ATTACHMENT J40

Example Completion of Schedule B-2

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Example Completion of Schedule B-2

The following two examples are provided to demonstrate two approaches to completing the required bid schedules in the request for proposal (RFP). The bid schedules covered in these examples are Schedule B-2, *Utility Service Payment by the Government,* Schedule L-1, *Calculation of the Fixed Monthly Charge,* Schedule L-2, *Renewals and Replacements Schedule,* and Schedule L-3, *Initial Capital Upgrades.*

> **The following examples are for illustrative purposes only. Any resemblance to conditions or costs at any Department of Defense Installation is strictly coincidental. Similarly, any resemblance of the hypothetical bidders in this example to any existing entities is also strictly coincidental. Offerors are advised not to place any importance on values used or assumptions made in these examples.**

J40.1 Background for Examples

The Government is considering privatization of a wastewater collection system (CLIN 0004 from the RFP) at one of its installations (*Raptor AFB*). It plans to complete the privatization in year 2003. The Government has issued an RFP that, among other things, requires Offerors to complete Schedule B-2 presented in Section B of the RFP and Schedules L-1, L-2, and L-3 presented in section L of the RFP. A U.S. Treasury Bond rate of 5% is assumed for this example. The Government's inventory of the wastewater system is shown in **Table J40-1**.

TABLE J40-1
Example Wastewater System Inventory
Utility Privatization, Raptor AFB

Component	Size	Quantity	Unit	Approximate Year of Installation
Concrete Pipe	12-in.	2,000	lf	1945
	24-in.	1,000	lf	1945
PVC Pipe	24-in.	4,000	lf	1985
	12-in.	8,000	lf	1985
	4-in.	3,000	lf	1985
Manhole		10	ea	1945
		30	ea	1985
Lift Station #1		1	ea	1970
Lift Station #2		1	ea	1995

Table Notes:

In addition to the inventory, the Government indicated that there are no existing meters and no new meters need to be installed. The Government-recognized system deficiencies are shown in **Table J40-2**.

TABLE J40-2
Example Government Recognized System Deficiencies
Utility Privatization, Raptor AFB

System Component	Description of Deficiency	Type
Collection System	The system has excessive infiltration and inflow (I&I)	Capital Upgrade
Lift Station #2	Lift Station #2 is inappropriately sized and causes overflows of sewage into the street	Capital Upgrade

Table Notes:
Deficiencies may be categorized as capital upgrades, renewal and replacements and/or operation and maintenance.

J40.2 Example 1

J40.2.1 Background for Example 1

An interested party (*Party X*) reviews the RFP and decides to submit a proposal for CLIN 0004. In preparing its proposal, *Party X* participates in the site visits and reviews information in the bidders' library. *Party X* evaluates the system using the information and data collected and determines the following:

- The fair market value (FMV) of the utility system is $500,000.
  - *Party X* proposes to amortize the monthly credit for payment of the purchase price over the first 15 years of the service contract at a 6.0 percent annual interest rate (1% over the U.S. Treasury Bond rate of 5% assumed for this example).
  - *Party X* identifies excess capacity in the system that can potentially be used for customers other than the Government. This excess capacity is determined to be worth 15 percent of the system FMV; therefore, *Party X* proposes to recover $425,000 (85 percent of the purchase price), amortized over the first 15 years of the service contract at a 6.0 percent annual interest rate.
- The fixed monthly charge to operate and maintain the utility system is $3,772.53. This is based on *Party X's* assessment of the requirements in the RFP, their evaluation of the system, and their experience with wastewater systems.
  - *Party X* proposes a $2,500.00 monthly system operation and maintenance (O&M) cost. This amount includes all costs for operations, maintenance, repair, and associated administration and general costs.

