

## **RTA CART Agenda Item No. 8**

Subject: Review of the Original RTA 2005 Cost Estimates

Date: March 27, 2012

### **Background:**

The validity of the original 2005 RTA cost estimates used in establishing the RTA Plan has recently been questioned in the media and newsletters. This committee reviewed these cost estimates as a part of the development of the RTA Plan. Staff will review the process undertaken at the time of plan preparation, as well as directions given to set the final costs.

### **Report:**

The RTA took extensive steps to develop the ballot amounts identified in the RTA Plan prior to the May 16, 2006 RTA election. The amount of effort made to estimate the anticipated project costs exceeded that of any prior bond or transportation initiative in the region.

#### History of Cost Estimate Development

The development of the RTA project list was guided by many parties; initial roadway requests were made by jurisdictional staff, based upon local priorities; with the goal of developing corridors of mobility, the guidance of the Citizens Advisory Committee (CAC) and Technical/Management Committee (TMC) testing assumptions, and the feedback of the general public through three series of outreach meetings the plan evolved into what was presented to the voters.

As the initial project list for the RTA was developed, the need for a competent cost estimate was quickly recognized. The RTA engaged HDR Engineering, a national firm with a long standing local presence and specialization in transportation projects to develop cost estimates. The initial cost estimate report, delivered to the RTA on May 2, 2005, projected the costs for 28 projects. This report projected costs of construction based upon the recent cost history for projects in the region, and adjusted for inflation to match current costs. No specific, detailed design considerations were employed in this estimate, except where more advanced design had already been produced for candidate projects.

Upon review of this estimate, it was determined that a more detailed cost estimate was needed for greater confidence in the ballot amounts being prepared. A second cost estimate was prepared by URS Corporation, also a national firm with a long standing local presence and specialization in transportation projects. This cost estimate was prepared after concept plans were prepared to project material needs and identify significant constraints which might add additional cost to the projects. At the same time, the project list was being refined, and priorities identified. The second cost estimate used an expanded project list, based upon evolving plan elements. URS developed conceptual cost estimates for 34 different projects, 3 of which were evaluated using alternative design scopes. This report was delivered to the RTA in October, 2005.

## Review of Cost Estimates; Setting of Ballot Amounts

The RTA TMC met several times during October, 2005 to develop the final project listing and ballot amounts. The second cost estimate became the basis for the ballot amounts ultimately set, but not before some refinement of the estimates occurred. These refinements included:

- A review of soft costs that resulted in a reduction of soft costs
- Refinements in project scope
- Rounding of funding amounts
- Updated cost estimates from outside sources
- Added projects

The most significant, universal revision was applied to all projects based the TMC's assessment that the soft costs (mobilization, design and construction management, which were based upon a percentage of the construction costs) were over stated. Soft costs had historically been a relatively consistent percentage of construction cost; however, increases in construction commodities just before the cost estimate had fueled inflation in construction costs, but not in the professional services that drove the soft costs. As a result, the RTA TMC approved a 10% reduction in the soft cost component of the cost estimates.

Some project scope changes were also implemented to bring the project list into alignment with the available funds. These included:

- Limiting Barazza/Aviation Parkway, Palo Verde to I-10 to \$20 million for design and right of way (RTA #20).
- Deleting the I-10 interchange improvements from the Houghton Road project (RTA #32).
- Limiting the Harrison Road improvements to a new Pantano Wash bridge (RTA #31).
- Limiting improvements on Irvington Road to the area between the Santa Cruz River and the east side of I-10 (RTA #22).
- Developing Wilmot Road with limited, fair-weather improvements (RTA #33).
- Replacing a grade separated railroad crossing with an at-grade crossing for Sunset Road (RTA #8).
- Reducing the scope of Broadway Blvd., Camino Seco-Houghton, RTA #29 and 22<sup>nd</sup> St., Camino Seco-Houghton, RTA #30 from 6 lanes to 4 lanes. The funding for these projects was reduced by 1/3

Also, subsequent to the development of the second cost estimate, more detailed plans were prepared for the Twin Peaks interchange project. This increased the project ballot amount (RTA #3).

As a final project addition, the I-19 Frontage Road (Continental Rd. to Canoa Rd.) was added to the ballot due to a shortfall in the funding for this project nearing design completion. This project became RTA #35.

Finally, the TMC recognized that the aggregate amount of funding proposed exceeded the funds projected to be available. The committee voted unanimously to apply an across the board 2 percent reduction to all proposed ballot amounts and to recommend approval of the proposed slate of projects and funding amounts.

The RTA TMC and CAC jointly met to finalize the project list and ballot amount on October 24, 2005. The CAC made a number of amendments to the TMC recommended slate of projects and ballot amounts. The final recommendation was passed unanimously, with one abstention.

### Other Observations

As attachments to this report, a number of spreadsheets are provided. The first relates the original URS cost estimates to the final ballot amounts presented to the voters. The majority of the projects have ballot amounts which range from 91% to 95% of the original estimate. This range in values is largely due to the amount of right of way expenditure expected (the soft cost reduction was not applied to right of way). Projects with ballot amounts not falling within this range have special conditions which were described in previous paragraphs.

It also worthy of note that the original URS cost estimates included utility relocation costs. The utility relocation costs were based upon minor adjustments of water and sewer facilities, and in many cases the removal of power poles in favor of underground electrical service. It has never been the policy of the RTA to fund utility relocations, except where the utility had prior rights (in an easement, superior to the road right of way). Railroad crossing costs were also included in the utility estimate. If the cost estimates were revised to eliminate the disallowed utility relocation costs, the ballot amount for the majority of the projects range from 92% - 102% of the revised estimate.

