Explore API Documentation

Explore_Estimate_CostItemBenchMark

Version 1.2

Last Modified: 3-Nov-2025

Last Modified By: Litzy Mora

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Change Log

This changelog only contains significant or notable changes to the revision. Any editorial type changes or minor changes are not included.

Revision	Change Date	Description	Modified By
1.0	19-Nov-2024	Initial release	Aaron Cohen
2.0	22-Oct-2025	Updated data refresh verbiage	Litzy Mora

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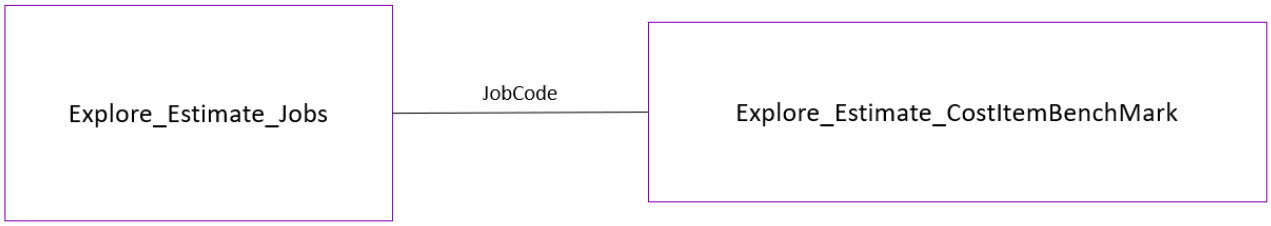
Overview

The ***Explore_Estimate_CostItemBenchMark*** API provides Cost Item record fields related to Benchmarking.

Relationships and Dependencies

From: Table	To: Table	Relationship	Cardinality[1]	Comment
CostItemBenchMark (CIBM)	Jobs (J)	CIBM.JobCode = J.JobCode	M:1	



[1] *1:M = One to Many, 1:1 = One to One, M:1 = Many to one*

API Detail

Direction		From Project Suite
Pagination		50,000 Rows
Frequency		All Reporting APIs are used by calling a GET method at an interval determined by the customer. InEight suggests using these APIs on an infrequent basis (once per day) to avoid potential performance impact to live systems when the returned data set could be large.
Trigger Method(s)		All default OData filters are supported
Average Payload Size		Depends on date range selected
APIM Name		Explore_Estimate_CostItemBenchMark
Replicate View		Explore.[vwEstimateCostItemBenchMark]
Data Refresh/Delta/Incremental Loads		The refresh of the data in this API is sync-based. The time it takes data to appear in this API is dependent on the load on the server at the time. If it takes more than 15 minutes, please submit a ticket with the Service Desk.
Project Suite	**Starting Version**	23.12
	Ending Version	N/A

Supported Filters

All default OData filters are supported by this API.

Fields

Name	Type	Char Max Length	Numeric Precision	Date Precision	Product	PK
EstimateCostItemBenchMarkId	bigint	8	19	0	Estimate	X
CostItemsUID	uniqueidentifier	16	0	0	Estimate	
JobCode	nvarchar	200	0	0	Estimate	
CBSPositionCode	nvarchar	100	0	0	Estimate	
Description	nvarchar	-1	0	0	Estimate	
ForecastTOQuantity	float	8	53	0	Estimate	
UnitofMeasure	nvarchar	50	0	0	Estimate	
UnitCost	float	8	53	0	Estimate	
TotalCost	float	8	53	0	Estimate	
Currency	nvarchar	400	0	0	Estimate	
BenchmarkMHUnitlow	float	8	53	0	Estimate	
BenchmarkMHUnithigh	float	8	53	0	Estimate	
BenchmarkMHUnitavg	float	8	53	0	Estimate	
BenchmarkMHUnitvariance	float	8	53	0	Estimate	
BenchmarkMHUnitstddev	float	8	53	0	Estimate	
BenchmarkUnitMHlow	float	8	53	0	Estimate	
BenchmarkUnitMHhigh	float	8	53	0	Estimate	
BenchmarkUnitMHavg	float	8	53	0	Estimate	