  - *Party X* proposes a $1,272.53 monthly system renewal and replacement (R&R) cost. This amount includes all costs for continuing R&R as plant and equipment wear out with time. *Party X* prepares a 50-year schedule for R&R in accordance with Section L.9.6.2 of the RFP and establishes the monthly cost by amortizing the total R&R cost over the life of the contract at a 6.0 percent annual interest rate.
  - *Party X* is a public entity and is not required to pay any U.S. federal taxes.
- There are a several deficiencies in the system that need to be remedied.
  - 1,000 linear feet of the 1940s-era collection system piping needs to be replaced because it is beyond its useful life, requires excessive maintenance, and has unacceptable infiltration and inflow (I&I). The other 1940s-era components were determined to be old, but functioning acceptably and not in need of immediate replacement. The cost to replace the 1,000 linear feet of collection piping was determined to be $35,000. The replacement was incorporated into the first year of privatization as a planned renewal and replacement (R&R) cost. Even though this project may be a deficiency, *Party X* determined that it was actually the result of the system reaching the end of its useful life and therefore addressed it as a R&R project by including it in the first year of R&R shown in Schedule L-2.
  - Cross connections between the Installation's wastewater system and stormwater system were determined to be the cause of the I&I problem. The cost to remedy the cross connections was determined to be $125,000 and included as an initial capital upgrade project in Schedule L-3. *Party X* also determines a program to periodically televise and test the system for I&I needs to be implemented. *Party X* determines the annual cost for this program will be $2,000 per year, which is included in the $2,500 monthly operating cost.
  - The inappropriately sized lift station was evaluated and determined to be relatively new (built in 1995), in good condition, but inappropriately sized for the facilities served. The cost to replace the lift station was determined to be $50,000 and was incorporated into the first year of privatization as a planned R&R cost. Even though this project may be a deficiency, *Party X* accounted for it under R&R because it is a replacement and impacts the overall schedule of replacements.
  - *Party X* determines that the cost to remedy the deficiency included in Schedule L-3 can be amortized over 15 years at a 6.0 percent annual interest rate.
- There will be a $45,000 transition cost associated with taking over responsibility of the system. This will include all costs incurred between contract award and contract start.
- *Party X* proposes a $500/hour monthly credit for delayed response times.

J40.2.2 Example 1 Schedule B-2

Party X prepares Schedule B-2 based on the data presented in Schedule L-1, *Calculation of the Fixed Monthly Charge,* and Schedule L-2, *Renewals and Replacements Schedule*. Projects shown in Schedule L-3, *Initial Capital Upgrades*, are not included in the totals shown in Schedule B-2, but are added to the monthly charge in accordance with the amortization schedule for each project listed. The completed example Schedule B-2 for *Party X* is presented in **Exhibit J40-1**.

EXHIBIT J40-1

Example 1 SCHEDULE B-2

Utility Service Payment by the Government

				Raptor AFB
0004 [a]	**Wastewater System**			
Sub-CLINs	**SUPPLIES/SERVICES**	**Unit**	**Monthly Service Charge**	**Total Annual Amount**
AA	Purchase Price. [c] $500,000.00. LESS Recoverable Portion of the Purchase Price. $425,000.00. The Monthly Credit as Payment for Purchase Price and Recoverable Portion of the Purchase Price will be amortized over the first __180___months of service at an interest rate that is (specify either of the following) _1.0 percentage points above or ____ percentage points below the annual interest rate on U.S. Treasury Bonds in effect at the time of award. [d]	LS	$(632.89)	$(7,594.68)
AB	Fixed Monthly Charge to Operate and Maintain the Utility System and for Continuing Renewals and Replacements for Electric, Natural Gas, Water, or Wastewater Utility Systems. [b]	LS	$3,772.53	$45,270.36
AC	Initial Capital Upgrades Initial Capital Upgrades will be handled in accordance with Section H.10.1 and Schedule L-3.		N/A	N/A
AD	Transition Period (Contract Award through Contract Start) Contractor proposed days _____. Fixed charge.	LS	$45,000	$45,000

[a] CLIN number to be filled in by the Offeror. CLIN numbers are shown in Schedule B-1, *Utility System Contract Line Item Numbers*.
[b] The annual amount is calculated by extending the monthly service charge by 12 months. Price changes for Sub-CLIN AB will be determined IAW B.6, *Type of Contract-Fixed Price with Prospective Price Redetermination*, and G.3, *Fixed Monthly Charge Adjustment*.
[c] The *Purchase Price*, *Recoverable Portion of the Purchase Price*, interest rate and amortization period are proposed by the Offeror. The *Recoverable Portion of the Purchase Price* cannot exceed the *Purchase Price*.
[d] The interest rate on U.S. Treasury Bonds (30-years) is as established in the most recent 30-year bond issue prior to the time of award,
and published in the Federal Register. (http://www.federalreserve.gov/releases/H15/update/)
[e] For proposal purposes, the Offeror shall propose only a dollar per hour credit to the Government. During Contract performance the hours per month will be determined for each month of service and the total monthly credit will be calculated and credited against the monthly invoice.

