presents funding scenarios of \$10 million, \$14 million, \$15 million, \$17
 916 million and \$20 million per year. Certainly intermediate funding levels will produce intermediate results.

917 Whatever level of funding is chosen, it will be prudent to reassess the plan in a five year timeframe.
 918 Within the next few years, the building of the Harbor Bridge and other TxDOT projects will present a
 919 challenge and opportunity for street operations. The challenge will be competition for experienced
 920 crews, materials, and contractor attention. The opportunity will be the potential for increased
 921 contractor capacity and new materials supplies to flow into the region. The key will be to reassess street
 922 programs at the end of the Harbor Bridge project, with the possibility of expanding City street
 923 replacement to take advantage of the wind-down of those projects.

924 Here is the spending by treatment for each scenario:

925

Program Size	\$10 mm	\$14 mm	\$17 mm	\$20 mm
TAR (Cycle length)	\$0	\$9 mm/yr (7 year cycle)	\$12 mm/yr (5 year cycle)	\$12 mm/yr (5 year cycle)
Rebuild	\$10mm/yr	\$5 mm/yr	\$5 mm/yr	\$8 mm/yr
Totals	\$10 mm/yr	\$14 mm/yr	\$17 mm/yr	\$20 mm/yr

926

927 **\$10 Million Scenario:**

928 The \$10 million scenario primarily spends the funding directly on rebuilding failed streets. Because the
 929 funding amount is small, it is unlikely that it would be worth the effort to establish a TAR program.

930

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 29	Year 30
Annual TAR Mileage Equivalent	-	-	-	-	-	-	-	-	-	-	-	-
Annual Mileage Rebuild	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Annual Mileage Rebuild Equiv	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Cumul Mileage Streets Serviced	4.7	9.4	14.2	18.9	23.6	28.3	33.0	37.8	42.5	47.2	136.9	141.6
% Street Rebuilt Equivalent	1%	1%	2%	2%	3%	3%	4%	5%	5%	6%	17%	17%
Total Program Spend	10,000,000	10,200,000	10,404,000	10,612,080	10,824,322	11,040,808	11,261,624	11,486,857	11,716,594	11,950,926	17,410,242	17,758,447
Associated Util Spend	4,993,307	5,093,174	5,195,037	5,298,938	5,404,917	5,513,015	5,623,275	5,735,741	5,850,455	5,967,465	8,693,469	8,867,338
Storm Water	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cost to City	15,993,307	16,293,174	16,599,037	16,911,018	17,229,238	17,553,823	17,884,899	18,222,597	18,567,049	18,918,390	27,103,711	27,625,785

931 Rebuilding streets is expensive. By the end of year 5 only 3% of the streets would be rebuilt. By the end
 932 of year 30 only 17% of the streets would be rebuilt. Including an estimate of the associated utility
 933 spending, the total impact of the project is approximately \$16 million per year.

934

935 **\$14 Million Scenario:**

936 The \$14 million scenario contains a TAR with a seven year service cycle and \$5 million in rebuilding.

937

Program Table	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 29	Year 30
Annual TAR Milage Equivalent	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Annual Milage Rebuild	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Annual Milage Rebuild Equiv	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
Cumul Milage Streets Serviced	11.5	23.1	34.6	46.2	57.7	69.3	80.8	92.4	103.9	115.5	334.9	346.5
% Street Rebuilt Equivalent	1%	3%	4%	6%	7%	9%	10%	11%	13%	14%	41%	43%
Total Program Spend	14,000,000	14,280,000	14,565,600	14,856,912	15,154,050	15,457,131	15,766,274	16,081,599	16,403,231	16,731,296	24,374,339	24,861,826
Associated Util Spend	2,496,654	2,546,587	2,597,519	2,649,469	2,702,458	2,756,507	2,811,638	2,867,870	2,925,228	2,983,732	4,346,735	4,433,669
Storm Water	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cost to City	17,496,654	17,826,587	18,163,119	18,506,381	18,856,509	19,213,639	19,577,911	19,949,470	20,328,459	20,715,028	29,721,073	30,295,495

938

939 The inclusion of the TAR stretches the street surface funding primarily by ignoring problems with curbs,
 940 gutters and ancillary facilities. By the end of year 5, an equivalent of 7% of the streets would be rebuilt.
 941 By the end of year 30, an equivalent of 43% of the streets would be rebuilt. Including an estimate of the
 942 associated utility spending, the total impact of the project is approximately \$17.5 million per year.

