

# Comparison of Personnel-Hours by Task

The table below presents a side-by-side comparison of the staffing matrix from the proposal and the actual hours log. Additions made to the schedule during the project are highlighted in red. Tasks removed from the schedule and words removed from the names of tasks during the project are shown in strikethrough.

Task	Proposal					Actual					Difference
	SE	E	PM	DR	Total	SE	E	PM	DR	Total	
<b>Task 1.0: Research and Regulatory Considerations</b>	<b>10</b>	<b>14</b>	<b>16</b>	<b>12</b>	<b>52</b>	<b>9</b>	<b>21</b>	<b>15</b>	<b>12</b>	<b>57</b>	<b>5</b>
Task 1.1: Review Past Solutions	5	6	8	4	23	3	4	2	5	14	-9
Task 1.2: Regulatory Considerations						3	6	6	5	20	-9
Task 1.2.1: Federal Highway Administration (FHWA)	5	8	8	8	29	1	7	3	0	11	11
Task 1.2.2 ADOT Roadway Design Guidelines						2	4	4	2	12	12
<b>Task 2.0: Site Investigation</b>	<b>7</b>	<b>13</b>	<b>22</b>	<b>31</b>	<b>73</b>	<b>11.5</b>	<b>18</b>	<b>14</b>	<b>12</b>	<b>55.5</b>	<b>-17.5</b>
Task 2.1: Surveying and Soil Data	1	2	2	4	9	2	3	2	1	8	-1
Task 2.2: Existing Geometry	2	4	4	8	18	1	6	2.5	4	13.5	-4.5
Task 2.3: Identify Contributing Intersections	1	3	2	3	9	4	3	3	2	12	3
Task 2.4: Lane Configurations	0	0	2	4	6	0.5	2	2	2.5	7	1
Task 2.5: Site Restrictions	2	2	6	6	16	1	2.5	3	2	8.5	-7.5
Task 2.6: Investigate Proposed Developments	1	2	6	6	15	3	1.5	1.5	0.5	6.5	-8.5
<b>Task 3.0: Collection of Traffic Data from ADOT</b>	<b>8</b>	<b>19</b>	<b>25</b>	<b>18</b>	<b>70</b>	<b>5</b>	<b>12.5</b>	<b>8.5</b>	<b>6.5</b>	<b>32.5</b>	<b>-37.5</b>
Task 3.1: Existing Plan Set	3	6	12	12	33	3	4	2	4	13	-20
Task 3.2: Classification of Vehicles	2	4	4	2	12	0.5	2.5	1.5	1	5.5	-6.5
Task 3.3: Five-Year Crash Data	1	4	4	0	9	0.5	2	4	1.5	8	-1
Task 3.4: Signal Timing and Phasing	2	5	5	4	16	1	4	1	0	6	-10
<b>Task 4.0: Traffic Counts</b>	<b>0.5</b>	<b>13</b>	<b>13</b>	<b>10</b>	<b>36.5</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>14</b>	<b>-22.5</b>
Task 4.1: Field Safety Plan	0	4	4	4	12	--	--	--	--	--	--
Task 4.2: Peak Hour Volumes	0	6	6	6	18	4	7	1	2	14	-4
Task 4.3: Upload Data	0.5	3	3	0	6.5	--	--	--	--	--	--
<b>Task 5.0: Traffic Analysis</b>	<b>23.5</b>	<b>47.5</b>	<b>47.5</b>	<b>47.5</b>	<b>166</b>	<b>12</b>	<b>22.5</b>	<b>25.5</b>	<b>38.5</b>	<b>98.5</b>	<b>-67.5</b>
Task 5.1: Base Model Creation and Calibration	14	28	28	28	98	8	15	18	25	66	-32
Task 5.2: VISSIM Analysis of Base Conditions	5	10.5	10.5	10.5	36.5	3	5	5	10	23	-13.5
Task 5.3: 20-Year Projection	4.5	9	9	9	31.5	1	2.5	2.5	3.5	9.5	-22
<b>Task 6.0: Alternatives and Evaluation of Impacts</b>	<b>41</b>	<b>66</b>	<b>55</b>	<b>71</b>	<b>233</b>	<b>23</b>	<b>34.5</b>	<b>39</b>	<b>47.5</b>	<b>144</b>	<b>-89</b>
Task 6.1: Scoring System <del>Development</del>						6	5.5	3	5	19.5	-28.5
Task 6.1.1: Design Criteria	8	16	12	12	48	--	--	--	--	--	--
Task 6.1.2: Construction Considerations						--	--	--	--	--	--
Task 6.1.3: Evaluation of Impacts						--	--	--	--	--	--
Task 6.2: <del>Generate and Analyze Alternatives in VISSIM</del>	15	20	15	15	65	6.5	11	12	13.5	43	-22
Task 6.3: Scoring, Selection of Final Alternative	2	6	4	4	16	4	6	9	6	25	9
Task 6.4: Preliminary and Final Design Plan Sets	16	24	24	40	104	4	8	10	19	41	-63
Task 6.5: <del>Final Design Impacts Analysis</del>	--	--	--	--	--	2.5	4	5	4	15.5	15.5
<b>Task 7.0: Project Deliverables</b>	<b>19</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>121</b>	<b>27</b>	<b>33.5</b>	<b>37</b>	<b>46.5</b>	<b>144</b>	<b>23</b>
Task 7.1: 30% Report and Presentation	3	6	6	6	21	7.5	3	7	9	26.5	5.5
Task 7.2: 60% Report and Presentation	3	6	6	6	21	5	11	5.5	9	30.5	9.5
Task 7.3: 90% Report	3	6	6	6	21	4	7	8	11	30	9
Task 7.4: Final Report and Presentation	--	--	--	--	--	--	--	--	--	0	--
Task 7.4.1: Final Report	3	6	6	6	21	2	4	7	6	19	-2
Task 7.4.2: UGRADS Presentation	4	4	4	4	16	3	4	4	5	16	0
Task 7.5: Website	--	--	--	--	--	--	--	--	--	0	--
Task 7.5.1: 90% Website	2	4	4	4	14	3.5	2.5	3.5	4.5	14	0
Task 7.5.2: Final Website	1	2	2	2	7	2	2	2	2	8	1
<b>Task 8.0: Project Management</b>	<b>34</b>	<b>34</b>	<b>44</b>	<b>24</b>	<b>136</b>	<b>23.5</b>	<b>23</b>	<b>25</b>	<b>24</b>	<b>95.5</b>	<b>-40.5</b>
Task 8.1: Resource Management	5	5	10	0	20	5	5	5	5	20	0
Task 8.2: Client and TA Meetings	8	8	8	8	32	4	4	4	4	16	-16
Task 8.3: GI Meetings	8	8	8	8	32	3.5	3	4	4	14.5	-17.5
Task 8.4: Team Meetings	8	8	8	8	32	7	7	8	7	29	-3
Task 8.5: Schedule Management	5	5	10	0	20	4	4	4	4	16	-4
<b>Total of All Tasks</b>	<b>143</b>	<b>241</b>	<b>257</b>	<b>248</b>	<b>887.5</b>	<b>115</b>	<b>172</b>	<b>165</b>	<b>189</b>	<b>641</b>	<b>-246.5</b>