J40.2.3 Example 1 Supporting Calculations

The following sections describe the calculations used by *Party X* to determine the values for Sub-CLINs AA, AB, and AC in Schedule B-2. Although these calculations demonstrate one logical way to complete the schedule, other logical approaches could be taken.

J40.2.3.1 Example 1 Sub-CLIN AA Supporting Calculations

The Monthly Credit as Payment for Purchase Price (Sub-CLIN AA) is calculated by first determining the monthly credit as payment for purchase price and then adding to it the amount to be recovered as payment for the purchase price.

- *Party X* proposes to purchase the wastewater system for $500,000. This amount will be amortized over 15 years (180 months) at a 6.0 percent annual interest rate. Therefore, the monthly credit for the purchase price is calculated based on $500,000 amortized over 180 months at an interest rate of 0.50 percent per month.
- *Party X* proposes to recover 85 percent ($425,000) of its purchase price, amortized over 15 years (180 months) at a 6.0 percent annual interest rate. Therefore, the Recoverable Portion of the Purchase Price is calculated based on $425,000 amortized over 180 months at an interest rate of 0.50 percent per month.
- Subtracting the recoverable portion of the purchase price from the monthly credit as payment for purchase price yields the monthly credit of $632.89 ($3,586.39 – $4,219.28). The monthly credit is multiplied by 12 to calculate the $7,594.68 total annual credit.

Calculation	Results
(*PV*) Proposed Purchase Price =>	$500,000.00
(*n*) # Months to Amortize Purchase Price =>	180
Annual Interest Rate =>	6.00%
(*i*) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(*A*) Sub-CLIN AB, Monthly Credit as Payment for Purchase Price [a] =>	$4,219.28
(*PV*) Recoverable Portion of Purchase Price = 500000 x 0.85 =>	$425,000.00
(*n*) # Months to Amortize Purchase Price =>	180
Annual Interest Rate =>	6.00%
(*i*) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(*A*) Monthly Recoverable Portion of Purchase Price [a] =>	$3,586.39
Sub-CLIN AA, Monthly Credit as Payment or Purchase Price = 4219.28 - 3586.39 =>	($632.89)
Total Annual Amount = 12 x -632.89 =>	($7,594.68)

Table Notes:
[a] Monthly Credit as Payment for Purchase Price is calculated based on uniform series of payments.
$A = PV \times [\, i \times (1 + i)^n \,] / [\, (1 + i)^n - 1 \,]$

J40.2.3.2 Example 1 Sub-CLIN AB Supporting Calculations

The Fixed Monthly Charge (Sub-CLIN AB) is comprised of two components – O&M and R&R. As indicated above, *Party X* determined the fixed monthly charge for O&M to be $2,500. Since Party X is a public entity, it pays no U.S. Federal taxes. The monthly charge for R&R is developed using the example Schedule L-2 developed by *Party X* shown in **Table J40-3**.

TABLE J40-3
Example 1 Schedule L-2, Renewals and Replacements Schedule
Utility Privatization, Raptor AFB

