Natural Gas Pipeline / LDC Rates

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Gas Industry Structure

Producers

Pipelines

Distributors

LDC

Customers

Marketers/
Brokers

Upstream

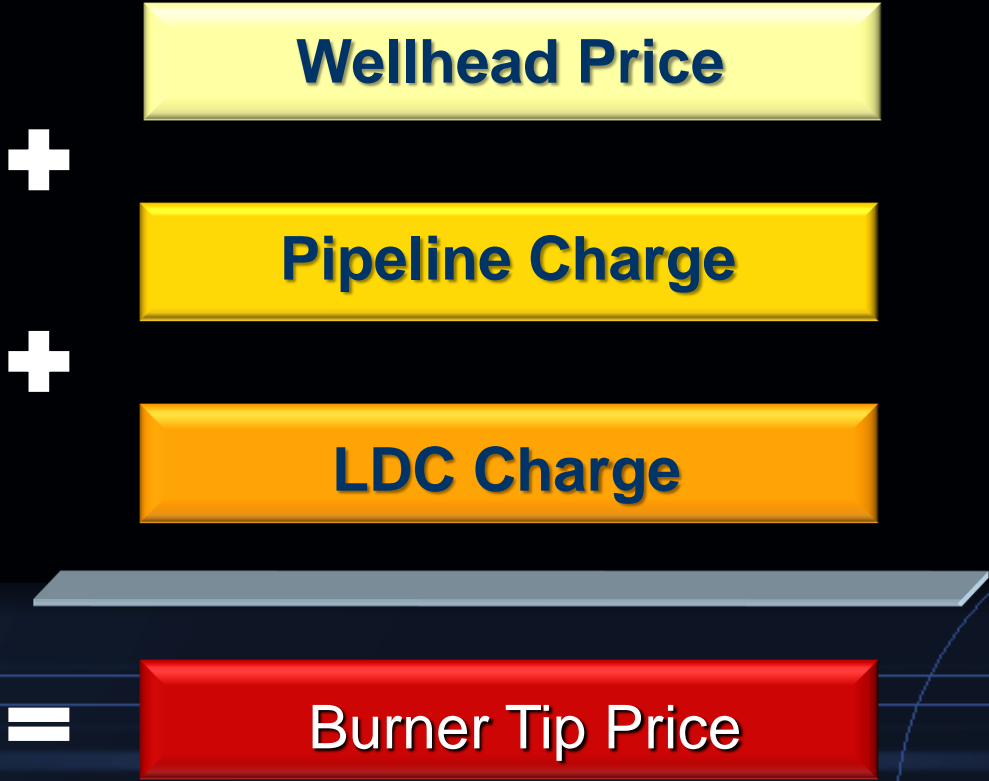Downstream
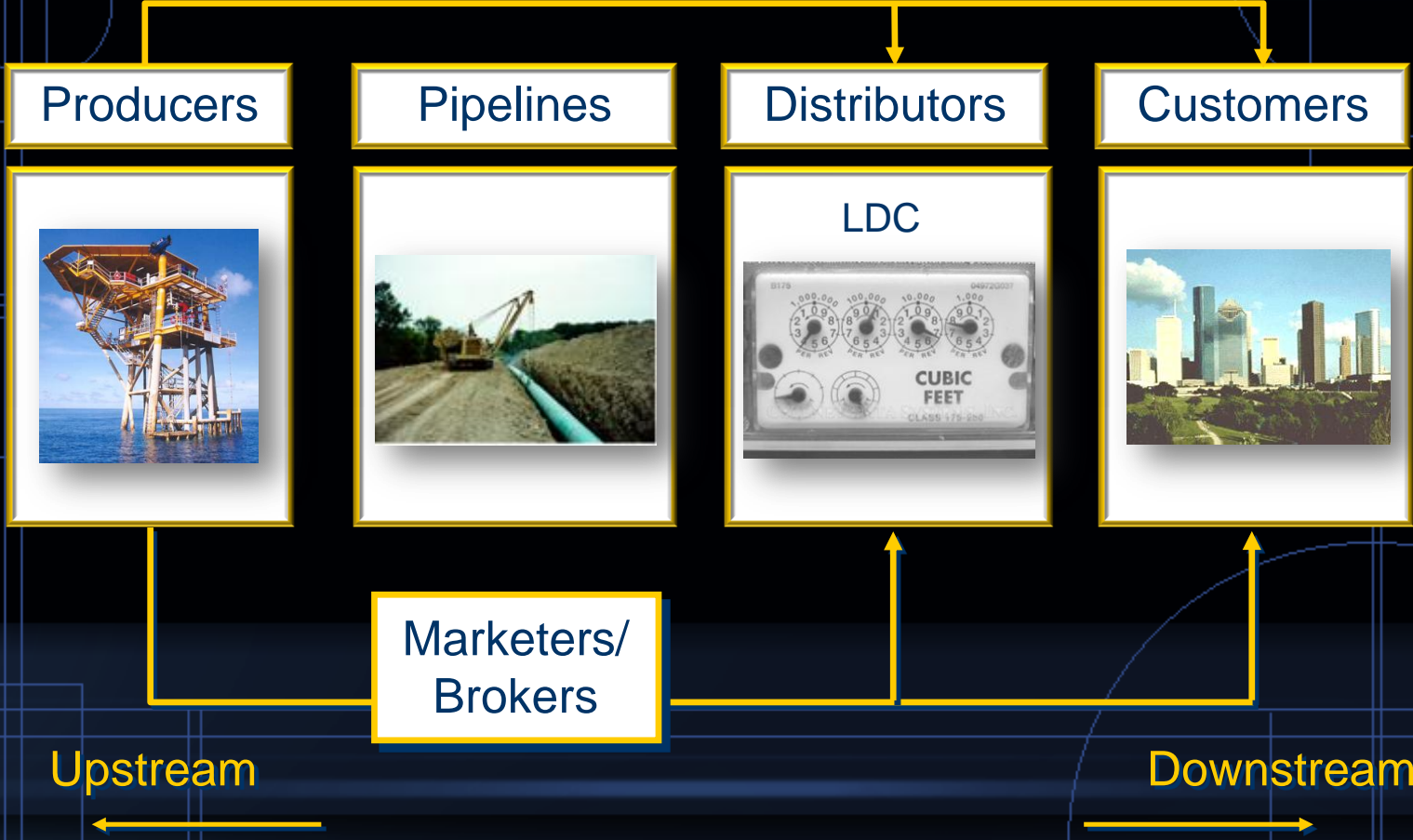
Gas Industry
Functional Structure