## Comparison of Engineering Costs

A comparison of personnel, travel, and supply costs between the estimates from the proposal and actual expenses incurred during the project is presented in the table below:

	Classification	Rate per Hour	Proposal		Actual	
			Hours	Cost	Hours	Cost
<b>1.0 Personnel</b>	Senior Engineer (SE)	\$152.59	143.0	\$21,820	115.0	\$17,548
	Engineer (E)	\$105.98	240.5	\$25,488	172.0	\$18,229
	Project Manager (PM)	\$89.62	256.5	\$22,988	165.0	\$14,787
	Drafter (DR)	\$56.32	247.5	\$13,939	189.0	\$10,644
	<b>Total personnel</b>			<b>\$84,235</b>		<b>\$61,208</b>
	Classification	Rate per Mile	Miles	Cost	Miles	Cost
<b>2.0 Travel</b>	Travel to site					
	3 vehicles, 2 round trips, 130 miles roundtrip, @ \$0.445/mile	\$0.45	780	\$347	0	\$0
	<b>Total travel</b>			<b>\$347</b>		<b>\$0</b>
	Classification	Rate per Day	Days	Cost	Days	Cost
<b>3.0 Supplies</b>	Traffic Lab access					
	20 days @ \$100/day	\$100.00	20	\$2,000	15	\$1,500
	<b>Total supplies</b>			<b>\$2,000</b>		<b>\$1,500</b>
<b>4.0 Total Cost of Engineering Services</b>				<b>\$86,582</b>		<b>\$62,708</b>