Researching the history of the RTA cost estimate has uncovered some errors made during the process of setting the ballot amounts and unforeseen conditions have also become apparent as design has progressed. In one of the final budget trimming measures by the RTA TMC, the ballot amounts for the Broadway Blvd., Camino Seco-Houghton (RTA #29) and 22<sup>nd</sup> St., Camino Seco-Houghton (RTA #30) were reduced based upon a reduction in scope from 6 lanes to 4 lanes. While the original HDR cost estimate was based upon a 6 lane configuration for these roads, the final URS estimate was based upon a 4 lane configuration. These 2 projects were subsequently underfunded.

Unforeseen conditions have resulted in marked increases in the current costs projected for the Kolb Road Extension and Silverbell Road projects. In the case of Kolb Road, the lateral extent of the Vincent Mullins Landfill was underestimated in the 2005 cost estimate. Current plans require expensive mitigation of the landfill impacts on the roadway, which have resulted in more than doubling the estimated cost of this project. Federal funds have been programmed to cover the funding gap, and this project is proceeding to construction. The other project with a project cost increase as a result of unforeseen conditions is Silverbell Road. The original cost estimate identified \$622,000 in environmental mitigation costs; the current estimate is for up to \$12 million in archeological mitigation. To-date, \$3 million in additional regional funds have been added to the project funding, with more likely to be programmed in future years.

## Implementation Experience

The cost experience of the jurisdictions engaged in delivering projects has been mixed. Five projects have been completed in their entirety: Camino de Mañana (RTA #2), Twin Peaks Interchange (RTA #3), La Cholla Blvd., River to Ruthrauff (RTA #10), Tanque Verde Rd. (RTA #27) and I-19 Frontage Rd. (RTA #35).

Camino de Mañana was dramatically expanded in scope, widening the roadway to 4 lanes and constructing water infrastructure extensions with the project. The Town of Marana funded the costs over and above the ballot amount.

The Twin Peaks interchange was ultimately delivered for approximately \$83 million; however it included optional water infrastructure and developer improvements. In advance of the project bid, additional federal funds were programmed for this project, so in spite of the project costing \$7 million more than the ballot amount; \$14 million of RTA funds were released.

The La Cholla project cost slightly more than the RTA estimate, due largely to a decision to purchase residential properties fronting the project. This additional cost was borne by Pima County.

Tanque Verde Road, in spite of high soft costs, is estimated to release \$2 million in RTA funds.

The I-19 Frontage Rd. project was one of the last projects bid prior to the drop in construction costs. This project was funded from a variety of sources, with the RTA funds a minor component. No cost estimate was prepared by the RTA, however the cost identified by ballot was \$11.9 million; the final project cost exceeded \$17 million. The RTA contribution was capped at \$3.92 million

## Conclusion

The record of the setting of the ballot amounts is clear. The RTA Administrative Code documents the determination that soft costs were believed to be overstated, and accordingly the ballot amounts were slightly reduced from the estimated amounts. The cost estimates and ballot amounts were presented to and deliberated upon by the Technical/Management Committee and confirmed by the Citizens Advisory Committee and RTA Board. The ballot amounts were set considering the scope of the projects in the plan, the costs estimated by the consultants while also being aware of the expected revenues which were projected to be available for the slate of projects.

The process used to develop the ballot amounts for the projects presented to the voters in the RTA Plan was more extensive and transparent than any previous effort in this region.

## **Recommendation:**

This is for information only.

**Attachments:**

Description of Cost Estimate from the RTA Administrative Code  
Comparison between URS Cost Estimate and Ballot Amount  
Comparison between Estimate and Ballot Amount (High ROW corridors)  
Estimated Utility Relocation Costs  
Comparison between Estimate (less exclusions) and Ballot Amount  
Minutes from RTA TMC meeting of Oct. 12, 2005  
Minutes from RTA TMC meeting of Oct. 19, 2005  
Summary of RTA Citizen's Advisory Committee Recommendations of Oct. 24, 2005

Except from the RTA Administrative Code:

## **V. Project Cost Estimates and How They Were Developed**

Cost estimates for the RTA Plan were started early in the development phase of the plan itself. Efforts were made to identify current cost information for projects being administered by RTA member agencies. These up-to-date experiences helped provide a realistic look at current trends in construction material and service costs as well as providing current costs on operational programs such as transit service. Pima Association of Governments hired two separate professional engineering consultants to compile preliminary and final planning cost estimates for all roadway projects.

### Preparation of the Estimates

PAG hired the firm of HDR Engineering Inc. to prepare initial costs for the RTA Plan in order to provide cost information to RTA committees developing the plan. When available, initial project estimates were taken from the 2025 Long Range Plan. The project estimates in the long range plan were then scrutinized to determine the level of estimation, the time of the estimate and the scope of the project. The estimates from the long range plan were only used as a benchmark for comparative purposes. HDR developed cost estimates using five categories of costs for each project – Planning/Studies, Design, Construction, Right-of-way, and Operations. Project details were developed with input from RTA committees along with significant input from jurisdictional transportation agency representatives. This input helped identify roadway features that impacted the final cost estimate, such as bridges, drainage needs and traffic signals. Right-of-way estimates were made at the initial stage using assessor information to determine market values in relation to right-of-way required for each roadway.

All project cost figures at this stage used industry standards based upon the Army Corps of Engineers' "Civil Works Construction Cost Index System," which includes quarterly cost indices for the past 25 years and cost projections for the next 20 years. The estimates for the first phase were used by the RTA committees to help determine costs vs. the benefits on a project to project level.

The final planning cost estimates for roadway projects built upon the development of credible and accurate pricing established as part of the initial estimates. For development of the final cost estimates for roadway projects, PAG hired URS Corp. URS staff included local transportation engineers, financial agents and a representative who had extensive experience with the cost estimating and project administration of the ½-cent sales tax transportation program implemented in Maricopa County. The final planning project cost estimates were developed by building upon previous work done for the RTA in May 2005 that included preparation of the planning level project design concepts, descriptions and cost estimates. The cost estimates for potential projects were updated and/or refined to reflect the present day construction marketplace in Pima County.