Wellhead

Pipeline 1

Pipeline 2

Pipeline 3

City Gate

Burner Tip

LDC

Burner Tip Price ($/MMBtu)

Wellhead Price

+

Pipeline Charge

+

LDC Charge

= Burner Tip Price

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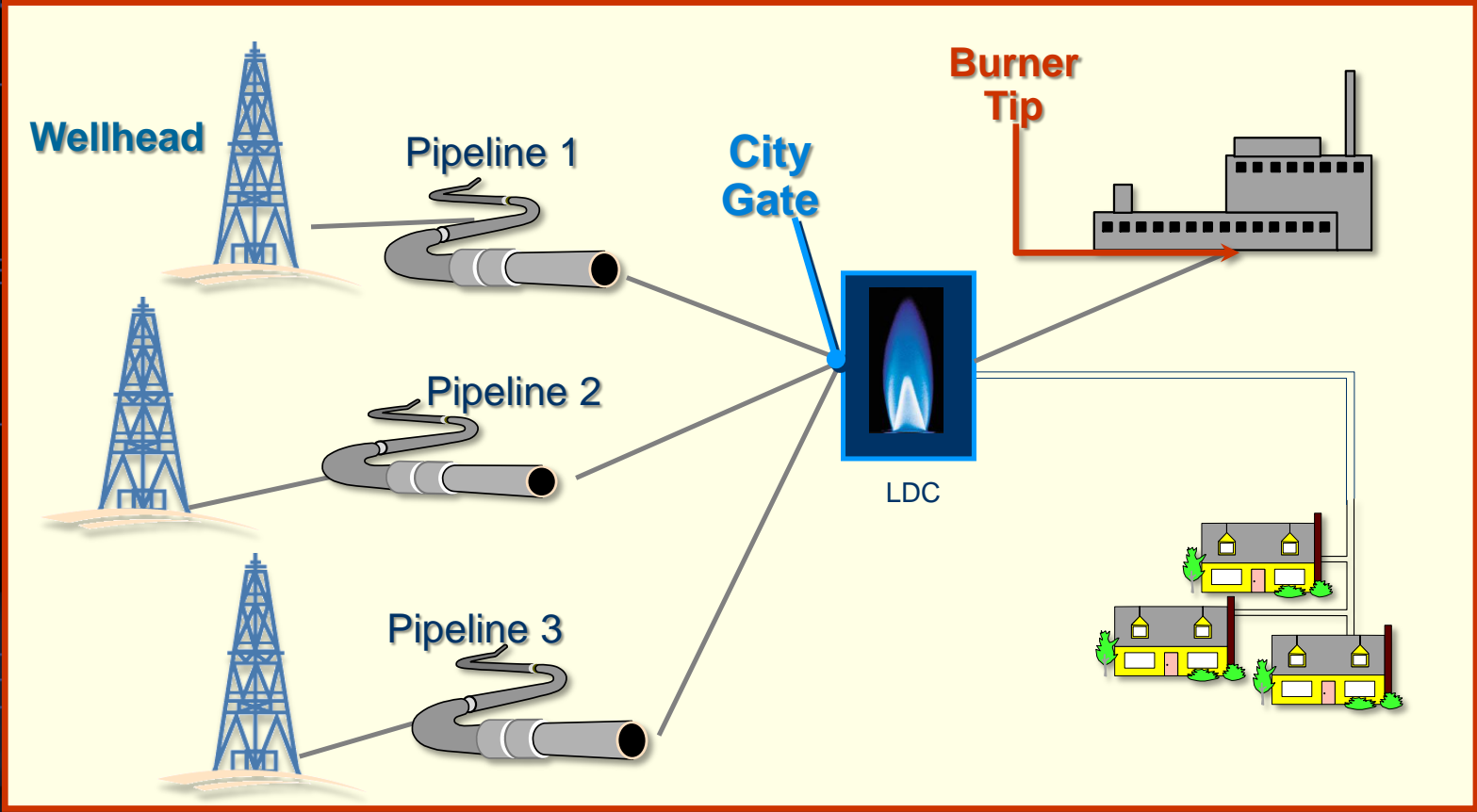
Delivery Rates
Regulated Utility Tariff Rates