BenchmarkUnitMHvariance	float	8	53	0	Estimate	
BenchmarkUnitMHstddev	float	8	53	0	Estimate	
BenchmarkUnitCostlow	float	8	53	0	Estimate	
BenchmarkUnitCosthigh	float	8	53	0	Estimate	
BenchmarkUnitCostavg	float	8	53	0	Estimate	
BenchmarkUnitCostvariance	float	8	53	0	Estimate	
BenchmarkUnitCoststddev	float	8	53	0	Estimate	
BenchmarkDataPoints	int	4	10	0	Estimate	
BenchmarkLastUpdated	datetime	8	23	3	Estimate	
IsTerminal	bit	1	1	0	Estimate	
Suspend	bit	1	1	0	Estimate	
CostItemSort	nvarchar	100	0	0	Estimate	

Field Descriptions

Name	Description	Example
EstimateCostItemBenchMarkId	System generated field, for internal use only	468336
CostItemsUID	Unique identifier for a Cost Item record within a Job. This fields value is not visible in the application.	ec614499-750f-4592-b75d-dac50f4e3e66
JobCode	Code field value of the Job as found on the Overview tab of Job Properties or in the Job Register of the Estimate Application	Training Job
CBSPositionCode	CBS Position Code field value of the Cost Item record	4.1
Description	Description field value of the Cost Item record	Furnish & Haul Base Material
ForecastTOQuantity	Forecast (T/O) Quantity field value of the Cost Item record	45000
UnitofMeasure	Unit of Measure field value of the Cost Item record	Ton
UnitCost	Unit Cost field value of the Cost Item record	13.669842299776516
TotalCost	Total Cost (Forecast) field value of the Cost Item record	615142.9034821363
Currency	Currency field value of the Cost Item record	U.S. Dollar
BenchmarkMHUnitlow	Benchmark MH/ Unit (low) field value of the Cost Item record	0.015151515
BenchmarkMHUnithigh	Benchmark MH/ Unit (high) field value of the Cost Item record	0.019999999827126903

BenchmarkMHUnitavg	Benchmark MH/ Unit (average) field value of the Cost Item record	0.017595571
BenchmarkMHUnitvariance	Benchmark MH/ Unit (% variance) field value of the Cost Item record	51.55329004766909
BenchmarkMHUnitstddev	Benchmark MH/ Unit (std. dev.) field value of the Cost Item record	4.403443425598984
BenchmarkUnitMHlow	Benchmark Units/ MH (low) field value of the Cost Item record	49.99999999999999
BenchmarkUnitMHhigh	Benchmark Units/ MH (high) field value of the Cost Item record	65.99999999999999
BenchmarkUnitMHavg	Benchmark Units/ MH (average) field value of the Cost Item record	57.625
BenchmarkUnitMHvariance	Benchmark Units/ MH (% variance) field value of the Cost Item record	-34.92407809
BenchmarkUnitMHstddev	Benchmark Units/ MH (std. dev.) field value of the Cost Item record	2.969792341772315
BenchmarkUnitCostlow	Benchmark Unit Cost (low) field value of the Cost Item record	12.344315586865157
BenchmarkUnitCosthigh	Benchmark Unit Cost (high) field value of the Cost Item record	13.601912948098544
BenchmarkUnitCostavg	Benchmark Unit Cost (average) field value of the Cost Item record	13.003410346000265
BenchmarkUnitCostvariance	Benchmark Unit Cost (% variance) field value of the Cost Item record	5.125055166633565
BenchmarkUnitCoststddev	Benchmark Unit Cost (std. dev.) field value of the Cost Item record	1.462475282305668
BenchmarkDataPoints	Benchmark Data Points field value of the Cost Item record	4
BenchmarkLastUpdated	Benchmark Last Updated field value of the Cost Item record	null
IsTerminal	Is Terminal field value of the Cost Item record	TRUE
Suspend	Suspend field value of the Cost Item record	FALSE
CostItemSort	Value indicating the ordinal position of the Cost Items in the CBS Register when the register is sorted by the CBS position code. Can be	4.1

	used for sorting. Not visible in the application.	