Research was conducted by interviewing local and state agency representatives as well as construction industry representatives in order to determine the cause of the recent trend of cost increases seen in competitive project bidding. Local and state agency representatives also provided bid tabulations of recent projects, which were used to establish unit costs that represent the current bidding climate. The construction industry representatives provided their perspective and indicated that the cost increases are

related to increased demand for key materials including cement, steel, asphalt and aggregates. Additionally, recent fuel cost increases have affected the cost of delivering materials to construction sites as well as earthwork tasks.

URS's research also included obtaining all previous reports and studies that have been completed for potential PAG RTA projects. In a few cases some design work had been completed that proved useful in compiling the updated cost estimates.

#### Final Planning Cost Estimate Approach

Each project concept was laid out on CADD to include the features and number of lanes described in the "Key Corridors" document dated July 7, 2005, that was produced for public review and comment. Quantities were generated for pavement, bridges, box culverts, walls, curb & gutter, sidewalks, utilities, traffic elements, removals, etc. and applied to the present day estimated unit costs to calculate subtotals for all items. A 10% allowance for mobilization and a 15% construction contingency item were added to compute the total estimated construction cost. Additional costs including: 15% for construction management, 15% for planning and engineering and 1% for public art were calculated based on the construction cost total. Environmental mitigation costs were estimated on a project specific basis based on the project's jurisdictional requirements.

Right-of-way costs were based on the estimated area of property acquisition requirements determined from the project layout. Unit costs were applied by Pima County and City of Tucson staff for residential and commercial properties to compute the total cost of purchasing the estimated real estate required for each project. The total estimated cost for each project is the sum of the construction, construction management, planning and engineering, public art, environmental mitigation, and right-of-way estimated costs. An example of a project cost estimate can be found in Appendix K.

The Technical/Management Committee discussed the process in detail. Prior to the sharp increase in construction material the generally accepted percentages for construction management (15%), design (15%), construction contingency (15%) and mobilization (10%) were questioned. Although these were generally accepted percentages prior to the sharp increase in construction, these costs are not reliant on the significant increase in construction material. The cost estimation of construction on the projects utilized the latest cost of materials yet the previously accepted percentages for design and management needed to be reduced to reflect the significant increases in material costs. The TMC determined that 55% of the estimated construction costs were "soft" costs and through strong project management these costs could be decreased by 12%. Technical/Management Committee recommended to the Citizens Advisory Committee a combined reduction in "related construction cost" of 12 percent. The CAC accepted the recommendation as did the RTA Board.

## Comparison between URS Cost Estimate and Ballot Amount

RTA #	Project	URS Project Cost Estimate	Ballot Amount	%
1	Tangerine, I-10 to La Canada	\$81,002,610	\$74,215,000	92%
2	Camino de Manana	\$16,853,440	\$15,685,000	93%
3	Twin Peaks Road, Silverbell to I-10	\$69,653,430	\$76,422,000	110%
4	La Cholla, Tangerine to Magee	\$53,033,160	\$48,333,000	91%
5	Silverbell, Ina to Grant	\$61,955,610	\$57,053,000	92%
6	Railroad Overpass @ Ina Rd	\$59,422,700	\$54,383,000	92%
7	Magee, La Canada to Thornydale	\$36,541,230	\$33,270,000	91%
8	Sunset, Silverbell to River	\$24,825,320	\$22,764,000	92%
9	Railroad Overpass @ Ruthrauff Rd	\$64,440,190	\$59,364,000	92%
10	La Cholla, River to Ruthrauff Rd	\$16,276,170	\$14,760,000	91%
11	La Canada, River to Calle Concordia	\$45,720,300	\$41,731,000	91%
12	Magee, La Canada to Oracle Rd	\$10,498,020	\$9,600,000	91%
13	First Avenue, Orange Grove to Ina	\$7,978,400	\$7,256,000	91%
14	First Avenue, River to Grant	\$79,372,610	\$74,398,000	94%
15	Railroad Underpass @ Grant Rd.	\$40,557,440	\$37,701,000	93%
16	Downtown Links	\$93,112,860	\$84,674,000	91%
17	Broadway Blvd., Euclid to Country Club	\$74,760,600	\$71,347,000	95%
18	Grant Rd., Oracle to Swan	\$175,434,650	\$166,850,000	95%
19	22nd Street, I-10 to Tucson Blvd/Barraza	\$118,532,400	\$107,952,000	91%
20	Barazza/Aviation; Palo Verde to I-10	\$0	\$19,600,000	N/A
21	Valencia, Ajo to Mark	\$41,586,610	\$38,157,000	92%
22	Irvington, I-19 to Santa Cruz River	\$0	\$9,800,000	N/A
23	Valencia, I-19 to Alvernon	\$0	\$9,800,000	N/A
24	Valencia, Alvernon to Kolb	\$51,124,970	\$46,298,000	91%
25	Valencia, Kolb to Houghton	\$38,251,000	\$34,882,000	91%
26	Kolb Connection with Sabino Canyon	\$10,060,380	\$9,115,000	91%
27	Tanque Verde, Catalina to Houghton	\$14,106,300	\$12,833,000	91%
28	Speedway, Camino Seco to Houghton	\$18,813,400	\$17,127,000	91%
29	Broadway, Camino Seco to Houghton	\$16,086,800	\$9,571,000	59%
30	22nd Street, Camino Seco to Houghton	\$15,114,000	\$9,066,000	60%
31	Harrison, Golf Links to Irvington	\$0	\$6,158,000	N/A
32	Houghton, I-10 to Tanque Verde	\$197,505,300	\$160,642,000	81%
33	Wilmot, North of Sahuarita Rd	\$0	\$9,800,000	N/A
34	Sahuarita Rd, to Country Club	\$44,735,750	\$40,785,000	91%
35	Frontage Rd., I-19 Continental to Canoa	\$0	\$11,920,000	N/A
	Total	\$1,577,355,650	\$1,503,312,000	N/A

Projects 20,22, 23, 31, 33, & 35 were estimated using project scopes which were subsequently contracted, rendering their cost estimates invalid.