Year	Dollar Amount (Constant $) [a]	Description of Renewal or Replacement	Present Value [b]	Residual Value (Constant $) [c]
2003	$50,000.00	Replace Lift Station #2 structure, controls, electrical, and mechanical equip.	$47,169.81	$0.00
2003	$35,000.00	Replace 1,000 lf of concrete pipe (1945-era) with PVC pipe	$33,018.87	$0.00
2003	$20,000.00	Replace 10 manholes (1945-era)	$18,867.92	$0.00
2003	$10,000.00	Lift station #1 controls, electrical and mechanical equip.	$9,433.96	$0.00
2004 – 2007	$0.00	No planned renewal or replacement	$0.00	$0.00
2008	$70,000.00	Replace 2,000 lf of concrete pipe (1945-era) with PVC pipe	$49,347.24	$7,000.00
2009 – 2019	$0.00	No planned renewal or replacement	$0.00	$0.00
2020	$40,000.00	Replace Lift Station #1 structure	$14,013.75	$13,600.00
2020	$10,000.00	Replace Lift Station #1 controls, electrical, and mechanical equip.	$3,503.44	$0.00
2021 – 2022	$0.00	No planned renewal or replacement	$0.00	$0.00
2023	$10,000.00	Lift Station #2 controls, electrical and mechanical equip.	$2,941.55	$0.00
2024 – 2032	$0.00	No planned renewal or replacement	$0.00	$0.00
2033	$150,000.00	Replace 5,000 lf of PVC pipe (1985-era) with PVC pipe	$24,638.23	$90,000.00
2033	$20,000.00	Replace 10 manholes (1985-era)	$3,285.10	$12,000.00
2034	$150,000.00	Replace 5,000 lf of PVC pipe (1985-era) with PVC pipe	$23,243.61	$93,000.00
2034	$20,000.00	Replace 10 manholes (1985-era)	$3,099.15	$12,400.00
2035	$150,000.00	Replace 5,000 lf of PVC pipe (1985-era) with PVC pipe	$21,927.93	$96,000.00
2035	$20,000.00	Replace 10 manholes (1985-era)	$2,923.72	$12,800.00
2036 – 2039	$0.00	No planned renewal or replacement	$0.00	$0.00

TABLE J40-3
Example 1 Schedule L-2, Renewals and Replacements Schedule
Utility Privatization, Raptor AFB

Year	Dollar Amount (Constant $) [a]	Description of Renewal or Replacement	Present Value [b]	Residual Value (Constant $) [c]
2040	$10,000.00	Lift Station #1 controls, electrical and mechanical equip.	$1,092.39	$3,500.00
2041 – 2042	$0.00	No planned renewal or replacement	$0.00	$0.00
2043	$10,000.00	Lift Station #2 controls, electrical and mechanical equip.	$917.19	$5,000.00
2044 – 2053	$0.00	No planned renewal or replacement	$0.00	$0.00
Totals	$775,000.00		$259,423.86	$345,300.00
			Present Value of Cumulative Residual Value [c]	$17,684.69

Table Notes:
[a] Year 2003 dollars were used in this example. In accordance with B.5.2.1, the 2003 dollars were based on the expected price levels during 2003 and 2004.
[b] The Present Value is calculated using the following formula: PV = R&R dollar value x [$1 / (1 + i)^n$]
[c] The Residual Value is calculated based on the dollar amount of the R&R project, the year in which the project is planned, and the expected remaining life of the component at the end of the contract term. The Residual value reflects the value of the investment, in constant year dollars, at the end of the contract term.

As shown in **Table J40-3**, *Party X* proposes to spend $775,000.00 (in 2003 constant-year dollars) on planned R&R over the 50-year contract term. The cumulative present value of R&R investments, using a 6.0 percent annual interest rate, is $259,423.86. The cumulative residual value at the end of the contract term is $345,300.00. The present value of the cumulative residual value is $17,684.69. Therefore, the present value of *Party X's* total investment in R&R during the contract term is $241,739.17 ($259,423.86 - $17,684.69).[2]

Party X will amortize their investment using a 6.0 percent annual interest rate. Therefore, the R&R component of the fixed monthly charge is calculated based on a $241,739.17 investment, amortized over 600 months at an interest rate of 0.50 percent per month:

Calculation	Result
Present Value of Proposed R&R Cost (from L-2) =>	$259,423.86
Present Value of Cumulative Residual Value due to R&R Investments =>	$17,684.69
(PV) Present Value of Total Investment in R&R = 259,423.86 - 17,684.69 =>	$241,739.17
(n) # Months to Recover R&R Cost =>	600
Annual Interest Rate =>	6.00%
(i) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(A) Monthly R&R Charge [a] =>	$1,272.53

[2] The present value of the cumulative residual value is subtracted from the present value of R&R investments to account for the value in the system at the end of the contract term.

Calculation	Result

Table Notes:
[a] Monthly R&R Charge calculated based on uniform series of payments. $A = PV \times [\, i \times (1 + i)^n \,] / [\, (1 + i)^n - 1 \,]$

The Total Fixed Monthly Charge (Sub-CLIN AB) proposed by *Party X* is calculated as demonstrated in the example Schedule L-1 shown in **Table J40-4**.