Agency

Transmission ➡ **FERC**

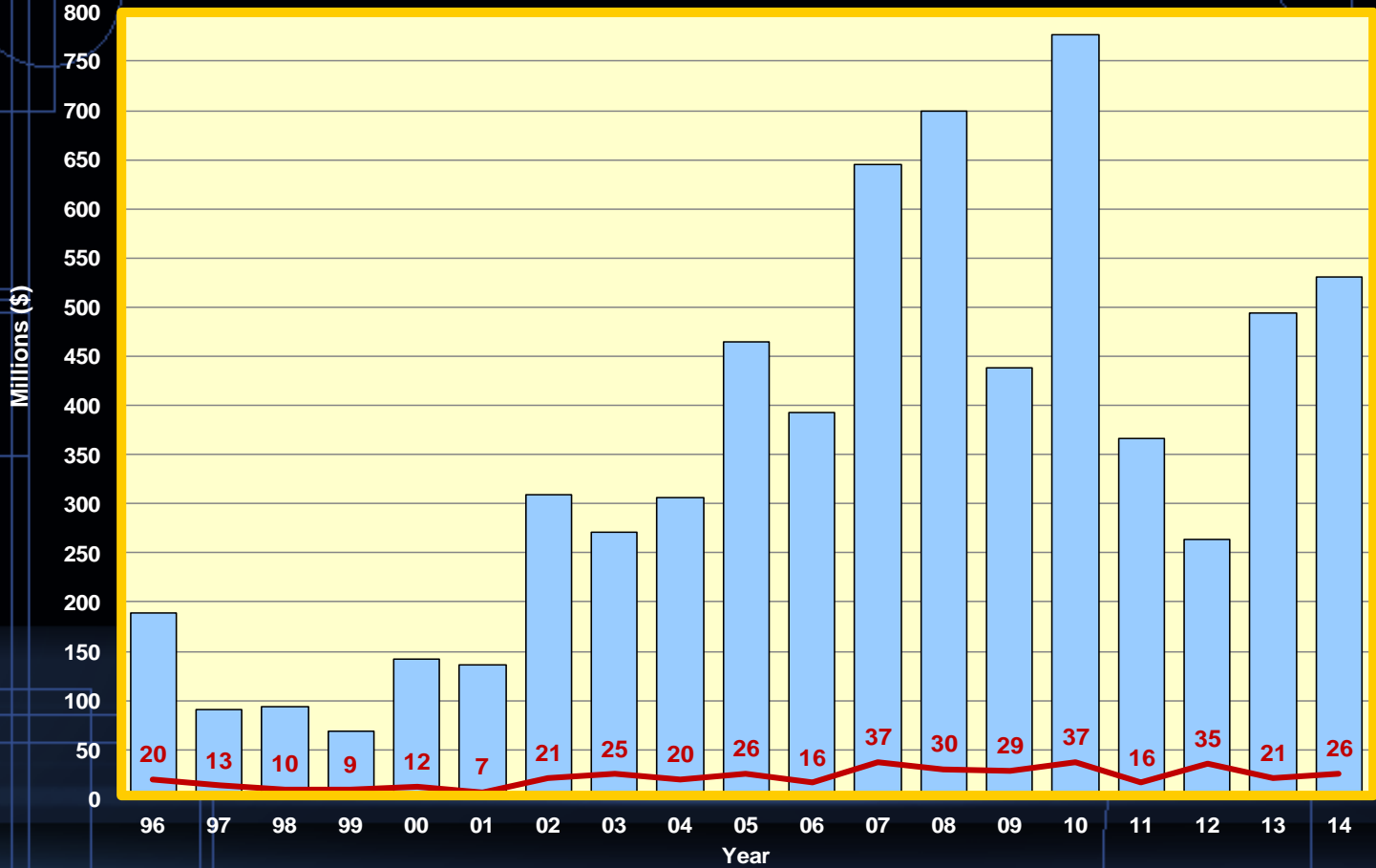**Distribution** ➡ **State/Local**

Discovery
- ✓ **Regulatory Agency**
- ✓ **Utility Tariff Book**

LDC Rate Case

- Utility files proposed rates and supporting evidence

- Other parties challenge and offer alternatives

- Commission makes decision

Annual Gas Rate Case Decisions
and Authorized Gas Revenue Increases ($M)

Legend: Total Annual Revenue Authorized ($M) — Number of ROE Cases

Main LDC Rate Case Issues

- **Class Cost of Service**
  - Volumetric vs. demand allocation

- **Spread among classes**

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Purpose of a Cost-of-Service Study