Project 32 included Interchange reconstruction and directional ramps which were deleted from the scope of the project. The fully loaded cost associated with these improvements exceeded \$40,000,000

### Comparison between Estimate and Ballot Amount (High ROW corridors)

RTA #	Project	URS Project Cost Estimate	Ballot Amount	%	ROW>10%
1	Tangerine, I-10 to La Canada	\$81,002,610	\$74,215,000	92%	
2	Camino de Manana	\$16,853,440	\$15,685,000	93%	17% ROW
3	Twin Peaks Road, Silverbell to I-10	\$69,653,430	\$76,422,000	110%	
4	La Cholla, Tangerine to Magee	\$53,033,160	\$48,333,000	91%	
5	Silverbell, Ina to Grant	\$61,955,610	\$57,053,000	92%	14% ROW
6	Railroad Overpass @ Ina Rd	\$59,422,700	\$54,383,000	92%	
7	Magee, La Canada to Thornydale	\$36,541,230	\$33,270,000	91%	
8	Sunset, Silverbell to River	\$24,825,320	\$22,764,000	92%	
9	Railroad Overpass @ Ruthrauff Rd	\$64,440,190	\$59,364,000	92%	21% ROW
10	La Cholla, River to Ruthrauff Rd	\$16,276,170	\$14,760,000	91%	
11	La Canada, River to Calle Concordia	\$45,720,300	\$41,731,000	91%	
12	Magee, La Canada to Oracle Rd	\$10,498,020	\$9,600,000	91%	
13	First Avenue, Orange Grove to Ina	\$7,978,400	\$7,256,000	91%	
14	First Avenue, River to Grant	\$79,372,610	\$74,398,000	94%	41% ROW
15	Railroad Underpass @ Grant Rd.	\$40,557,440	\$37,701,000	93%	21% ROW
16	Downtown Links	\$93,112,860	\$84,674,000	91%	
17	Broadway Blvd., Euclid to Country Club	\$74,760,600	\$71,347,000	95%	58% ROW
18	Grant Rd., Oracle to Swan	\$175,434,650	\$166,850,000	95%	60% ROW
19	22nd Street, I-10 to Tucson Blvd/Barraza	\$118,532,400	\$107,952,000	91%	13% ROW
20	Barazal/Aviation; Palo Verde to I-10	\$0	\$19,600,000	N/A	
21	Valencia, Ajo to Mark	\$41,586,610	\$38,157,000	92%	
22	Irvington, I-19 to Santa Cruz River	\$0	\$9,800,000	N/A	
23	Valencia, I-19 to Alvernon	\$0	\$9,800,000	N/A	
24	Valencia, Alvernon to Kolb	\$51,124,970	\$46,298,000	91%	
25	Valencia, Kolb to Houghton	\$38,251,000	\$34,882,000	91%	
26	Kolb Connection with Sabino Canyon	\$10,060,380	\$9,115,000	91%	
27	Tanque Verde, Catalina to Houghton	\$14,106,300	\$12,833,000	91%	
28	Speedway, Camino Seco to Houghton	\$18,813,400	\$17,127,000	91%	
29	Broadway, Camino Seco to Houghton	\$16,086,800	\$9,571,000	59%	
30	22nd Street, Camino Seco to Houghton	\$15,114,000	\$9,066,000	60%	
31	Harrison, Golf Links to Irvington	\$0	\$6,158,000	N/A	
32	Houghton, I-10 to Tanque Verde	\$197,505,300	\$160,642,000	81%	
33	Wilmot, North of Sahuarita Rd	\$0	\$9,800,000	N/A	
34	Sahuarita Rd. to Country Club	\$44,735,750	\$40,785,000	91%	
35	Frontage Rd., I-19 Continental to Canoa	\$0	\$11,920,000	N/A	
		<b>Average</b>	<b>\$11,920,000</b>	<b>91%</b>	<b>of estimated costs</b>