TABLE J40-4
Example 1 Schedule L-1, Calculation of the Fixed Monthly Charge
Utility Privatization, Raptor AFB

Component	Monthly Charge
1. Operations and Maintenance (O&M)	$2,500.00
2. Renewals and Replacements	$1,272.53
Total Fixed Monthly Charge (to be entered in sub-CLIN AB)	$3,772.53
3. U.S. Federal taxes included in the Total Fixed Monthly Charge	$0.00

Table Notes:

J40.2.3.3 Example 1 Sub-CLIN AC Supporting Calculations

Initial capital upgrades are documented in Schedule L-3. Additions include capital projects to remedy deficiencies. *Party X* identified three deficiencies in the wastewater system. Two of the deficiencies, replacing 1,000 lf of 1945-era collection piping and replacing lift station #2, were included in the first year of planned R&R. A portion of the other deficiency was accounted for in the O&M component of the fixed monthly charge. Remedying the cross-connections in the system was not included as R&R and it must be included in the capital improvement projects in Schedule L-3.

- *Party X* proposes a $125,000.00 capital improvement project to remedy the cross connections in the system. This project is scheduled to be completed in the 12th month of privatization and amortized over the next 60 months (months 13 through 73) at a 6.0 percent annual interest rate. Therefore, the addition to the fixed monthly charge is based on a $125,000.00 investment, amortized over 60 months at a constant interest rate of 0.50 percent per month:

Calculation	Result
(*PV*) Project Cost =>	$ 125,000.00
(*n*) # Months to Amortize Project Cost =>	60
Annual Interest Rate =>	6.00%
(*i*) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(*A*) Monthly Charge [a] =>	$2,416.60

Table Notes:
[a] Monthly Charge calculated based on uniform series of payments. $A = PV \times [\, i \times (1 + i)^n \,] / [\, (1 + i)^n - 1 \,]$

The example Schedule L-3 developed for Initial Capital Upgrades (Sub-CLIN AC) is shown in **Table J40-5**.

TABLE J40-5
Example 1 Schedule L-3, Initial Capital Upgrades
Utility Privatization, Raptor AFB

Component Name	Component Cost (Constant $) [a]	Interest Rate	First Full Month Project Will Be in Service	# of Months to Amortize Component	Monthly Charge (Constant $) [a]	US Federal Taxes Included in Monthly Charge (Constant $) [a]
1. Initial Capital Upgrades						
Project 1 - Remedy Cross Connections	$125,000.00	6.0	12	60	$2,416.60	$0.00
Project 2						
TOTAL Capital Upgrades	$125,000.00					
2. Contribution in Aid of Construction (CIAC) Taxes		N/A	N/A	N/A	N/A	N/A

Table Notes:
[a] Year 2003 dollars were used in this example

J40.3 Example 2

J40.3.1 Background for Example 2

An interested party (*Party Y*) reviews the RFP and decides to submit a proposal for CLIN 0004. In preparing its proposal, *Party Y* participates in the site visits and reviews information in the bidders' library. *Party Y* conducts a system evaluation using the information and data collected and determines the following:

- The FMV of the utility system is $500,000.
  - *Party Y* proposes to amortize the monthly credit for payment of the purchase price over the first 25 years of the service contract at a 6.0 percent annual interest rate.
  - *Party Y* does not identify any value in the system (such as excess capacity that can be used by customers other than the Government); therefore, *Party Y* proposes to recover the entire purchase price, amortized over the first 25 years of the service contract at a 6.0 percent annual interest rate.