943 As compared with the scenario that is weighted to rebuilding, utility expenditures are reduced. While
 944 the street budget increased by \$4 million per year, the program total only increased by \$1.5 million due
 945 to the offset.

946

947 **\$17 Million Scenario:**

948 The \$17 million scenario contains a TAR with a five year service cycle and \$5 million in rebuilding.

Program Table	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 29	Year 30
Annual TAR Milage Equivalent	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Annual Milage Rebuild	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Annual Milage Rebuild Equiv	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
Cumul Milage Streets Serviced	14.9	29.8	44.8	59.7	74.6	89.5	104.4	119.4	134.3	149.2	432.7	447.6
% Street Rebuilt Equivalent	2%	4%	6%	7%	9%	11%	13%	15%	17%	18%	53%	55%
Total Program Spend	17,000,000	17,340,000	17,686,800	18,040,536	18,401,347	18,769,374	19,144,761	19,527,656	19,918,209	20,316,574	29,597,412	30,189,360
Associated Util Spend	2,496,654	2,546,587	2,597,519	2,649,469	2,702,458	2,756,507	2,811,638	2,867,870	2,925,228	2,983,732	4,346,735	4,433,669
Storm Water	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cost to City	20,496,654	20,886,587	21,284,319	21,690,005	22,103,805	22,525,881	22,956,399	23,395,527	23,843,437	24,300,306	34,944,146	35,623,029

949

950 This scenario is probably the optimal level of spending. All neighborhoods get an intensive service
 951 within a reasonably short period and the rebuilding gets underway at a meaningful level. Corresponding
 952 utility spending is at a relatively low level.

953 By the end of year 5, an equivalent of 9% of the streets would be rebuilt. By the end of year 30, an
 954 equivalent of 55% of the streets would be rebuilt. Including an estimate of the associated utility
 955 spending, the total impact of the project is approximately \$20.5 million per year.

956

957

958 **\$20 Million Scenario:**

959 The \$20 million scenario contains a TAR with a five year service cycle and \$8 million in rebuilding.

Program Table	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 29	Year 30
Annual TAR Milage Equivalent	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Annual Milage Rebuild	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Annual Milage Rebuild Equiv	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3
Cumul Milage Streets Serviced	16.3	32.7	49.0	65.3	81.7	98.0	114.3	130.7	147.0	163.4	473.7	490.1
% Street Rebuilt Equivalent	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%	58%	60%
Total Program Spend	20,000,000	20,400,000	20,808,000	21,224,160	21,648,643	22,081,616	22,523,248	22,973,713	23,433,188	23,901,851	34,820,484	35,516,894
Associated Util Spend	3,994,646	4,074,539	4,156,030	4,239,150	4,323,933	4,410,412	4,498,620	4,588,593	4,680,364	4,773,972	6,954,775	7,093,871
Storm Water	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cost to City	24,994,646	25,474,539	25,964,030	26,463,310	26,972,576	27,492,028	28,021,869	28,562,306	29,113,552	29,675,823	42,775,259	43,610,765

960

961 By the end of year 5, an equivalent of 10% of the streets would be rebuilt. By the end of year 30, an
 962 equivalent of 60% of the streets would be rebuilt. Including an estimate of the associated utility
 963 spending, the total impact of the project is approximately \$25 million per year.

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967

Section 6 -- Financing

968 Although financing and determining sources of new funds for street improvements was not a primary
969 task of the Committee, it is worth sharing Committee thoughts on program financing, as well as
970 outlining numerous potential sources of funds under discussion for proposed new residential street
971 programs.

972 6.1 Monitor Activity, Spending and Outcomes from New Residential Street Funding

Finding / Recommendation 6.1:

We recommend the City regularly report and publish a clear accounting of how and where individual program dollars are spent and to be transparent if program funds are increased, decreased or reallocated.

973

974 Both the Residential TAR Program and the Residential Street Rebuild (Rework & Reconstruction)
975 Program described in this report are designed as new programs with new funding in order to assure
976 independent tracking and reporting on the activity, spending and outcomes derived from these new
977 dollars.