## Utility Cost Estimates - URS 10/2005

RTA #	Project	Utility Relocation Cost	Utility Cost, %	Notes
1	Tangerine, I-10 to La Canada	\$2,964,500	4%	adjust/relocate all utilities, underground electric; <b>Prior rights for overhead electric; at grade RR crossing</b>
2	Camino de Manana	\$500,000	3%	no estimate/scope detailed
3	Twin Peaks Road, Silverbell to I-10	\$1,000,000	1%	<b>Prior rights for CMD; est. from DCR</b>
4	La Cholla, Tangerine to Magee	\$1,373,000	3%	adjust/relocate all utilities, underground electric
5	Silverbell, Ina to Grant	\$2,528,000	4%	adjust/relocate all utilities, underground electric
6	Railroad Overpass @ Ina Rd	\$490,000	1%	adjust/relocate all utilities
7	Magee, La Canada to Thornydale	\$1,995,000	5%	adjust/relocate all utilities, underground electric
8	Sunset, Silverbell to River	\$604,000	2%	minor adjustments, <b>RR crossing (\$350,000)</b>
9	Railroad Overpass @ Ruthrauff Rd	\$630,000	1%	adjust/relocate all utilities
10	La Cholla, River to Ruthrauff Rd	\$480,500	3%	adjust/relocate all utilities, underground electric
11	La Canada, River to Calle Concordia	\$4,101,750	9%	adjust/relocate all utilities, underground electric, <b>Prior Rights for WAPA (\$2.7M)</b>
12	Magee, La Canada to Oracle Rd	\$642,000	6%	adjust/relocate all utilities, underground electric
13	First Avenue, Orange Grove to Ina	\$771,000	10%	adjust/relocate all utilities, underground electric
14	First Avenue, River to Grant	\$4,911,000	6%	adjust/relocate all utilities, underground electric
15	Railroad Underpass @ Grant Rd.	\$290,000	1%	adjust/relocate all utilities
16	Downtown Links	\$2,240,000	2%	adjust/relocate all utilities
17	Broadway Blvd., Euclid to Country Club	\$3,030,000	4%	adjust/relocate all utilities, underground electric
18	Grant Rd., Oracle to Swan	\$7,920,000	5%	adjust/relocate all utilities, underground electric
19	22nd Street, I-10 to Tucson Blvd/Barraza	\$4,125,000	3%	adjust/relocate all utilities, underground electric
20	Barazzal/Aviation; Palo Verde to I-10	\$0	N/A	
21	Valencia, Ajo to Mark	\$1,408,500	3%	adjust/relocate all utilities, underground electric
22	Irvington, I-19 to Santa Cruz River	\$0	N/A	
23	Valencia, I-19 to Alvernon	\$0	N/A	
24	Valencia, Alvernon to Kolb	\$1,133,750	2%	adjust/relocate all utilities, underground electric
25	Valencia, Kolb to Houghton	\$3,926,250	10%	adjust/relocate all utilities, underground electric
26	Kolb Connection with Sabino Canyon	\$50,000	0%	adjust/relocate all utilities
27	Tanque Verde, Catalina to Houghton	\$1,320,750	9%	adjust/relocate all utilities, underground electric
28	Speedway, Camino Seco to Houghton	\$1,847,250	10%	adjust/relocate all utilities, underground electric
29	Broadway, Camino Seco to Houghton	\$1,808,250	11%	adjust/relocate all utilities, underground electric
30	22nd Street, Camino Seco to Houghton	\$1,706,250	11%	adjust/relocate all utilities, underground electric
31	Harrison, Golf Links to Irvington	\$0	N/A	
32	Houghton, I-10 to Tanque Verde	\$4,610,775	2%	adjust/relocate all utilities, underground electric
33	Wilmot, North of Sahuarita Rd		N/A	
34	Sahuarita Rd, to Country Club	\$2,100,000	5%	adjust/relocate all utilities, underground electric
35	Frontage Rd., I-19 Continental to Canoa	\$0	N/A	
	<b>Total</b>	<b>\$60,507,525</b>	<b>4%</b>	

### Comparison between Estimate (less excluded items) and Ballot Amount

RTA #	Project	URS Project Cost Estimate	Ballot Amount	Excluded Utilities	Other Excluded items	Revised Estimate (less exclusions)	Ballot amount, % of revised estimate
1	Tangerine, I-10 to La Canada	\$81,002,610	\$74,215,000	\$0		\$81,002,610	92%
2	Camino de Manana	\$16,853,440	\$15,685,000	\$500,000		\$16,353,440	96%
3	Twin Peaks Road, Silverbell to I-10	\$69,653,430	\$76,422,000	\$0		\$69,653,430	110%
4	La Cholla, Tangerine to Magee	\$53,033,160	\$48,333,000	\$1,373,000		\$51,660,160	94%
5	Silverbell, Ina to Grant	\$61,955,610	\$57,053,000	\$2,528,000		\$59,427,610	96%
6	Railroad Overpass @ Ina Rd	\$59,422,700	\$54,383,000	\$490,000		\$58,932,700	92%
7	Magee, La Canada to Thornydale	\$36,541,230	\$33,270,000	\$1,995,000		\$34,546,230	96%
8	Sunset, Silverbell to River	\$24,825,320	\$22,764,000	\$254,000		\$24,571,320	93%
9	Railroad Overpass @ Ruthrauff Rd	\$64,440,190	\$59,364,000	\$630,000		\$63,810,190	93%
10	La Cholla, River to Ruthrauff Rd	\$16,276,170	\$14,760,000	\$480,500		\$15,795,670	93%
11	La Canada, River to Calle Concordia	\$45,720,300	\$41,731,000	\$1,401,750		\$44,318,550	94%
12	Magee, La Canada to Oracle Rd	\$10,498,020	\$9,600,000	\$642,000		\$9,856,020	97%
13	First Avenue, Orange Grove to Ina	\$7,978,400	\$7,256,000	\$771,000		\$7,207,400	101%
14	First Avenue, River to Grant	\$79,372,610	\$74,398,000	\$4,911,000		\$74,461,610	100%
15	Railroad Underpass @ Grant Rd.	\$40,557,440	\$37,701,000	\$290,000		\$40,267,440	94%
16	Downtown Links	\$93,112,860	\$84,674,000	\$2,240,000		\$90,872,860	93%
17	Broadway Blvd., Euclid to Country Club	\$74,760,600	\$71,347,000	\$3,030,000		\$71,730,600	99%
18	Grant Rd., Oracle to Swan	\$175,434,650	\$166,850,000	\$7,920,000		\$167,514,650	100%
19	22nd Street, I-10 to Tucson Blvd/Barraza	\$118,532,400	\$107,952,000	\$4,125,000		\$114,407,400	94%
20	Barazza/Aviation; Palo Verde to I-10	\$0	\$19,600,000	\$0		\$0	N/A
21	Valencia, Ajo to Mark	\$41,586,610	\$38,157,000	\$1,408,500		\$40,178,110	95%
22	Irvington, I-19 to Santa Cruz River	\$0	\$9,800,000	\$0		\$0	N/A
23	Valencia, I-19 to Alvernon	\$0	\$9,800,000	\$0		\$0	N/A
24	Valencia, Alvernon to Kolb	\$51,124,970	\$46,298,000	\$1,133,750		\$49,991,220	93%
25	Valencia, Kolb to Houghton	\$38,251,000	\$34,882,000	\$3,926,250		\$34,324,750	102%
26	Kolb Connection with Sabino Canyon	\$10,060,380	\$9,115,000	\$50,000		\$10,010,380	91%
27	Tanque Verde, Catalina to Houghton	\$14,106,300	\$12,833,000	\$1,320,750		\$12,785,550	100%
28	Speedway, Camino Seco to Houghton	\$18,813,400	\$17,127,000	\$1,847,250		\$16,966,150	101%
29	Broadway, Camino Seco to Houghton	\$16,086,800	\$9,571,000	\$1,808,250		\$14,278,550	67%
30	22nd Street, Camino Seco to Houghton	\$15,114,000	\$9,066,000	\$1,706,250		\$13,407,750	68%
31	Harrison, Golf Links to Irvington	\$0	\$6,158,000	\$0		\$0	N/A
32	Houghton, I-10 to Tanque Verde	\$197,505,300	\$160,642,000	\$4,610,775	\$20,000,000	\$172,894,525	93%
33	Wilmot, North of Sahuarita Rd	\$0	\$9,800,000	\$0		\$0	N/A
34	Sahuarita Rd, to Country Club	\$44,735,750	\$40,785,000	\$2,100,000		\$42,635,750	96%
35	Frontage Rd., I-19 Continental to Canoa	\$0	\$11,920,000	\$0		\$0	N/A
						<b>Average</b>	<b>100%</b>