- The fixed monthly charge to operate and maintain the utility system is $4,839.99. This is based on *Party Y's* assessment of the requirements in the RFP, their evaluation of the system, and their experience with wastewater systems.
  - *Party Y* proposes a $1,500 monthly system O&M cost. This cost is based on *Party Y's* decision to completely replace the system within the first three years of the service contract. The monthly system operating cost includes all costs for operations, maintenance, repair, and administration and general costs.
  - *Party Y* proposes a $3,339.99 monthly system R&R cost. This cost is based on *Party Y's* decision to completely replace the wastewater system within the first three years of the service contract. This replacement will result in a new system that will require minimal R&R throughout the 50-year term of the contract. *Party Y* prepares a 50-year schedule for R&R in accordance with Section L.9.6.2 of the RFP. At the end of the 50-year contract, all of the R&R investments will have been capitalized and the system almost completely depreciated. This would result in the next cycle of major system upgrades occurring at the same time the 50-year contract is to be renewed.
  - *Party Y* is not a public entity and pays U.S. federal taxes. Party Y pays taxes at a rate that is approximately 30 percent of its total revenue.
- There are several deficiencies in the system that need to be remedied:
  - All of the 1940s-era piping and infrastructure had generally failed and was not performing in accordance with system standards. This deficiency will be addressed through the system-wide replacement included in *Party Y's* proposed R&R schedule.
  - In many areas throughout the installation, the 1980s-era system components showed premature signs of failure. The available maintenance documentation was insufficient to determine the exact condition of collection piping and manholes. Additionally, it did not appear that preventative maintenance was being performed regularly on the system. *Party Y* concludes that system-wide I&I contributed to the premature failure of system components. This deficiency will be addressed through the system-wide replacement included in *Party Y's* proposed R&R schedule.
  - The system deficiencies identified by the Government are related. The overflows at the lift station, which was determined to be in good operating condition, only occurred during rainfall events when I&I in the system was highest. These deficiencies will be addressed through the system-wide replacement included in *Party Y's* proposed R&R schedule.
- There will be a $60,000 transition cost associated with taking over responsibility of the system. This will include all costs incurred between contract award and contract start.
- *Party Y* proposes a $500/hour monthly credit for delayed response times.

J40.3.2 Example 2 Schedule B-2

Party Y prepares Schedule B-2 based on the data presented in Schedule L-1, *Calculation of the Fixed Monthly Charge,* and Schedule L-2, *Renewals and Replacements Schedule*. Projects shown in Schedule L-3, Initial Capital Upgrades, are not included in the totals shown in Schedule

B-2, but are added to the monthly charge in accordance with the amortization schedule for each project listed. The completed example Schedule B-2 for *Party Y* is presented in **Exhibit J40-2**.

EXHIBIT J40-1

Example 2 SCHEDULE B-2

Utility Service Payment by the Government

				Raptor AFB
0004 [a]	**Wastewater System**			
Sub-CLINs	**SUPPLIES/SERVICES**	**Unit**	**Monthly Service Charge**	**Total Annual Amount**
AA	Purchase Price. [c] $500,000.00. LESS Recoverable Portion of the Purchase Price. $500,000.00. The Monthly Credit as Payment for Purchase Price and Recoverable Portion of the Purchase Price will be amortized over the first __300___months of service at an interest rate that is (specify either of the following) _6.0 percentage points above or ____ percentage points below the annual interest rate on U.S. Treasury Bonds in effect at the time of award. [d]	LS	$(0.00)	$(0.00)
AB	Fixed Monthly Charge to Operate and Maintain the Utility System and for Continuing Renewals and Replacements for Electric, Natural Gas, Water, or Wastewater Utility Systems. [b]	LS	$4,839.99	$58,079.88
AC	Initial Capital Upgrades Initial Capital Upgrades will be handled in accordance with Section H.10.1 and Schedule L-3.		N/A	N/A
AD	Transition Period (Contract Award through Contract Start) Contractor proposed days _____. Fixed charge.	LS	$60,000	$60,000

[a] CLIN number to be filled in by the Offeror. CLIN numbers are shown in Schedule B-1, *Utility System Contract Line Item Numbers*.
[b] The annual amount is calculated by extending the monthly service charge by 12 months. Price changes for Sub-CLIN AB will be determined IAW B.6, *Type of Contract-Fixed Price with Prospective Price Redetermination*, and G.3, *Fixed Monthly Charge Adjustment*.
[c] The *Purchase Price*, *Recoverable Portion of the Purchase Price*, interest rate and amortization period are proposed by the Offeror. The *Recoverable Portion of the Purchase Price* cannot exceed the *Purchase Price*.
[d] The interest rate on U.S. Treasury Bonds (30-years) is as established in the most recent 30-year bond issue prior to the time of award,
and published in the Federal Register. (http://www.federalreserve.gov/releases/H15/update/)
[e] For proposal purposes, the Offeror shall propose only a dollar per hour credit to the Government. During Contract performance the hours per month will be determined for each month of service and the total monthly credit will be calculated and credited against the monthly invoice.

J40.3.3 Example 2 Supporting Calculations

The following sections describe the calculations used by *Party Y* to determine the values for Sub-CLINs AA, AB, and AC in Schedule B-2. Although these calculations demonstrate one logical way to complete the schedule, other logical approaches could be taken.