978

979 6.2 Static Funding

Finding / Recommendation 6.2:

We recommend that street program funding be increased annually at least at the general rate of inflation and proportionate network growth.

980

981 The Committee recognizes that static funding of programs over time may result in underfunding and/or
982 understaffing program activity. A case in point is funding for City street operations has been flat for over
983 a decade despite growth in the street network and the increased cost of inflation. It is important that
984 program funding be increased annually at least at the general rate of inflation. As the City improves its
985 ability to understand its standard cost structure, we expect the City will be in a better position to better
986 determine growth demands and inflationary impact on actual program spending and then budget
987 accordingly.

988

989 6.3 Sources of FundsFinding / Recommendation 6.3:

We recommend that the Council direct the City Manager to explore all possible funding sources for residential street programs and prepare a recommendation for Council consideration.

990

991 RTA Funding of City Street Aspects. Our survey of other Texas cities showed a number of cities receive
 992 funding from their Transportation Authorities for both street maintenance and street reconstruction,
 993 expanding their traditional investment in bus stops and surrounding street elements, as well as for
 994 offsetting the wear and tear of city buses on the street network.

995 The Committee Chair had preliminary meetings with the RTA regarding their funding of street
 996 improvements. In general, these discussions centered on RTA funding of about \$1.5 million per year.

997 Work still needs to be done to define the elements of street projects which support the RTA in their core
 998 mission of network transportation. We believe that bicycle mobility and American Disability Act
 999 accommodations are elements of street projects that are consistent with the RTA's core mission to serve
 1000 economically disadvantaged and disabled citizens. Additionally, the journey to and from residential
 1001 homes to a bus stop is an important part of end-to-end service and leverages RTA's substantial
 1002 investment in bike and ADA accommodations.

1003 The funding under consideration would be in addition to existing contributions to street programs by
 1004 the RTA and not a reallocation of existing funding. It is expected that to the extent possible, we will work
 1005 together to qualify this additional funding for direct or indirect Federal funding. Any actual arrangement
 1006 between the RTA and the City must ultimately be determined and agreed to by the respective oversight
 1007 authorities.

1008 Budget Savings and/or Reallocation of Existing Dollars. As part of the City's zero based budgeting
 1009 initiative, any reprioritization of existing dollars, as well as any identified budget savings, should be
 1010 considered in developing new funding for proposed residential street programs.

1011 Dedicated General Fund and Industrial District Revenue. The Council's Financial Budgetary Policies
 1012 Resolution #029848 provides policy direction to the City Manager on the preparation of annual budgets.
 1013 Included in this resolution are the defined General Fund and Industrial District Revenue contributions to
 1014 residential street capital improvements. The resolution was discussed at length in the most recent
 1015 Council Retreat where the Council talked about reviewing these specific policies regularly for
 1016 appropriate future funding levels, as well as for inflation and growth impacts.

- 1017 • For 3 years beginning in 2015, transfer \$1m each year from the uncommitted fund balance of
 1018 the General Fund to the Residential Street Capital Fund
- 1019
- 1020 • Beginning in 2016, transfer 5% of the Industrial District Revenue to the Residential Street Capital
 1021 Funding
- 1022

- 1023
- 1024
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- 1030
- In 2021, transfer 1/3 of one percent of the General Fund revenue less grants and industrial district revenue to the Residential Street Capital Funding
 - In 2022, transfer 2/3 of one percent of the General Fund revenue less grants and industrial district revenue to the Residential Street Capital Funding
 - In 2023, transfer one percent of the General Fund revenue less grants and industrial district revenue to the Residential Street Capital Funding

1031 Repurpose Whataburger Field Debt Service Funds. The 1/8 cent dedicated sales tax known as Type A
 1032 funds approved by voters in 2002 is coming back to voters this November. Type A funds are allowed to
 1033 be used primarily for economic development, affordable housing and some special event facility debt. In
 1034 our case, the \$2.5 million in annual debt service for Whataburger Field is funded by a portion of our
 1035 current Type A dollars. The Whataburger Field debt is paid off September 2017, freeing up
 1036 approximately \$2.5 million a year in 2018 for another purpose.

