

2023 Manufacturing Workforce Trends Survey[©]



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Introduction

The Manufacturers Alliance is pleased to present *The Workforce Trends Survey – 2023*.

This survey covers issues of critical importance to Minnesota manufacturing firms and summarizes comments from 203 companies with a combined total of over 97,000 employees. Participating firms have on average 486 employees (median 140 employees) and an average annual revenue of \$266.9 million (median annual revenue of \$44.1 million).

A list of participating companies is included in the last section of this report.

Employee Turnover Rates

In this section, participants reported information on turnover rates over the last 12 months for:

- Voluntary separations (employee makes the decision to leave the company).
- Involuntary separations (company asks employee to leave the company for performance or layoffs).
- Total turnover rates (separations for any reason).

Total turnover rates reported in 2023 – on average across all groups – are similar to those reported in 2022 (26.2%). See the tables below for details reported by industry group and termination type. Industries where zero participants reported turnover data are not included in the tables.

Voluntary Separations

Industry Group	# Firms Reporting	25 th Percentile	Average	Median	75 th Percentile
All Industry Groups	189	11.0%	20.0%	17.5%	24.0%
Food & Kindred Products	6	19.1%	31.7%	25.7%	36.2%
Textile Mill Products	1	*	*	*	*
Lumber & Wood ex Furniture	6	19.3%	25.9%	26.5%	31.3%
Furniture & Fixtures	3	*	*	*	*
Paper & Allied Products	1	*	*	*	*
Printing, Publishing & Allied	10	8.7%	18.4%	14.7%	25.4%
Chemicals & Allied Products	8	13.9%	23.1%	21.7%	31.8%
Rubber & Plastic Products	23	17.8%	22.9%	20.7%	23.6%
Stone, Clay, Glass & Concrete Products	2	*	*	*	*
Primary Metal Industries	11	14.5%	19.8%	18.0%	22.1%
Fabricated Metal Products	54	9.0%	19.4%	17.0%	23.8%
Industrial Machinery Computer Equip	16	10.0%	14.8%	13.2%	20.1%
Electronic & Other Electrical	12	12.8%	18.4%	15.2%	21.5%
Transportation Equipment	1	*	*	*	*
Measur, Anal & Control Instruments	6	12.9%	14.5%	16.2%	17.8%
Misc Manufacturing Industries	29	10.0%	19.8%	17.0%	22.6%

Involuntary Separations

Industry Group	# Firms Reporting	25 th Percentile	Average	Median	75 th Percentile
All Industry Groups	189	2.0%	6.3%	4.6%	7.9%
Food & Kindred Products	6	9.7%	15.0%	11.7%	17.6%
Textile Mill Products	1	*	*	*	*
Lumber & Wood ex Furniture	6	5.0%	7.9%	8.0%	12.1%
Furniture & Fixtures	3	*	*	*	*
Paper & Allied Products	1	*	*	*	*
Printing, Publishing & Allied	10	3.7%	6.8%	4.4%	8.7%
Chemicals & Allied Products	8	2.3%	4.2%	3.5%	4.6%
Rubber & Plastic Products	23	2.9%	7.1%	5.0%	7.9%
Stone, Clay, Glass & Concrete Products	2	*	*	*	*
Primary Metal Industries	11	2.3%	6.3%	5.0%	9.0%
Fabricated Metal Products	54	0.6%	6.3%	3.4%	6.4%
Industrial Machinery Computer Equip	16	1.0%	4.4%	3.5%	6.9%
Electronic & Other Electrical	12	0.8%	4.5%	3.9%	7.0%
Transportation Equipment	1	*	*	*	*
Measur, Anal & Control Instruments	6	1.1%	9.0%	1.9%	14.7%
Misc Manufacturing Industries	29	3.0%	6.0%	5.0%	7.0%

Total Separation Rates (Voluntary & Involuntary)