J40.3.3.1 Example 2 Sub-CLIN AA Supporting Calculations

The Monthly Credit as Payment for Purchase Price (Sub-CLIN AA) is calculated by first determining the monthly credit as payment for purchase price and then adding to it the amount to be recovered as payment for the purchase price.

- *Party Y* proposes to purchase the wastewater system for $500,000. This amount will be amortized over 25 years (300 months) at a 6.0 percent annual interest rate. Therefore, the monthly credit for the purchase price is calculated based on $500,000 amortized over 300 months at a constant interest rate of 0.50 percent per month.
- *Party Y* proposes to recover 100 percent ($500,000) of its purchase price, amortized over 25 years (300 months) at a 6.0 percent annual interest rate. Therefore, the Recoverable Portion of the Purchase Price is calculated based on $500,000 amortized over 300 months at a constant interest rate of 0.50 percent per month.
- Subtracting the recoverable portion of the purchase price from the monthly credit as payment for purchase price yields the monthly credit of $0.00 ($3,221.51 – $3,221.51). The resulting annual credit is also $0.00.

Calculation	Results
(*PV*) Proposed Purchase Price =>	$500,000.00
(*n*) # Months to Amortize Purchase Price =>	300
Annual Interest Rate =>	6.00%
(*i*) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(*A*) Sub-CLIN AB, Monthly Credit as Payment for Purchase Price [a] =>	$3,221.51
(*PV*) Recoverable Portion of Purchase Price = 500000 x 0.85 =>	$500,000.00
(*n*) # Months to Amortize Purchase Price =>	300
Annual Interest Rate =>	6.00%
(*i*) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(*A*) Monthly Recoverable Portion of Purchase Price [a] =>	$3,221.51
Sub-CLIN AA, Monthly Credit as Payment or Purchase Price = 3221.51 - 3221.51 =>	$0.00
Total Annual Amount = 12 x 0=>	$0.00

Table Notes:
[a] Monthly Credit as Payment for Purchase Price is calculated based on uniform series of payments.
$A = PV \times [\, i \times (1 + i)^n \,] / [\, (1 + i)^n - 1 \,]$

J40.3.3.2 Example 2 Sub-CLIN AB Supporting Calculations

The Fixed Monthly Charge (Sub-CLIN AB) is comprised of two components – O&M and R&R. As indicated above, *Party Y* determined the fixed monthly charge for O&M to be $1,500. The monthly charge for R&R is developed using the example Schedule L-2 developed by *Party Y* shown in **Table J40-6**.

TABLE J40-6
Example 2 Schedule L-2, Renewals and Replacements Schedule
Utility Privatization, Raptor AFB

Year [a]	Dollar Amount (Constant $) [b]	Description of Renewal or Replacement	Present Value (Constant $) [c]	Residual Value (Constant $) [d]
2003	$180,000.00	Replace 6,000 lf of wastewater pipe with PVC pipe	$169,811.32	$0.00
2003	$36,000.00	Replace 20 manholes	$33,962.26	$0.00
2003	$36,000.00	Replace Lift Station #1 structure	$33,962.26	$0.00
2003	$9,000.00	Replace Lift Station #1 controls, electrical and mechanical equip.	$8,490.57	$0.00
2003	$36,000.00	Replace Lift Station #2 structure	$33,962.26	$0.00
2003	$9,000.00	Replace Lift Station #2 controls, electrical and mechanical equip.	$8,490.57	$0.00
2004	$180,000.00	Replace 6,000 lf of wastewater pipe with PVC pipe	$160,199.36	$3,600.00
2004	$18,000.00	Replace 10 manholes	$16,019.94	$360.00
2005	$180,000.00	Replace 6,000 lf of wastewater pipe with PVC pipe	$151,131.47	$7,200.00
2005	$18,000.00	Replace 10 manholes	$15,113.15	$720.00
2006 – 2027	$0.00	No planned renewal or replacement	$0.00	$0.00
2028	$9,000.00	Replace Lift Station #1 controls, electrical and mechanical equip.	$1,978.29	$0.00
2028	$9,000.00	Replace Lift Station #2 controls, electrical and mechanical equip.	$1,978.29	$0.00
2029 – 2053	$0.00	No planned renewal or replacement	$0.00	$0.00
Totals	$720,000.00		$635,099.74	$11,880.00
			Present Value of Cumulative Residual Value [c]	$608.44