1037 Council is currently considering November ballot language changing from a Type A program to either a
 1038 Type B program which allows spending dollars on arterial reconstruction or to a General Revenue
 1039 program which allows the dollars to be spent on any street reconstruction, including directly on
 1040 residential streets. If Type B is chosen, some future arterial reconstruction bond programs could be
 1041 replaced with residential reconstruction bond programs.

1042 Both options allow continued funding of economic development and affordable housing initiatives.
 1043 Council is also considering a different allocation of these dedicated sales tax dollars to increase the
 1044 money available for street improvements from \$2.5 million to approximately \$3.5 million annually.

1045 Charter Revision for Additional Dedicated Operations and Maintenance Property Tax Revenue. The
 1046 current Charter Revision Committee is set to bring recommended charter changes to the City Council for
 1047 potential consideration by voters in November. One measure under discussion would allow future City
 1048 Councils to raise property tax rates under certain constraints for dedicated spending on street
 1049 improvements.

1050 Dedicated Spending from Revenue Growth. Tax revenue generated by new growth each year in the City
 1051 should be isolated and reported, with some portion of that revenue increase considered for dedicated
 1052 spending on residential street improvements.

1053 Ad Valorem Tax Increase. Currently one additional cent on the property tax rate generates about an
 1054 additional \$1.7 million per year which the Council could appropriate for any municipal purpose,
 1055 including street improvements.

1056

Section 7 -- Communications

7.1 General Communications of Street Programs

Finding / Recommendation 7.1:

The Committee recommends that the City design a standardized communications program so that the public understands the plan for future work, the scope of current work, and an accounting of completed work.

For project based departments, the communication with the public should start with a promise. You give us "\$X" dollars and we will give you "Y" streets. The elements of the promise are a proposed budget, a defined scope of work, and a specific timeframe. The promise must be made before work starts; progress must be documented on a periodic basis; and there must be a thorough accounting of the final result.

Here are committee recommendations in an effort to meet the promise standard:

- Electronically publish the engineering work plan and budget associated with each project / contract let.
- The budget year, the work plan year, and the final accounting should all line-up at the end of the fiscal year to the maximum extent possible. At the end of the fiscal year, work planned and actual work performed should be accounted for. Budget versus actual should be clearly disclosed.
- Carryover amounts related to pending or uncommitted-unfinished work should be clearly presented. This allows for consideration of adequate staffing if and when the deferred work is undertaken and so that the make-up of the work becomes a policy matter by leadership.
- Name the work plan in a logical way that indicates when the work is expected to get done. For example the '2016 Seal Coat Work Plan' would be streets expected to be seal coated in fiscal year 2016. Avoid terms like Year 2 Plan, as an example in order to avoid confusion.
- On a monthly (or other) periodic basis, publish the expected work plan and the actual work performed. Publish budget and timing variances as well as the updated resulting work plan.
- Publish the raw data without spending a lot of time massaging – this would include inspection reports, acceptance reports, invoices, contract awards, etc. -- let search algorithms (e.g. google) index and catalog the reporting.

- 1089
- Publish before and after pictures of the work performed. It would help the average citizen understand the magnitude and scope of work being performed.
- 1090
- 1091
- Identify and disclose troubled projects so that there is confidence that issues are being address and not ignored. Everyone understands that problems will occur – the distinguishing character of good management is the ability to adapt and overcome. There is a tendency in large organizations to bury bad news; this inclination must be overcome and be replaced with sense of disclosure.
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1098 7.2 Communications of Street Program Complaints

Finding / Recommendation 7.2:

The Committee recommends that the City reinforce existing processes and procedures so that the Call Center can serve as the citizen point of contact for the City's professional response to specific citizen complaints or inquiry.

- 1099
- 1100 The Committee recognizes that citizens are the ultimate customer of City services including streets.
- 1101 There is a balance that must be maintained:
- Citizens must be provided with a complete, correct, and thoughtful reply to specific issues that an individual may raise. These situations include complaints about an individual street problem or complaints about contractor/street operations work, as examples among many.
 - Direct and unfiltered contact between a complaining citizen and members of the Street Operations or Engineering Department requires a substantial investment of time and department resources. When this occurs, the core mission of the department suffers, the immediate work at hand is derailed, and there is an enormous emotional toll on the individual employees who may not be expert in customer communications.