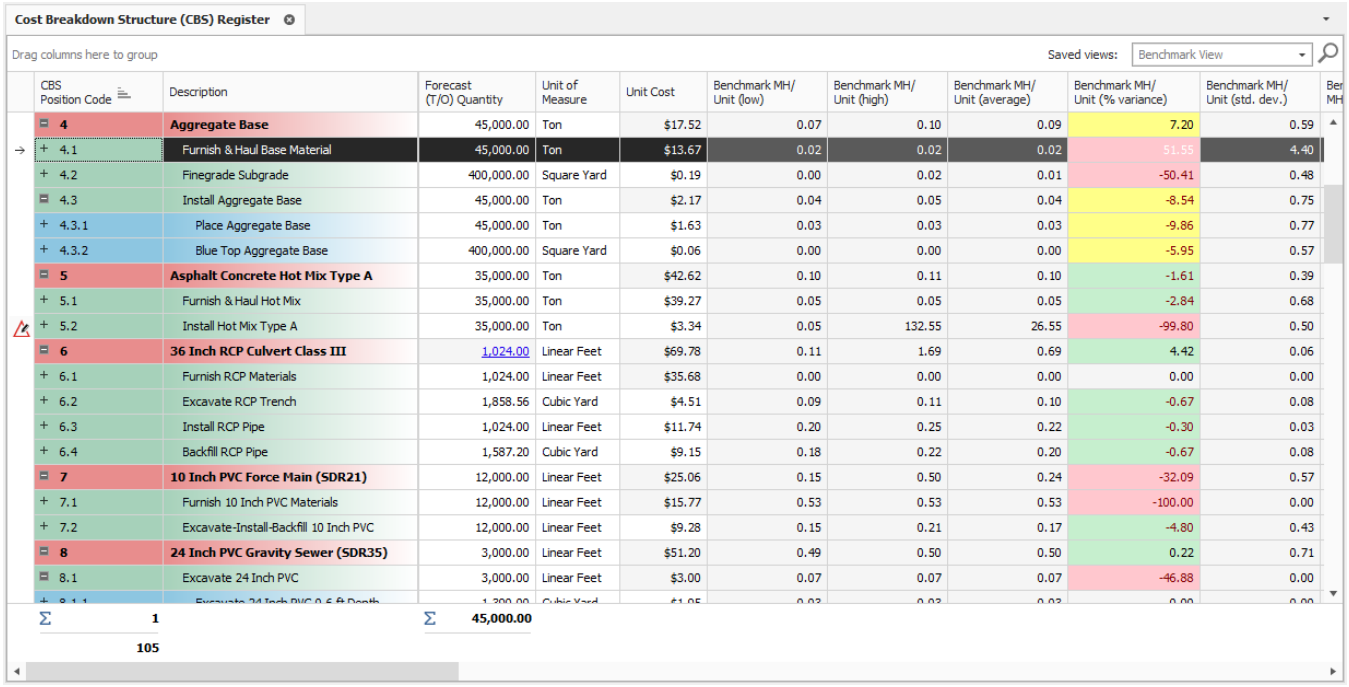
Sample


```
{
        "EstimateCostItemBenchMarkId": 468336,
        "CostItemsUID": "ec614499-750f-4592-b75d-dac50f4e3e66",
        "JobCode": "Training Job",
        "CBSPositionCode": "4.1",
        "Description": "Furnish & Haul Base Material",
        "ForecastTOQuantity": 45000.0,
        "UnitofMeasure": "Ton",
        "UnitCost": 13.669842299776516,
        "TotalCost": 615142.90348213632,
        "Currency": "U.S. Dollar",
        "BenchmarkMHUnitlow": 0.0151515149105889,
        "BenchmarkMHUnithigh": 0.019999999827126903,
        "BenchmarkMHUnitavg": 0.0175955711898906,
        "BenchmarkMHUnitvariance": 51.553290047669087,
        "BenchmarkMHUnitstddev": 4.4034434255989838,
        "BenchmarkUnitMHlow": 49.999999999999993,
        "BenchmarkUnitMHhigh": 65.999999999999986,
        "BenchmarkUnitMHavg": 57.625,
        "BenchmarkUnitMHvariance": -34.924078091106296,
        "BenchmarkUnitMHstddev": 2.9697923417723149,
        "BenchmarkUnitCostlow": 12.344315586865157,
        "BenchmarkUnitCosthigh": 13.601912948098544,
        "BenchmarkUnitCostavg": 13.003410346000265,
        "BenchmarkUnitCostvariance": 5.1250551666335653,
        "BenchmarkUnitCoststddev": 1.4624752823056679,
        "BenchmarkDataPoints": 4,
        "BenchmarkLastUpdated": null,
        "IsTerminal": true,
        "Suspend": false,
        "CostItemSort": "4.1"
}
```