To measure the responsibility of each class for the service provided by the utility

Typical Rate Classes in a Cost-of-Service Study

- Residential

- General Service

- Large Volume Service
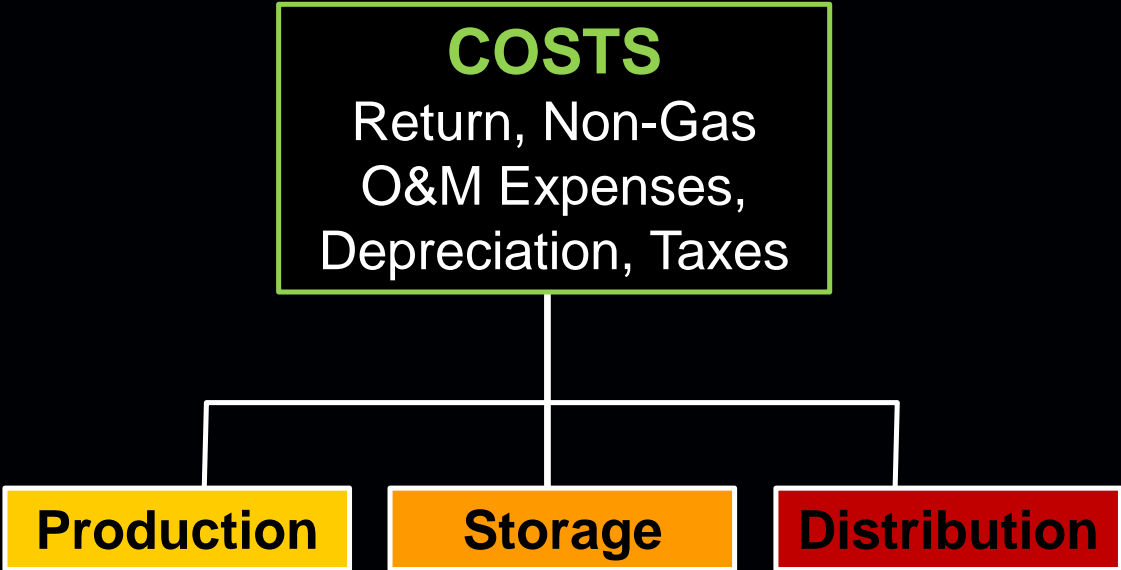
- Interruptible

- Transportation

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Cost Study Should Reflect:

- Many different types of cost

- Some customers do not use all of the services provided by an LDC

- Usage patterns affect cost incurrence

Procedure

1) Identify different types of cost

2) Determine causative basis for each type

3) Allocate each item among classes

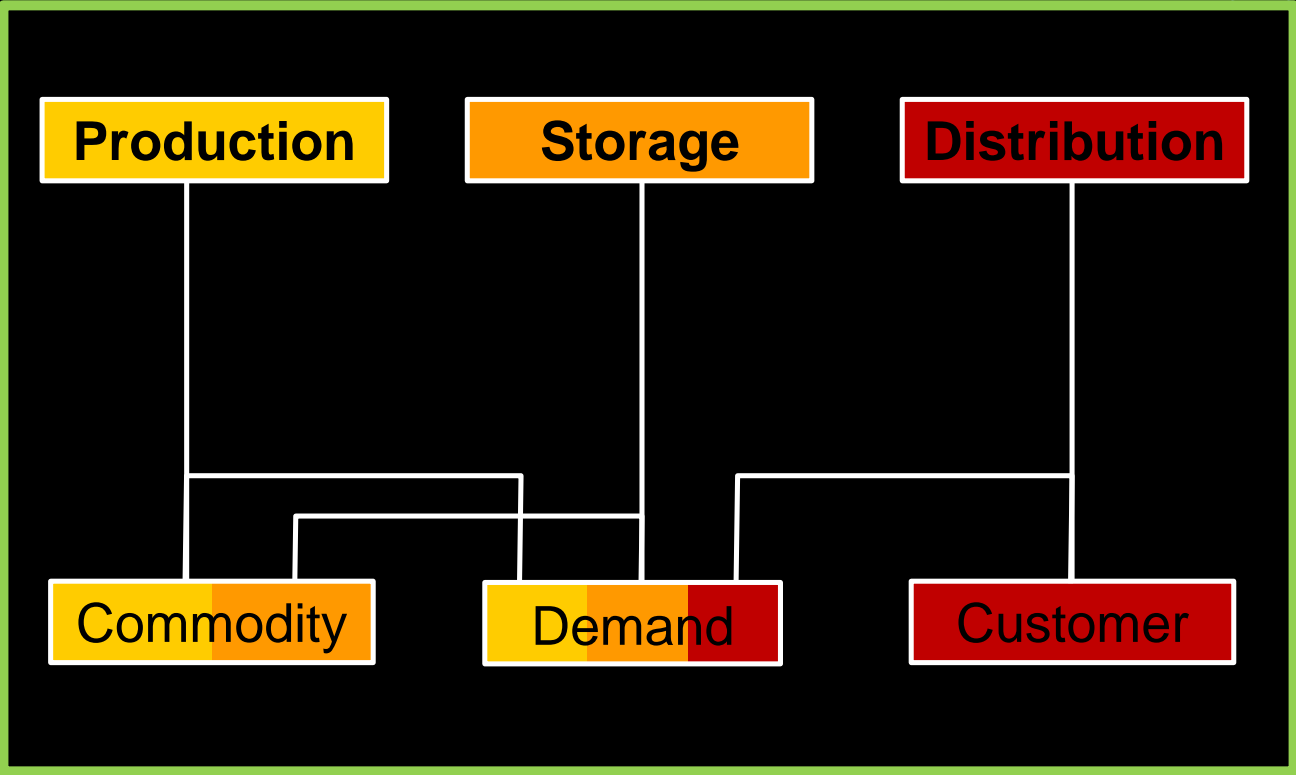BAI

Functionalization

COSTS
Return, Non-Gas
O&M Expenses,
Depreciation, Taxes

Production   **Storage**   **Distribution**

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Classification

Determine the primary causative factor for each type of cost

Classification

Classification Categories

- Direct assignment

- Number of customers

- Commodity (Mcf or therm usage)

- Demand requirements
  (Maximum rate of usage – Mcf per day

- Revenue related

Classification of Plant

	Customer	Demand	Commodity
Production		✓	✓
Storage		✓	✓
Distribution	✓	✓	
General	✓	✓	✓

Classification of Expense

	Customer	Demand	Commodity
Production		✔	✔
Storage		✔	✔
Distribution	✔	✔	
Customer Acct.	✔		
Admin. & Gen.	✔	✔	✔

Methods of Allocation

- Cost causation

- "Benefits"

- Social / Political Policy

- End results

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Allocation Factors

- Externally supplied

- Internally generated – derived from prior allocations

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Demand Allocation Methods
General Criteria

- Cost causation

- Recognize utility's load characteristics

Demand Allocation Methods

- Coincident Peak

- Non-Coincident Peak

- Average and Excess

- Average and Peak

- Average Demand

Coincident Peak Allocation Method

	Mcf	Percent
Residential	54,125	54.00%
General Serv.	32,000	31.93%
Interruptible	7,100	7.09%
Transportation	7,000	6.98%
TOTAL	100,225	100.00%

Average & Excess Method
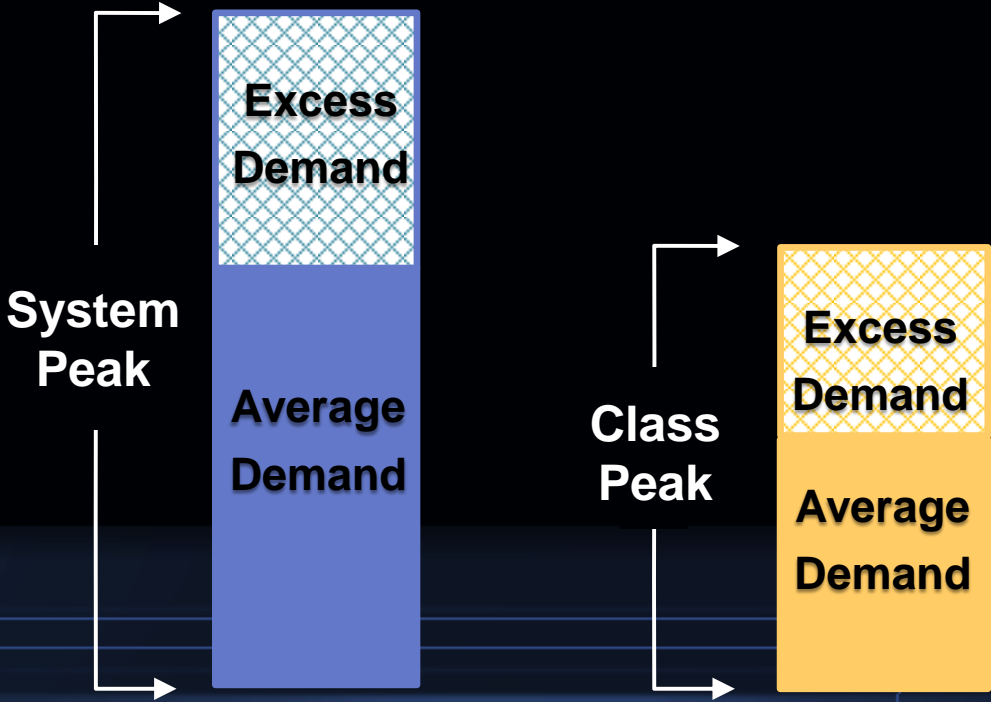
Average & Excess Method

	Average Demand %	LF	Excess Demand %	1 - LF	AED %
Res	32.5%	37%	64.9%	63%	52.9%
GS	29.5%	37%	33.2%	63%	31.8%
IS	20.9%	37%	0.1%	63%	7.8%
Transp.	17.1%	37%	1.8%	63%	7.5%