**Technical/Management Committee Meeting  
Minutes of October 12, 2005**

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Andy Gunning, Director of Planning

**ATTENDANCE**

**MEMBERS IN ATTENDANCE**

Chuck Huckelberry	Jim Glock	Michael Reuwsaat
Carl Russell	Benny Young	George Caria
John Bernal	Marshall Worden	Paul Cella
Roger Caldwell	Jim Schoen	Martin Roush for Jim Stahle
Barbara Becker	Fred Stevens	Walker Smith for Fernando Castro
Frank Thomson	Farhad Moghimi	

**PAG RTA STAFF**

Gary Hayes	Andy Gunning	Cherie Campbell
Paul Casertano	Manny Rosas	Tim Ahrens
Rosie Soto	Tom Fisher	Jeff Hildebrand
Sheila Storm		

**GUESTS**

Daniel Hochuli	Paul Mackey	Kurt Weinrich
Sheila Bowen	Rick Myers	Curt Lueck
John Litteer	F. Ann Rodriguez	Gary Oaks
Bill Dorgan	Tom Bush	Ramon Gaandere
Lorraine Hernandez	Priscilla Cornelio	Ryan Matchett
Jim DeGroot	Martin Willett	Dewey Brown
Katie Dusenberry		

1. Call to order

Chairman Chuck Huckelberry called the meeting to order at 11:02 a.m.

2. Approval of minutes dated Oct. 5, 2005

Carl Russell moved to approve the minutes. Marshall Worden seconded. The motion passed unanimously.

3. Report from the RTA Citizens Advisory Committee

Rick Myers of the CAC reported that the CAC meeting, Oct. 11, was long and productive. The CAC came up with a list of lower priority projects to be eliminated or scaled back, resulting in an estimated \$300 million savings. The list is for the RTA committee to review and is only the personal view of the CAC. The Oct. 24 joint CAC TMC meeting will be a good opportunity for feedback.

4. Review and refinement of draft RTA plan elements

Per direction of the Chair, Andy Gunning started by reviewing the handouts. The proposed schedule of projects (with graphic) shows the phasing of projects and in what period of time they will occur over the 20-year process. The candidate project cuts list discussed by the sub-committee shows projects with a proposed action and an estimated savings. The roadway projects map, modeling data tables showing the number of different categories of data, volume to capacity for existing corridors, average volume-to-capacity measure and vehicle miles of travel.

Tim Ahrens continued with reviewing the project schedule (3 pages) showing the initial project list, the projects in red have either been changed or eliminated, totaling almost \$300 million. The second page is the pay-as-you-go scenario, with \$298 million in reductions and including \$154.7 million of additional federal aid revenues. The third page is the bonding scenario, \$350 million in bonding paying back \$445 million in principal and interest with \$298 million in reductions and \$154.7 million additional revenues and ending with a \$64 million balance. The finance summary matrix handout provides options for the pay-as-you-go with and without the 25 percent regional funds to supplement the RTA, and options of bonding with and without the 25 percent regional funds to supplement the RTA.

Frank Thomson questioned if there was data to show how much of an impact there will be on roadways spending money on transit in the first few years versus spending the money on a roadway. How much will the ridership increase?

George Caria responded that with the improvement of service frequencies there will be an increase in ridership. However, the buses and facilities have to be up before the service frequencies.

## 5. Cost Estimates

Chair Huckelberry mentioned making cuts from the 56 percent that was added to construction. Taking 5 percent off mobilization, 5 percent off engineering and planning and apply it to construction, you get roughly \$100 million.

Jim Glock stated that he is not comfortable doing that. It is better to have a high estimate than low. On larger projects it would be legitimate to bring it down to 5 percent.

## 6. Revenues

Mike Reuwsaat added that he would like to see a commitment from local entities to cover some of that basis to provide a little more balance.

John Bernal questioned if URS used unit prices drawn from local projects, because projects in this scale aren't done very often. Will all the percentages hold up with \$20 million and \$30 million projects?

Chair Huckelberry confirmed that it was a good idea to look at the \$154.7 million of the 25 percent regional money to know how it would be spread out so we know whose money we are dealing with.

Roger Caldwell mentioned that there hasn't been any conclusion about bonding. In order for people to see results from election, we will have to bond.