Industry Group	# Firms Reporting	25 th Percentile	Average	Median	75 th Percentile
All Industry Groups	189	16.0%	26.3%	23.0%	33.1%
Food & Kindred Products	6	31.9%	46.6%	37.1%	45.9%
Textile Mill Products	1	*	*	*	*
Lumber & Wood ex Furniture	6	31.1%	33.8%	34.5%	38.8%
Furniture & Fixtures	3	*	*	*	*
Paper & Allied Products	1	*	*	*	*
Printing, Publishing & Allied	10	13.0%	25.2%	21.8%	31.6%
Chemicals & Allied Products	8	18.2%	27.3%	23.3%	35.0%
Rubber & Plastic Products	23	23.0%	30.1%	25.5%	38.0%
Stone, Clay, Glass & Concrete Products	2	*	*	*	*
Primary Metal Industries	11	18.1%	26.1%	24.0%	30.8%
Fabricated Metal Products	54	15.2%	25.6%	21.5%	31.5%
Industrial Machinery Computer Equip	16	13.3%	19.2%	19.5%	23.3%
Electronic & Other Electrical	12	12.9%	22.9%	22.8%	30.3%
Transportation Equipment	1	*	*	*	*
Measur, Anal & Control Instruments	6	19.1%	23.4%	19.5%	28.2%
Misc Manufacturing Industries	29	13.0%	25.8%	22.0%	29.1%

General Comments

If you have any questions about this report or any of the data reported, feel free to contact the survey sponsor directly:

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Manufacturers Alliance
 763-533-8239
 kirbys@mfrall.com

Compensation Practices

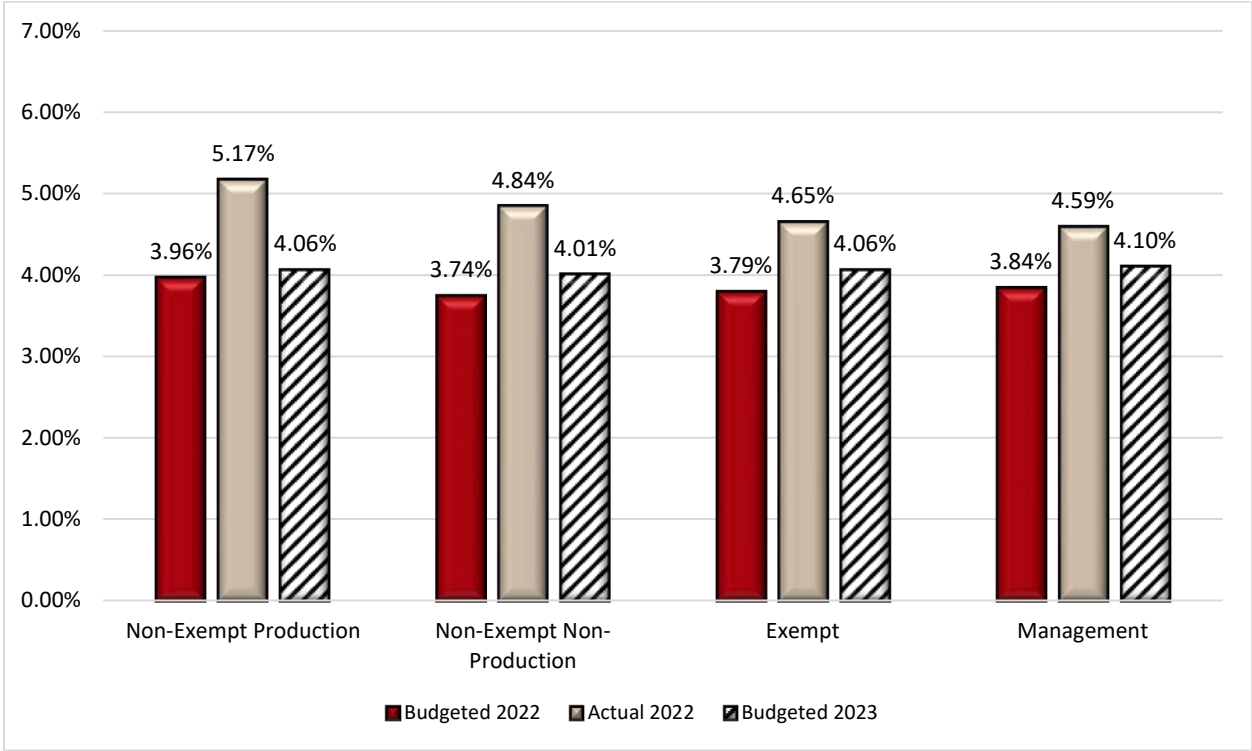
Compensation Adjustments

Average Percent Wage/Salary Adjustment

Participating companies reported actual 2022 and budgeted 2023 pay increases by employee group. The average budgeted 2022 pay increase data are from last year’s survey results. See details in the table and chart below.