Average & Peak Method

Peak
Demand

Average
Demand

Double
Counted

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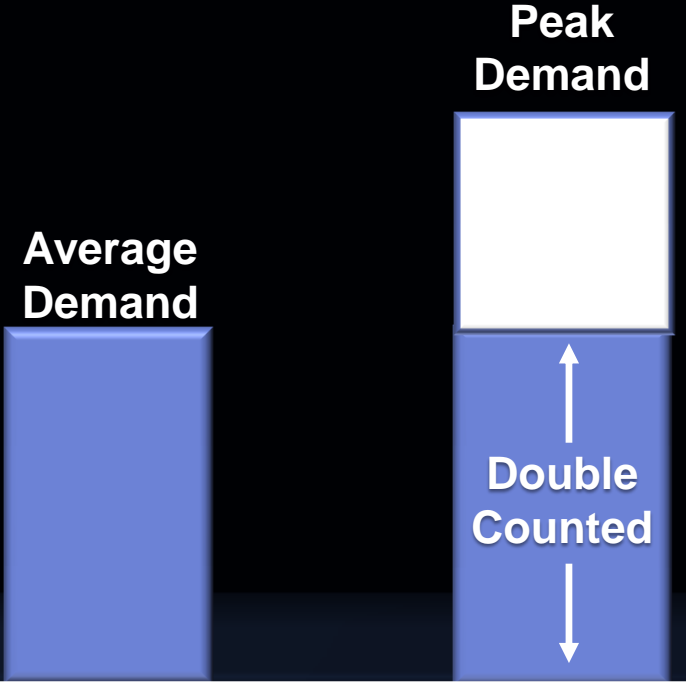
Average & Peak Method

	Average Demand %	LF	Peak Demand %	1 - LF	AEP %
Res	32.5%	37%	58.9%	63%	49.2%
GS	29.5%	37%	33.7%	63%	32.1%
IS	20.9%	37%	0.0%	63%	7.7%
Transp.	17.1%	37%	7.4%	63%	11.0%

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Average Demand or Commodity Allocation Factors

	Annual Mcf Throughput	Percent
Residential	4,015,479	32.5%
General Serv.	3,635,714	29.5%
Interruptible	2,577,034	20.9%
Transportation	2,114,666	17.1%
TOTAL	12,342,893	100.0%

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Coincident Demand vs. Average and Peak

Distribution Mains Acct. 376 Net Plant - $1,000,000,000

Average & Peak Allocation

Rate Schedule	Amount	Peak Day CCF	Annual Volume CCF	Load Factor %	Net Plant $/CCF Peak Day	Index
Residential	$ 502,789,056	10,000,000	1,100,000,000	30.1%	$ 50.28	0.96
Commercial	$ 370,697,833	7,000,000	900,000,000	35.2%	52.96	1.01
Transportation	$ 126,513,110	2,000,000	400,000,000	54.8%	63.26	1.20
Total	$ 1,000,000,000	19,000,000	2,400,000,000	34.6%	$ 52.63	1.00

Coincident Demand Allocation

| Rate Schedule	Amount	Peak Day CCF	Annual Volume CCF	Load Factor %	Net Plant $/CCF Peak Day	Index
Residential	$ 526,315,789	10,000,000	1,100,000,000	30.1%	$ 52.63	1.00
Commercial	$ 368,421,053	7,000,000	900,000,000	35.2%	52.63	1.00
Transportation	$ 105,263,158	2,000,000	400,000,000	54.8%	52.63	1.00
Total	$ 1,000,000,000	19,000,000	2,400,000,000	34.6%	$ 52.63	1.00

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Allocation of System Peak Day Capacity

Peak Day Capacity (CCF) = 18,744,947

Peak & Average Allocation

Rate Schedule	Coincident Peak Day Demand CCF	Average & Peak Allocated Peak Day Capacity CCF	Surplus/(Shortfall) in Allocated Peak Day Capacity CCF	Surplus/(Shortfall) in Allocated Peak Day Capacity %
Non-Heating Residential	78,779	87,429	8,650	11.0%
Residential	8,823,800	8,664,723	(159,077)	-1.8%
Commercial	8,229,751	8,202,764	(26,987)	-0.3%
Transportation	1,612,617	1,790,031	177,414	11.0%
Total	18,744,947	18,744,947	-	0.0%