Data Validation

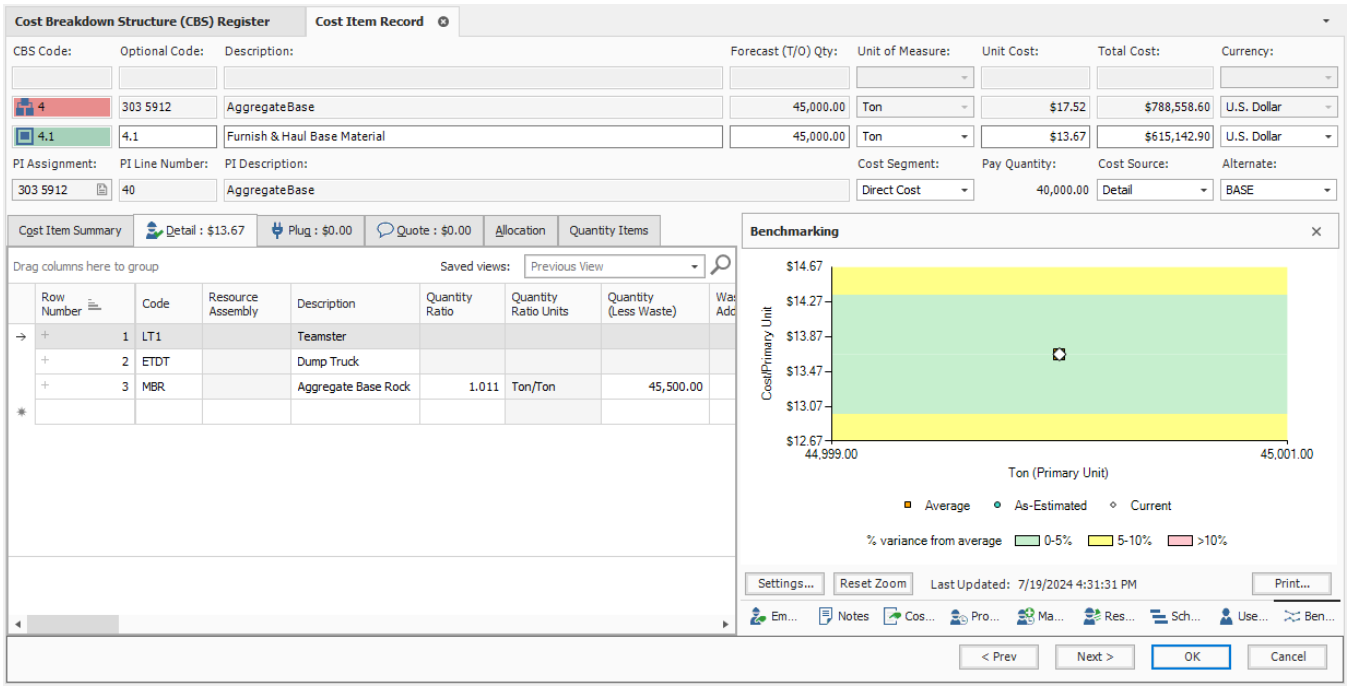
The Cost Item Benchmark records can be validated by opening using the Benchmark View in the CBS Register or opening individual Cost Item records and navigating to the Benchmark Datablock.