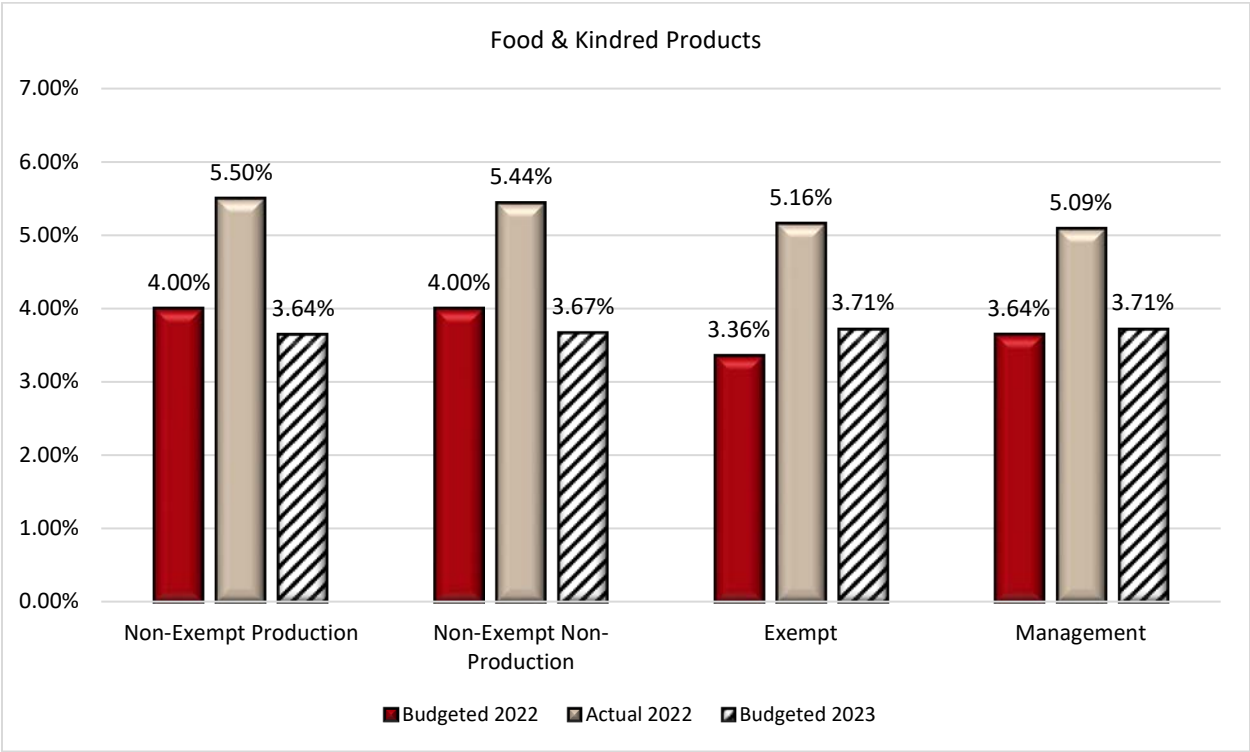
Note the results in the chart following the table exclude firms reporting no planned pay adjustments (zero percent).

