

METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI

**Project ID 10142910
Ludlow Run Sustainable Source Control
Contract 95x12762**

Progress Report for
Professional Services provided November 28, 2021 through December 26, 2021

Arcadis U.S., Inc.

At the request of the Metropolitan Sewer District of Greater Cincinnati, Arcadis worked on the following items as summarized below.

Task 1 Project Administration - Planning

- Performed project administration and resource management; communicated updates to MSDGC project manager.

Task 2 Data Review and Collection

- Received flow monitoring data through August 2021 for review.
- Received additional data for CSO Level monitors and included in our review.
- Developed model time series files for all observed data and began performing flow balance and data review.
- Completed developing flow monitoring rain event files for each monitor.
- Completed flow monitoring data review for data through August 2021. Plan to request additional data for time period since August 2021.

Task 3 Collection System Model Review

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Task 4 Model Update and Calibration

- Time included as part of Data review for development of TSF files and event files to use in the modeling software.

Activity ID	Activity Name	Original Duration	Start	Finish	2020							2021							2022							2023														
					M	J	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	Jun	Jul	A	S	Oct	N	D	Jan	F	Mar	Apr	M	Jun	Jul	A	S	Oct	N	D	Jan	F	M	Apr
10142910 Ludlow Run Sustainable Source Control					01-May-23, 10142910																																			
Task 1 Project Administration - Planning					01-May-23, Task 1 Pr																																			
1.010	Notice to Proceed for PM Task 1	0	29-Apr-20 A	01-May-23	◆ Notice to Proceed for PM Task 1																																			
1.020	PM during Planning Project	610	29-Apr-20 A	01-May-23	PM during Planning P																																			
1.030	Prepare Task 1 Deliverables	26	29-Apr-20 A	03-Jun-20 A	■ Prepare Task 1 Deliverables																																			
1.040	Submit Draft Project Management Plan and Baseline Schedule for MSDGC Review	0	03-Jun-20 A	03-Jun-20 A	◆ Submit Draft Project Management Plan and Baseline Schedule for MSDGC Review																																			
1.050	Submit Draft QA/QC Plan for MSDGC Review	0	03-Jun-20 A	03-Jun-20 A	◆ Submit Draft QA/QC Plan for MSDGC Review																																			
1.060	Submit Draft Risk Management Plan for MSDGC Review	0	03-Jun-20 A	03-Jun-20 A	◆ Submit Draft Risk Management Plan for MSDGC Review																																			
1.070	MSDGC Review of Draft Deliverables	10	04-Jun-20 A	17-Jun-20 A	■ MSDGC Review of Draft Deliverables																																			
1.080	Resolve MSDGC Comments and Update Task 1 Deliverables	10	18-Jun-20 A	20-Jul-20 A	■ Resolve MSDGC Comments and Update Task 1 Deliverables																																			
1.085	Submit Revised Draft Task 1 Deliverables	0	01-Jul-20 A	01-Jul-20 A	◆ Submit Revised Draft Task 1 Deliverables																																			
1.090	Submit Final Project Management Plan	0	21-Jul-20 A	21-Jul-20 A	◆ Submit Final Project Management Plan																																			
1.100	Submit Final QA/QC Plan	0	21-Jul-20 A	21-Jul-20 A	◆ Submit Final QA/QC Plan																																			
1.110	Submit Final Risk Management Plan and Update Risk Register	0	21-Jul-20 A	21-Jul-20 A	◆ Submit Final Risk Management Plan and Update Risk Register																																			
1.140	Community Meeting	0	30-Jun-20 A	30-Jun-20 A	◆ Community Meeting																																			
1.150	Planning Workshop and Project Meeting 1	0	04-Dec-20 A	04-Dec-20 A	◆ Planning Workshop and Project Meeting 1																																			
1.160	Project Meeting 2	0	18-Jun-21	18-Jun-21	◆ Project Meeting 2																																			
1.170	Project Meeting 3	0	10-Sep-21	10-Sep-21	◆ Project Meeting 3																																			
1.180	Project Meeting 4	0	03-Dec-21	03-Dec-21	◆ Project Meeting 4																																			
1.190	Project Meeting 5	0	25-Feb-22	25-Feb-22	◆ Project Meeting 5																																			