Chair Huckelberry stated that in his opinion, bonding is necessary, a component to get started. When people go out to vote they will expect to see something happen.

## 7. Project implementation and phasing schedule

Marshall Worden commented that the list of project cuts from the CAC is not based on technical formulation. When the TMC decided to put Grant rd. in the plan there was not a technical foundation to exclude it, and the TMC did not want to be guided by political determination.

Rick Myers responded that the CAC was waiting to hear from the TMC to see if there was an acceptable way to re-scope that project, but the CAC is not trying to be politically driven.

Chair Huckelberry questioned if anyone was working on de-scoping Grant.

Jim Glock responded yes, from a cost estimation standpoint, but the traffic engineers have not started on the systems performance.

8. Project evaluation and selection criteria

Chair Huckelberry stated the changes or cuts he would make to the plan.

Chair Huckelberry asked PAG staff to distribute a survey to each of the TMC members to select what projects they would like to see changed or eliminated.

Barbara Becker questioned what exactly was happening with Grant?

Jim Glock responded that the City's traffic engineering staff is going to compare how a 6-lane section performs vs. a section where just improvements are done to the intersection. The results will tell us what the travel time delay reduction will be, one vs. the other. A cost estimate will also be done for intersection improvements as opposed to the cost estimate we have now for the 6-lane section.

Rick Myers added that in order to have a successful meeting on Oct. 24, by the end of the TMC meeting Oct. 19, a list of recommendations should be given to PAG to review before the CAC TMC meeting next week.

Gary Hayes suggested that if anyone has any questions or needs technical back up, please call ahead of time, so for next week's meeting we can have some closure.

John Bernal suggested that we continue to put dates on tables so there is no confusion.

9. Future RTA meetings and agenda items

The next TMC meeting is scheduled for Oct. 19, 2005, and the joint CAC TMC meeting is scheduled for Oct. 24. Agenda items will include:

Results from project evaluation survey

10. Call to the audience

Ann Rodriguez of the CAC addressed the committee with her concerns to include right hand turn money.

Anthony K. King addressed the committee regarding Grant rd.

Sanda Schuldmann addressed the committee opposing the Snyder rd. bridge.

11. Adjournment

The meeting was adjourned at 12:45 p.m.



**Technical/Management Committee Meeting  
Minutes of October 19, 2005**

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Andy Gunning, Director of Planning

**ATTENDANCE**

**MEMBERS IN ATTENDANCE**

Chuck Huckelberry	Jim Glock	Michael Reuwsaat
Carl Russell	Benny Young	George Caria
Marshall Worden	Paul Cella	Kurt Weinrich for John Bernal
Roger Caldwell	Jim Schoen	Jim Stahle
Barbara Becker	Fred Stevens	Fernando Castro
Frank Thomson	Farhad Moghimi	

**PAG RTA STAFF**

Gary Hayes	Cherie Campbell	Paul Casertano
Andy Gunning	Tom Fisher	Rosie Soto
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Sheila Storm	Tom Cooney	

**GUESTS**

Daniel Hochuli	Paul Mackey	Walker Smith
Sheila Bowen	Joe Herrick	Curt Lueck
John Litteer	F. Ann Rodriguez	Gary Oaks
Bill Dorgan	Tom Bush	Ramon Gaanderse
Lorraine Hernandez	Priscilla Cornelio	Ryan Matchett
Jim DeGroot	Martin Willett	Dewey Brown
Katie Dusenberry	Casey Townsend	Malena Barajas
Lori Lustig	Byron Howard	Amber Moore
Michael Toney	M.J. Yee	

1. Call to order

Chairman Chuck Huckelberry called the meeting to order at 11:05 a.m.

2. Approval of minutes dated Sept. 12, 2005

Farhad Moghimi moved to approve the minutes. Jim Stahle seconded. The motion passed unanimously.

3. Report from the RTA Citizens Advisory Committee

Gary Hayes reported that the CAC has not met since the last TMC meeting and is prepared for the joint CAC TMC session, Monday, Oct. 24.

4. Project evaluation and ranking results

Andy Gunning reviewed the RTA TMC project survey results (3-page) handout, which lists each of the projects and the responses of whether it should be eliminated or down-scoped. The projects that received no responses indicate that the project should remain as planned. Twenty of 22 TMC members responded. Andy reviewed the projects that received the most responses (4 or more). There was also feedback regarding whether or not to use regional funds to augment the RTA plan, and the general consensus was to avoid using regional funds.

Tim Ahrens reviewed the RTA CAC project survey results (4-page) handout. Eleven of 35 CAC members responded. Tim reviewed the projects that received the most responses (4 or more).

Chair Huckelberry questioned how the TMC will portray the recommendations to the CAC. Will it be broad in scope or more specific as to which projects/programs to eliminate or reduce?

Frank Thomson commented that a technical committee should provide a technical recommendation.

5. Twenty-year comprehensive Regional Transportation Plan for the RTA

Chair Huckelberry proposed two revenue enhancements, one being to either use impact fees for transit or increase farebox.

Si Schorr questioned what the fares would be for the express routes.

Jim Glock stated that the express route to Raytheon is a \$2 per trip fare, which is the only route with a \$2 fare, all other routes are \$1. We are \$50 million in farebox. Is increasing it

by 50 percent a fair assumption to make? You lose ridership when you increase fares, but you gain more revenue than ridership.

Chair Huckelberry confirmed by consensus that farebox will be cut in half to \$12.5 million.

Frank Thomson questioned how the impact fees can technically be utilized in this plan.

Si Schorr mentioned that the state has been looking at deleting Barraza Aviation Parkway as a state highway.

Kurt Weinrich added that the Barraza Aviation Parkway is one of the best candidates for future state designation as a state highway because of its impact and benefit to the regional network for the state highway system.