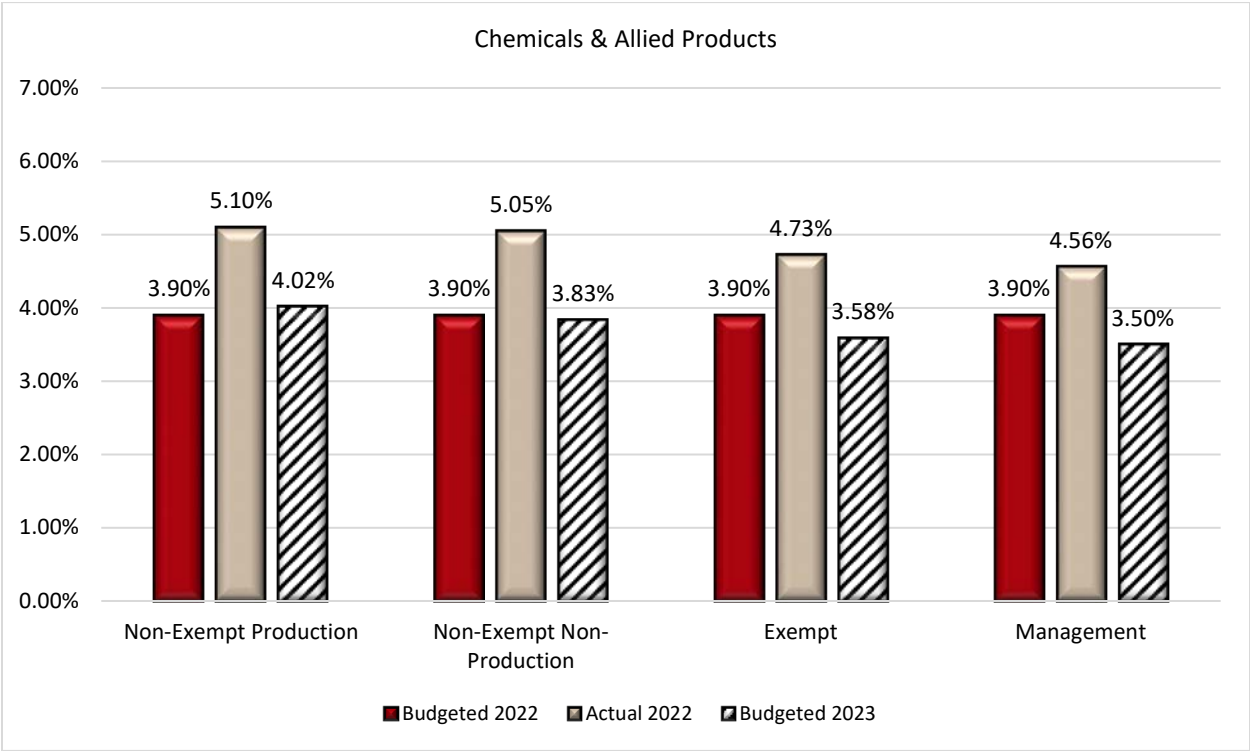
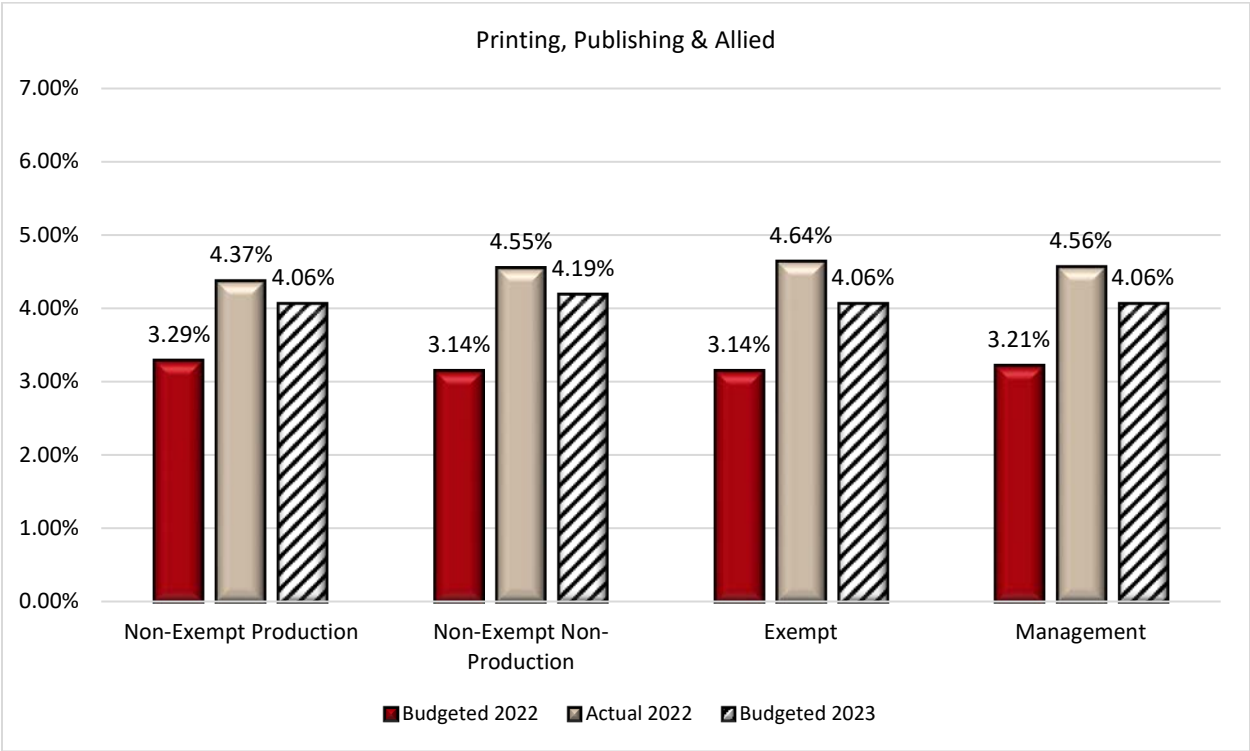
Employee Group	Pay Adjustments INCLUDING Zero (0%) Adjustments			Pay Adjustments EXCLUDING Zero (0%) Adjustments		
	# Firms Reporting	Average	Median	# Firms Reporting	Average	Median
NEx Production – Budgeted 2022	184	4.0%	3.0%	184	4.0%	3.0%
NEx Production – Actual 2022	190	5.1%	4.0%	188	5.2%	4.1%
NEx Production – Budgeted 2023	178	4.0%	4.0%	177	4.1%	4.0%
NEx Non-Production – Budgeted 2022	178	3.7%	3.0%	178	3.7%	3.0%
NEx Non-Production – Actual 2022	183	4.8%	4.0%	181	4.8%	4.0%
NEx Non-Production – Budgeted 2023	173	4.0%	4.0%	172	4.0%	4.0%
Exempt – Budgeted 2022	182	3.8%	3.0%	182	3.8%	3.0%
Exempt – Actual 2022	189	4.5%	4.0%	182	4.6%	4.0%
Exempt – Budgeted 2023	177	4.0%	4.0%	174	4.1%	4.0%
Management – Budgeted 2022	177	3.7%	3.0%	173	3.8%	3.0%
Management – Actual 2022	180	4.3%	4.0%	170	4.6%	4.0%
Management – Budgeted 2023	172	4.0%	4.0%	166	4.1%	4.0%