1111 The City's Call Center already has processes in place to take the complaint and get answers from the relevant departments. The Call Center is also staffed with professional communications experts who are trained to achieve appropriate communication goals. These staff members can also keep City Council or other co-inquiring management in the loop in a more organized manner.

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1115 By incorporating the Call Center into the path of complaints, the Committee believes that the feedback to the citizen will be improved, the deleterious impact on the department will be reduced, and City management can have a specific person accountable for professional response to the public.

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Definitions

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1125 Acquisition Planning –Acquisition planning is the combined role of strategic purchasing and contract
1126 administration. Reference page 11, Section 2.4.

1127 ADA – Americans with Disabilities Act, and for purposes of this document, all related rules and
1128 regulations related to facilities that require special design

1129 Arterial -- An arterial road is a high-capacity urban road. The primary function of an arterial road is to
1130 deliver traffic from collector roads to freeways or expressways, and between urban centers.

1131 Collector -- A collector road is a low-to-moderate-capacity road which serves to move traffic from
1132 residential streets to arterial roads.

1133 ETJ – “Extra Territorial Jurisdiction”. The ETJ is the unincorporated land within five miles of Corpus
1134 Christi’s boundary that is not within the city limits or ETJ of another city. It is the territory where Corpus
1135 Christi alone is authorized to annex land. To a limited degree, the ETJ enables the City to extend
1136 regulations to adjacent land where development can affect quality of life within the city.

1137 IDIQ – “Indefinite Delivery, Indefinite Quantity”. A contracting method whereby competing contractors
1138 submits bids that consist of à la carte service pricing. Reference page 8, Section 2.2.

1139 Overlay – A street renewal and maintenance process whereby the asphalt surface of the road is milled
1140 and replaced with a new wear surface. Reference page 18, Section 2.10.

1141 PCI – “Pavement Condition Index”. The PCI is a numerical index between 0 and 100 which is used to
1142 indicate the general condition of a pavement based on ride affecting and non-ride affecting conditions.
1143 It is a statistical measure of road health. Historically in Corpus Christi it has been based on visual
1144 inspection by qualified reviewers. However the process was recently automated by a company known
1145 as Transmap. Reference page 31, “Other Considerations”.

1146 Rebuild – Rebuild is a process to replace a failed street. For purposes of this report, it is either a
1147 Reconstruct or a Rework. The choice between methods is a function of street environment and
1148 condition of materials comprising the failed street. Reference page 25, Section 3.2.

1149 Reconstruct – Reconstruct is a process to replace a failed street. It involves removal and replacement of
1150 the existing street materials. This method is selected if the conditions of the environment or the
1151 materials indicate that re-use would not be effective. It is also indicated where under-street utilities are
1152 replaced. Reference page 26.

1153 Residential Collector – A Collector road that primarily services residential neighborhoods and may have
1154 residences along the road itself.

1155 Rework -- Rework is a process to replace a failed street. It involves milling the existing materials,
1156 chemical stabilization, and reuse of a substantial fraction of existing street materials. New material is
1157 added as required. This method is selected if the conditions of the environment and the materials
1158 indicate that re-use would be effective. Reference page 25.

1159 Seal Coat -- A sealcoat is a preventive maintenance surface treatment designed to preserve and extend
1160 the life of a street. In general, the process involves application of a thin layer of asphalt emulsion and
1161 gravel to the road surface. Reference page 17, Section 2.9.

1162 "SPMP" -- The Street Preventative Maintenance Program.

1163 Street Preventative Maintenance Program -- "SPMP". A program of preventive maintenance designed to
1164 preserve and extend the life of a street. The program is funded by a street fee on the water utility bill of
1165 most residences and commercial customers as well as by contribution from other sources. The program
1166 is entering its third year in 2016. It is applied to each category of streets. The processes are seal coats
1167 and overlays.

1168 "TAR" -- Targeted Area Reclamation

1169 Targeted Area Reclamation -- "TAR". The Targeted Area Reclamation is an intensive maintenance
1170 program which is designed to pro-actively service streets throughout the City. The goal of the targeted
1171 area repairs is street life extension. The TAR program is designed to alleviate damaging conditions,
1172 dangerous conditions, low quality ride areas, or other specific areas that need remediation. Reference
1173 page 23, Section 3.1.

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