TABLE J40-6
Example 2 Schedule L-2, Renewals and Replacements Schedule
Utility Privatization, Raptor AFB

Year [a]	Dollar Amount (Constant $) [b]	Description of Renewal or Replacement	Present Value (Constant $) [c]	Residual Value (Constant $) [d]

Table Notes:
[a] Only the years with planned R&R are included in this example Schedule L-2.
[b] Year 2003 dollars were used in this example. In accordance with B.5.2.1, the 2003 dollars were based on the expected price levels during 2003 and 2004.
[c] The Present Value is calculated using the following formula: PV = R&R dollar value x [1 / (1 + i)^n]
[d] The Residual Value is calculated based on the dollar amount of the R&R project, the year in which the project is planned, and the expected remaining life of the component at the end of the contract term. The Residual value reflects the value of the investment, in constant year dollars, at the end of the contract term.

As shown in **Table J40-6**, *Party Y* proposes to spend $720,000 (in 2003 constant-year dollars) on planned R&R over the 50-year contract term. The cumulative present value of R&R investments, using a 6.0 percent annual interest rate, is $635,099.74 . The cumulative residual value at the end of the contract term is $11,880.00. The present value of the cumulative residual value is $608.44. Therefore, the present value of *Party Y's* total investment in R&R during the contract term is $634,491.30 ($635,099.74 - $608.44).

Party Y will amortize their investment using a 6.0 percent annual interest rate. Therefore, the R&R component of the fixed monthly charge is calculated based on a $634,491.30 investment, amortized over 600 months at a constant interest rate of 0.50 percent per month:

Calculation	Result
Present Value of Proposed R&R Cost (from L-2) =>	$635,099.74
Present Value of Cumulative Residual Value due to R&R Investments =>	$608.44
(PV) Present Value of Total Investment in R&R = 635,099.74 - 608.44 =>	$634,491.30
(n) # Months to Recover R&R Cost =>	600
Annual Interest Rate =>	6.00%
(i) Monthly Interest Rate = 0.06 / 12 =>	0.50%
(A) Monthly R&R Charge [a] =>	$3,339.99

Table Notes:
[a] Monthly R&R Charge calculated based on uniform series of payments. $A = PV \times [i \times (1 + i)^n] / [(1 + i)^n - 1]$

The Total Fixed Monthly Charge proposed by *Party Y* is calculated as demonstrated in the example Schedule L-1 shown in **Table J40-7**. U.S. Federal taxes were calculated at 30 percent of the total fixed monthly charge.

TABLE J40-7
Example 2 Schedule L-1, Calculation of the Fixed Monthly Charge
Utility Privatization, Raptor AFB

Component	Monthly Charge
1. Operations and Maintenance (O&M)	$1,500.00
2. Renewals and Replacements	$3,339.99
Total Fixed Monthly Charge (to be entered in sub-CLIN AB)	$4,839.99
3. U.S. Federal Taxes included in the Total Fixed Monthly Charge	$1,452.00

J40.2.3.3 Example 2 Sub-CLIN AC Supporting Calculations

Initial capital upgrades are documented in Schedule L-3. Additions include capital projects to remedy deficiencies. *Party Y* identified several deficiencies in the wastewater system; however, they proposed to address the deficiencies by replacing the entire wastewater system as part of their R&R schedule. Therefore, no initial capital upgrade projects were identified.

The example Schedule L-3 developed for Initial Capital Upgrades (Sub-CLIN AC) is shown in **Table J40-8**.

TABLE J40-8
Example 2 Schedule L-3, Initial Capital Upgrades
Utility Privatization, Raptor AFB

Component Name	Component Cost (Constant $) [a]	Interest Rate	First Full Month Project Will Be in Service	# of Months to Amortize Component	Monthly Charge (Constant $) [a]	US Federal Taxes Included in Monthly Charge (Constant $) [a]
1. Initial Capital Upgrades						
Project 1						
Project 2						
TOTAL Capital Upgrades						
2. Contribution in Aid of Construction (CIAC) Taxes		N/A	N/A	N/A	N/A	N/A

Table Notes:
[a] Year 2003 dollars were used in this example