1.200	Project Meeting 6	0	20-May-22	20-May-22	◆ Project Meeting 6																																			
1.210	Project Meeting 7	0	12-Aug-22	12-Aug-22	◆ Project Meeting 7																																			
1.220	Project Meeting 8	0	04-Nov-22	04-Nov-22	◆ Project Meeting 8																																			
1.230	Project Meeting 9	0	27-Jan-23	27-Jan-23	◆ Project Meeting 9																																			
1.240	Progress Meeting 10	0	17-Mar-23	17-Mar-23	◆ Progress Meeting 10																																			
Task 2 Data Review and Collection					31-Mar-22, Task 2 Data Review and Collection																																			
2.010	MSDGC NTP for Data Review and Collection and Collection System Model Review (Task 2 and 3)	0	18-Jun-20 A	18-Jun-20 A	◆ MSDGC NTP for Data Review and Collection and Collection System Model Review (Task 2 and 3)																																			
2.020	Obtain Data from MSDGC (NTP on 6/18/2020)	15	18-Jun-20 A	13-Nov-20 A	■ Obtain Data from MSDGC (NTP on 6/18/2020)																																			
2.030	Review Data	45	18-Jun-20 A	13-Nov-20 A	■ Review Data																																			
2.040	Initial Site Visit with MSDGC	0	08-Sep-20 A	08-Sep-20 A	◆ Initial Site Visit with MSDGC																																			
2.050	Prepare Draft Data Review Technical Memorandum	15	20-Aug-20 A	16-Sep-20 A	■ Prepare Draft Data Review Technical Memorandum																																			
2.060	Submit Draft Data Review Tech Memo for MSDGC Review	0	16-Sep-20 A	16-Sep-20 A	◆ Submit Draft Data Review Tech Memo for MSDGC Review																																			
2.070	MSDGC Review of Draft Data Review Tech Memo	10	16-Sep-20 A	06-Oct-20 A	■ MSDGC Review of Draft Data Review Tech Memo																																			
2.080	Resolve MSDGC Comments, Continue Collecting Data, and Update Data Review Tech Memo	10	07-Oct-20 A	11-Dec-20 A	■ Resolve MSDGC Comments, Continue Collecting Data, and Update Data Review Tech Memo																																			
2.090	Submit Final Data Review Tech Memo	0	11-Dec-20 A	11-Dec-20 A	◆ Submit Final Data Review Tech Memo																																			
2.100	Collect additional data as requested (as authorized by MSDGC)	40	04-Feb-22	31-Mar-22	■ Collect additional data as requested (as authorized by MSDGC)																																			
Task 3 Collection System Model Review					31-Mar-22, Task 3 Collection System Model Review																																			
3.010	Obtain Model and Model Data from MSDGC	0	01-Sep-20 A	01-Sep-20 A	◆ Obtain Model and Model Data from MSDGC																																			
3.020	Review Flow and Rain Data and Review Model	40	01-Sep-20 A	24-Nov-20 A	■ Review Flow and Rain Data and Review Model																																			
3.030	Prepare Draft Model Review Technical Memorandum, Preliminary Review Checklist, and Flow Monitoring Plan	15	04-Nov-20 A	24-Nov-20 A	■ Prepare Draft Model Review Technical Memorandum, Preliminary Review Checklist, and Flow Monitoring Plan																																			
3.040	Submit Draft Model Review Tech Memo, Preliminary Review Checklist, and Flow Monitoring Plan for MSDGC Review	0	24-Nov-20 A	24-Nov-20 A	◆ Submit Draft Model Review Tech Memo, Preliminary Review Checklist, and Flow Monitoring Plan for MSDGC Review																																			
3.050	MSDGC Review of Draft Model Review Tech Memo	13	25-Nov-20 A	11-Dec-20 A	■ MSDGC Review of Draft Model Review Tech Memo																																			
3.060	Resolve MSDGC Comments and Update Model Review Tech Memo and Flow Monitoring Plan	20	14-Dec-20 A	08-Jan-21 A	■ Resolve MSDGC Comments and Update Model Review Tech Memo and Flow Monitoring Plan																																			
3.070	Submit Final Model Review Tech Memo and Flow Monitoring Plan	0	08-Jan-21 A	08-Jan-21 A	◆ Submit Final Model Review Tech Memo and Flow Monitoring Plan																																			
3.080	Perform system survey as recommended in Model Review Tech Memo (with MSDGC Approval)	10	18-Mar-22	31-Mar-22	■ Perform system survey as recommended in Model Review Tech Memo (with MSDGC Approval)																																			