Chair Huckelberry stated that by consensus the Barraza Aviation Parkway east stays on the map, but the RTA money is removed, leaving enough money for an alignment study and right-of-way.

Jim Stahle suggested that leaving some money to pave Wilmot would make a vast improvement to the north/south movement in that particular area.

Benny Young commented that Wilmot is a good candidate for impact fees, and should use impact fees to build an interim 2-lane facility.

Chair Huckelberry confirmed by consensus that \$10 million would remain to pave Wilmot Road.

Chair Huckelberry confirmed by consensus:

- 22<sup>nd</sup> street, Camino Seco to Houghton (reduced from six lanes to a four-lane facility)
- Railroad underpass at Speedway Boulevard (eliminate)
- Tanque Verde Rd., Catalina Highway to Houghton Rd. (leave in)
- Advanced land acquisition (eliminate)
- Houghton Rd. Dawn to I-10 (eliminate)

The high-capacity modern streetcar was discussed, and in particular the \$23 million incremental cost added to the original amount. Twelve members were in favor of eliminating the \$23 million, and 6 were opposed. Although it's not by consensus of all TMC members, the committee recommends the \$23 million be eliminated.

Jim Glock reviewed his handout showing Grant Rd. with intersection levels of service, which show a 2-lane with intersection improvements and a 3-lane with intersection improvements. Jim explained the delay difference there is between the 4-lane and 6-lane. The costs for a 4-lane improvement to Grant would be \$60 million and a 6-lane improvement would cost about \$170 million.

Benny Young suggested that this projects needs to be treated realistically. If you only put enough money in to do intersections you are going to have flooded intersections. This project and scope needs to be left as is.

Chair Huckelberry confirmed by consensus that Grant Rd. stays in.

Chair Huckelberry confirmed by consensus:

- Valencia Rd., I-19 to Alvernon (eliminate)
- Irvington, west of I-19 (eliminate)

Chair Huckelberry suggested perhaps modifying Van Tran and Handi Car.

Jim Glock commented that the transit sub-committee has already reduced the paratransit by \$30 million and is already as conservative as it can be.

Benny added that the paratransit service should not be analyzed since it is a civil rights issue under the law. It would be risky to reduce it anymore.

Chair Huckelberry confirmed that the Van Tran and Handi Car by consensus will be left alone.

Chair Huckelberry confirmed by consensus:

- Park-and-Ride (reduce by \$3 million)
- Circulator to Ajo (new project add \$1 million)
- Harrison Rd., Golf Links to Irvington (leave in as bridge only option)
- Kolb Rd. connection with Sabino Canyon (leave in)

Chet Davis expressed his concern of our efforts in reaching out to the public asking what projects they want to see, yet during a meeting we eliminate them all.

Chair Huckelberry confirmed by consensus:

- At-grade railroad safety improvements (add \$5 million)
- Critical Wildlife Linkages (add \$15 million)
- Business assistance (leave as \$5 million)
- Broadway, Camino Seco to Houghton (downscope from 6 lanes to 4)
- Houghton Rd., I-10 to Tanque Verde (reduce by \$40 million)

Chair Huckelberry stated that by consensus, this is the plan with modifications that will be submitted to the CAC as the TMC recommendations.

Jim Glock stated for the record his concern with the cost estimates.

Benny Young also stated for the record that there were some objections with the \$23 million for transit, therefore there was not a full consensus.

Gary Hayes mentioned that CAC/TMC joint meeting is Monday, Oct. 24, 5:00 p.m. at Randolph.

6. Project implementation and phasing schedule

No discussion.

7. Future RTA meetings and agenda items

The next CAC TMC joint meeting is scheduled for Oct. 24, 2005.

8. Call to the audience

Michael Toney addressed the committee with his concerns of the University of Arizona's science center bridge.

9. Adjournment

The meeting was adjourned at 1:25 p.m.

## RTA Citizen's Advisory Committee (CAC) Summary of Recommendations

Larry Hecker moved to accept the RTA Technical/Management Committee recommendations for the RTA Plan. Seconded by John Bremond. Motion, with the following amendments, passed unanimously with one abstention.

- Restore \$20 million to Houghton Rd. project to cover right-of-way for the Houghton Rd./Interstate 10 traffic interchange from "Working Capital" category. Motion by Bob Patrick. Seconded by John Bremond. Passed unanimously.
- Add \$5 million to the "Small Business" category. Motion by Lea Marquez-Peterson. Seconded by Tom McGovern. Passed unanimously.
- Restore \$23 million to the "High Capacity Modern Streetcar System" to cover added costs associated with new cost estimates. Motion by John Bremond. Seconded by Roy Schoonover. Motion passed (24 to 1).
- Add \$5 million to the "Transportation-related Critical Landscape Linkages" category. Motion by Carolyn Campbell. Seconded by Martin Browning. Motion passed (24 to 1)
- Restore \$10 million to the "Valencia, I-19 to Alvernon (controlled access)" project. Motion by Walker Smith. Seconded by Richard Fimbres. Motion passed unanimously.
- Add \$10 million to the "Irvington, West of I-10" project. Motion by Yolanda Herrera. Seconded by Richard Fimbres. Motion passed (24 to 1).
- Rename the "Impact Fee" revenue generation category to "Jurisdictional Contribution" and add \$18 million in revenue to be generated. Motion by John Bremond. Seconded by Larry Hecker. Motion passed unanimously.

Summary of final motion by CAC:

\$73 million in project and program costs added to original TMC recommendation.  
\$18 million in new revenues added.

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\$55 million in new expenses over the TMC recommendation.

## RTA CAC/TMC Joint Meeting on Recommendations to RTA Board

The RTA Technical Management Committee and Citizens' Advisory Committee jointly recommended the CAC approved plan be forwarded to the RTA Board for consideration. Recommendation received unanimous support from both committees with one abstention.