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Customer Classification of Distribution Mains
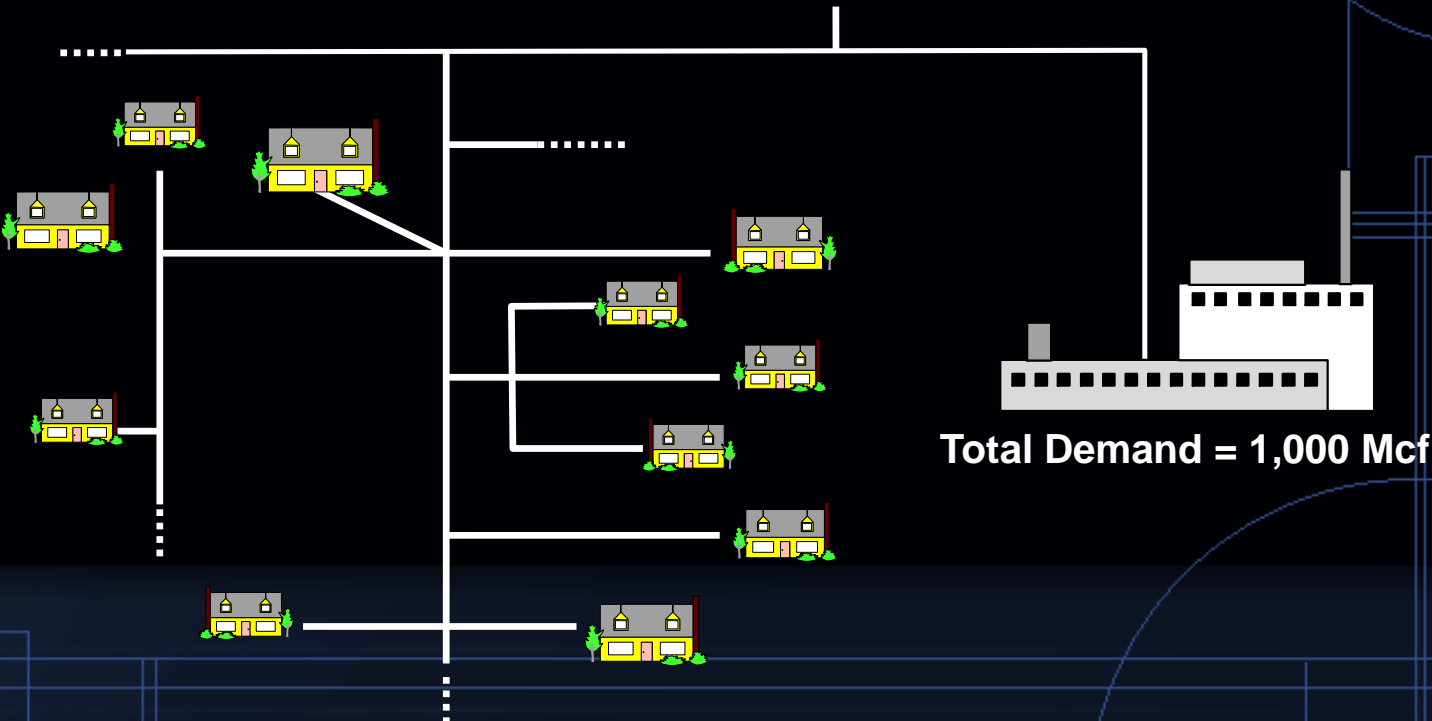
Total Demand = 1,000 Mcf

Total Demand = 1,000 Mcf
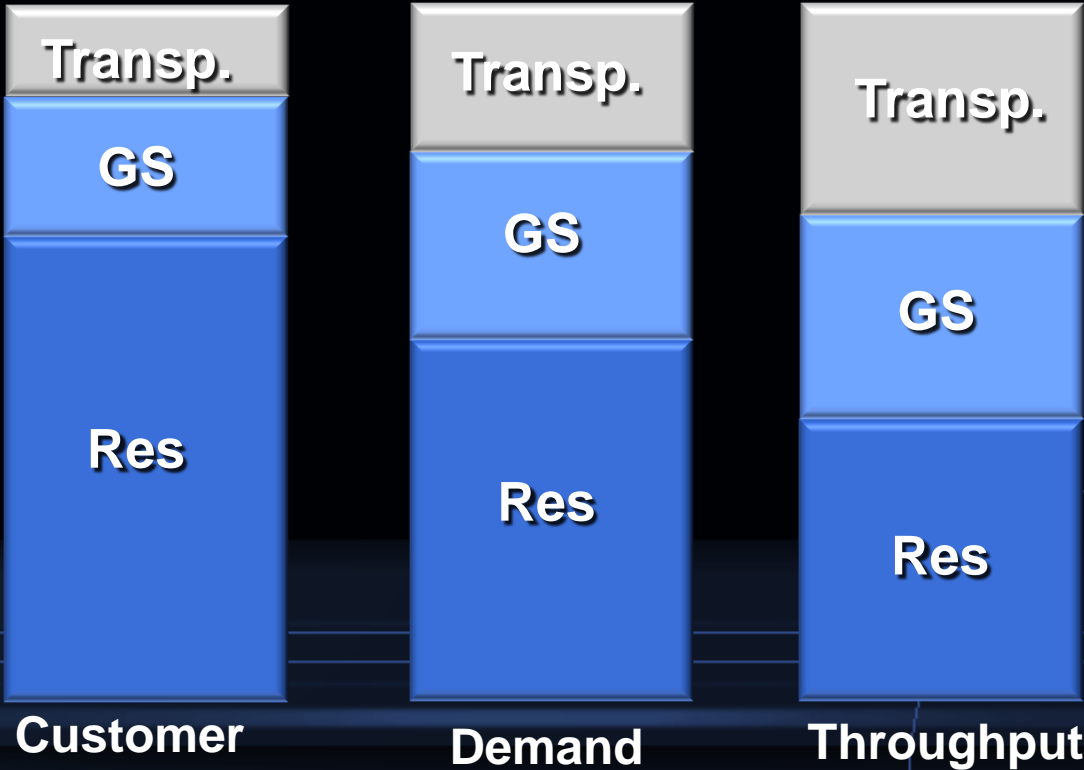
Minimum Distribution Method for Deriving Customer Related Component of Distribution Main

1) Diameter of smallest main   1.5"

2) Cost/foot of 1.5" main $0.61 / ft.