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining Work
 ■ Actual WBS Summary
■ Actual Level of Effort
 ■ Remaining Work
 Remaining WBS Summary
 ◆ Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	2020												2021												2022												2023											
					M	J	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	Jun	Jul	A	S	Oct	N	D	Jan	F	Mar	Apr	M	Jun	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	J	Jul	A	S							
Task 4 Model Update and Calibration					20-Oct-22, Task 4 Model Update and Calibration																																															
4.005	MSDGC NTP for Task 4	0	20-Jan-21 A	20-Oct-22	◆ MSDGC NTP for Task 4																																															
4.010	MSDGC Install Flow Monitors	10	15-Mar-21 A	26-Mar-21 A	■ MSDGC Install Flow Monitors																																															
4.020	Review Flow Monitor Data during Collection	156	29-Mar-21 A	31-Mar-22	■ Review Flow Monitor Data during Collection																																															
4.030	Receive Flow Monitoring Data	10	01-Apr-22	14-Apr-22	■ Receive Flow Monitoring Data																																															
4.040	Update Hydraulic Model	60	07-Jan-22	31-Mar-22	■ Update Hydraulic Model																																															
4.060	Prepare Draft Task 4 Deliverables based on MSDGC Modeling guidelines	15	15-Apr-22	05-May-22	■ Prepare Draft Task 4 Deliverables based on MSDGC Modeling guidelines																																															
4.070	Submit MSDGC Preliminary Review Checklist	0		05-May-22	◆ Submit MSDGC Preliminary Review Checklist																																															
4.080	MSDGC Review of Preliminary Review Checklist	10	06-May-22	19-May-22	■ MSDGC Review of Preliminary Review Checklist																																															
4.085	Update Checklist based on MSDGC comments	10	20-May-22	02-Jun-22	■ Update Checklist based on MSDGC comments																																															
4.087	Validate and Calibrate Hydraulic Model (Assumed 10 FM)	50	03-Jun-22	11-Aug-22	■ Validate and Calibrate Hydraulic Model (Assumed 10 FM)																																															
4.090	Submit MSDGC Detailed Model Review Checklist	0		11-Aug-22	◆ Submit MSDGC Detailed Model Review Checklist																																															
4.100	MSDGC Review of Detailed Model Review Checklist	10	12-Aug-22	25-Aug-22	■ MSDGC Review of Detailed Model Review Checklist																																															
4.102	MSDGC Conditional Approval of Model to Prepare Report	0		25-Aug-22	◆ MSDGC Conditional Approval of Model to Prepare Report																																															
4.105	Prepare Draft Modeling Report and Model Files	15	26-Aug-22	15-Sep-22	■ Prepare Draft Modeling Report and Model Files																																															
4.110	Submit Draft Modeling Report and Model Files	0		15-Sep-22	◆ Submit Draft Modeling Report and Model Files																																															
4.120	MSDGC Review of Draft Modeling Report	10	16-Sep-22	29-Sep-22	■ MSDGC Review of Draft Modeling Report																																															
4.130	Resolve MSDGC Comments and Update Modeling Report	15	30-Sep-22	20-Oct-22	■ Resolve MSDGC Comments and Update Modeling Report																																															
4.140	Submit Final Modeling Report and Model Files	0		20-Oct-22	◆ Submit Final Modeling Report and Model Files																																															
4.150	Develop Baseline Project Model	10	06-Sep-22	19-Sep-22	■ Develop Baseline Project Model																																															
Task 5 Planning and BCE					01-May-23, Task 5 Planning and BCE																																															
5.010	Perform Conditions and Capacity Analysis	20	20-Sep-22	17-Oct-22	■ Perform Conditions and Capacity Analysis																																															
5.020	Perform Alternatives Analysis and Modeling	50	18-Oct-22	26-Dec-22	■ Perform Alternatives Analysis and Modeling																																															
5.030	Prepare Alternatives Analysis Report	20	27-Dec-22	23-Jan-23	■ Prepare Alternatives Analysis Report																																															
5.040	Submit Draft Alternatives Analysis Report for MSDGC Review	0		23-Jan-23	◆ Submit Draft Alternatives Analysis Report																																															
5.050	MSDGC Review of Draft Alternatives Analysis Report	10	24-Jan-23	06-Feb-23	■ MSDGC Review of Draft Alternatives Analysis Report																																															
5.060	Conduct Alternatives Analysis Review Meeting	0		10-Feb-23	◆ Conduct Alternatives Analysis Review Meeting																																															
5.070	Resolve MSDGC Comments and Update Alternatives Analysis Report	15	07-Feb-23	27-Feb-23	■ Resolve MSDGC Comments and Update Alternatives Analysis Report																																															
5.080	Submit Final Alternatives Analysis Report	0		27-Feb-23	◆ Submit Final Alternatives Analysis Report																																															
5.090	Prepare Draft BCE	20	28-Feb-23	27-Mar-23	■ Prepare Draft BCE																																															
5.100	Submit Draft BCE for MSDGC Review	0		27-Mar-23	◆ Submit Draft BCE for MSDGC Review																																															
5.110	MSDGC Review of Draft BCE	10	28-Mar-23	10-Apr-23	■ MSDGC Review of Draft BCE																																															
5.120	Conduct BCE Review Meeting	0		14-Apr-23	◆ Conduct BCE Review Meeting																																															
5.130	Resolve MSDGC Comments and Update BCE	15	11-Apr-23	01-May-23	■ Resolve MSDGC Comments and Update BCE																																															
5.140	Submit Final BCE Report	0		01-May-23	◆ Submit Final BCE Report																																															
5.999	End of Planning Phase	0		01-May-23*	◆ End of Planning Phase																																															

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining Work
 ■ Actual WBS Summary
■ Actual Level of Effort
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 ◆ Milestone