Figure 1: Cost Breakdown Structure (CBS) Register with the *Benchmark* Saved view selected



CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Benchmark MH/ Unit (low)	Benchmark MH/ Unit (high)	Benchmark MH/ Unit (average)	Benchmark MH/ Unit (% variance)	Benchmark MH/ Unit (std. dev.)
4	**Aggregate Base**	45,000.00	Ton	$17.52	0.07	0.10	0.09	7.20	0.59
4.1	Furnish & Haul Base Material	45,000.00	Ton	$13.67	0.02	0.02	0.02	51.55	4.40
4.2	Finegrade Subgrade	400,000.00	Square Yard	$0.19	0.00	0.02	0.01	-50.41	0.48
4.3	Install Aggregate Base	45,000.00	Ton	$2.17	0.04	0.05	0.04	-8.54	0.75
4.3.1	Place Aggregate Base	45,000.00	Ton	$1.63	0.03	0.03	0.03	-9.86	0.77
4.3.2	Blue Top Aggregate Base	400,000.00	Square Yard	$0.06	0.00	0.00	0.00	-5.95	0.57
5	**Asphalt Concrete Hot Mix Type A**	35,000.00	Ton	$42.62	0.10	0.11	0.10	-1.61	0.39
5.1	Furnish & Haul Hot Mix	35,000.00	Ton	$39.27	0.05	0.05	0.05	-2.84	0.68
5.2	Install Hot Mix Type A	35,000.00	Ton	$3.34	0.05	132.55	26.55	-99.80	0.50
6	**36 Inch RCP Culvert Class III**	1,024.00	Linear Feet	$69.78	0.11	1.69	0.69	4.42	0.06
6.1	Furnish RCP Materials	1,024.00	Linear Feet	$35.68	0.00	0.00	0.00	0.00	0.00
6.2	Excavate RCP Trench	1,858.56	Cubic Yard	$4.51	0.09	0.11	0.10	-0.67	0.08
6.3	Install RCP Pipe	1,024.00	Linear Feet	$11.74	0.20	0.25	0.22	-0.30	0.03
6.4	Backfill RCP Pipe	1,587.20	Cubic Yard	$9.15	0.18	0.22	0.20	-0.67	0.08
7	**10 Inch PVC Force Main (SDR21)**	12,000.00	Linear Feet	$25.06	0.15	0.50	0.24	-32.09	0.57
7.1	Furnish 10 Inch PVC Materials	12,000.00	Linear Feet	$15.77	0.53	0.53	0.53	-100.00	0.00
7.2	Excavate-Install-Backfill 10 Inch PVC	12,000.00	Linear Feet	$9.28	0.15	0.21	0.17	-4.80	0.43
8	**24 Inch PVC Gravity Sewer (SDR35)**	3,000.00	Linear Feet	$51.20	0.49	0.50	0.50	0.22	0.71
8.1	Excavate 24 Inch PVC	3,000.00	Linear Feet	$3.00	0.07	0.07	0.07	-46.88	0.00
Σ	1	Σ 45,000.00							
	105								

Figure 2: Cost Item Record with the Benchmark Datablock selected



CBS Code:	Optional Code:	Description:	Forecast (T/O) Qty:	Unit of Measure:	Unit Cost:	Total Cost:	Currency:
4	303 5912	AggregateBase	45,000.00	Ton	$17.52	$788,558.60	U.S. Dollar
4.1	4.1	Furnish & Haul Base Material	45,000.00	Ton	$13.67	$615,142.90	U.S. Dollar

PI Assignment:	PI Line Number:	PI Description:	Cost Segment:	Pay Quantity:	Cost Source:	Alternate:
303 5912	40	AggregateBase	Direct Cost	40,000.00	Detail	BASE

Cost Item Summary | Detail : $13.67 | Plug : $0.00 | Quote : $0.00 | Allocation | Quantity Items

Drag columns here to group — Saved views: Previous View

Row Number	Code	Resource Assembly	Description	Quantity Ratio	Quantity Ratio Units	Quantity (Less Waste)
1	LT1		Teamster			
2	ETDT		Dump Truck			
3	MBR		Aggregate Base Rock	1.011	Ton/Ton	45,500.00