3) Total length of mains   6,385,860 ft.

4) Cost if all mains were
   1.5" diameter $3,988,733

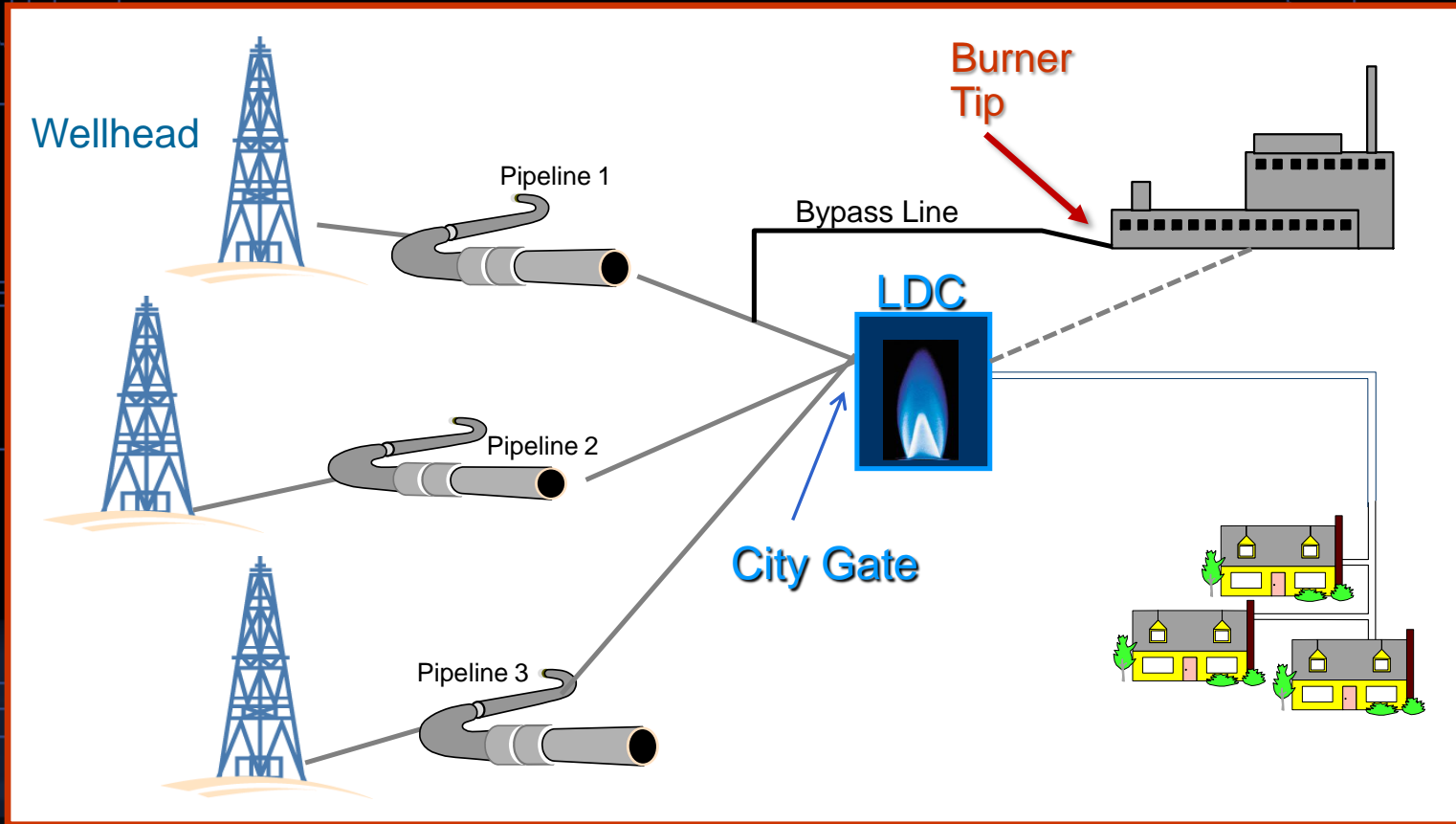5) Actual cost of mains $19,326,453

6) Customer portion
   (4) / (5)   20%

Cost-of-Service Study
Comparison of Allocation Factors

Transp. / **GS** / **Res** — Customer
Transp. / **GS** / **Res** — Demand
Transp. / **GS** / **Res** — Throughput

Bypass of an LDC

Potential Advantages of Bypass

- Lower price

- Deal directly with pipeline

- Decrease state regulation

- Choice of service

- Sometimes alternate pipeline supplier

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Potential Disadvantages of Bypass

- Only one pipeline supplier

- No LDC backup or storage service

- LDC may have excess capacity

- LDC services eliminated

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Bypass can often be prevented by cost-based rates