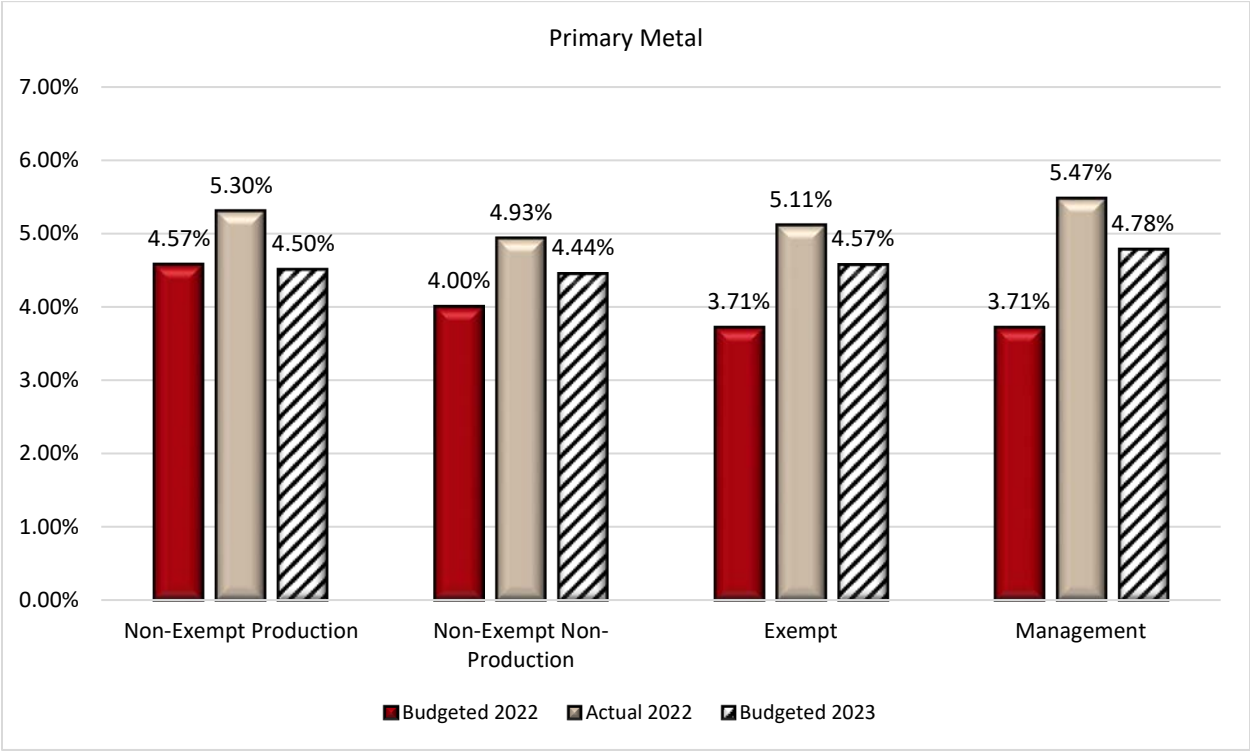
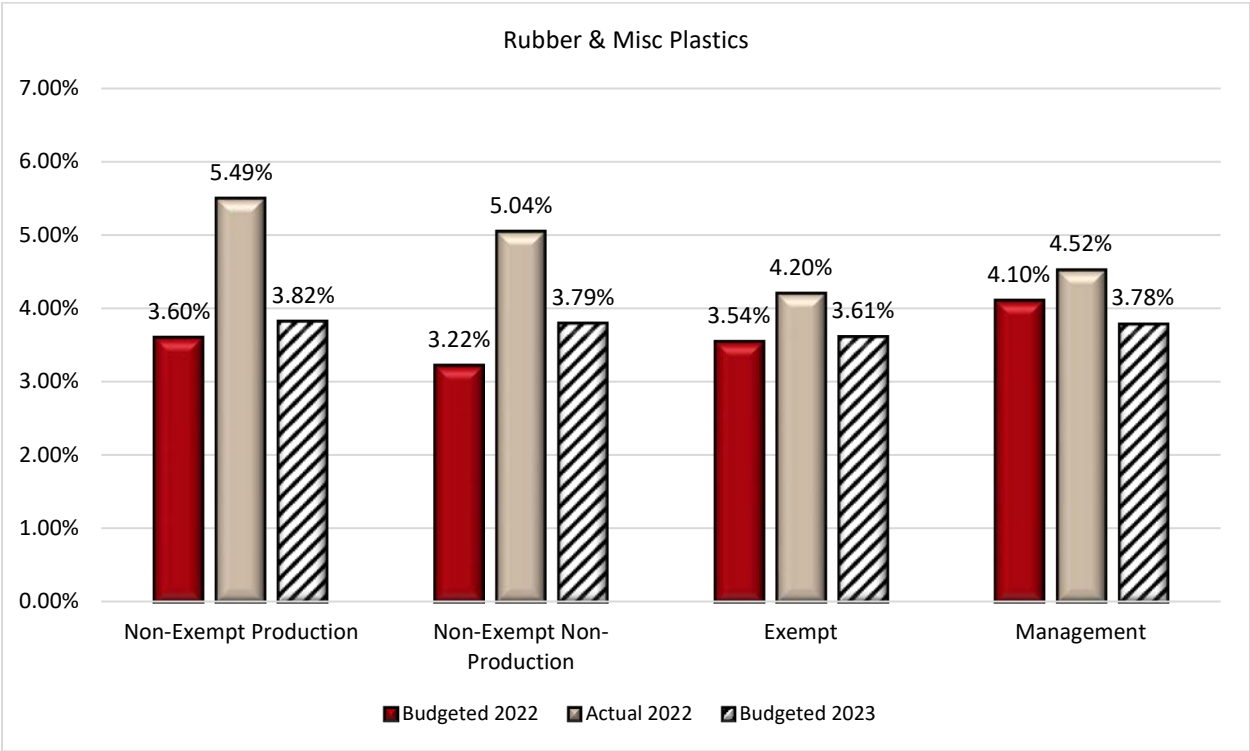


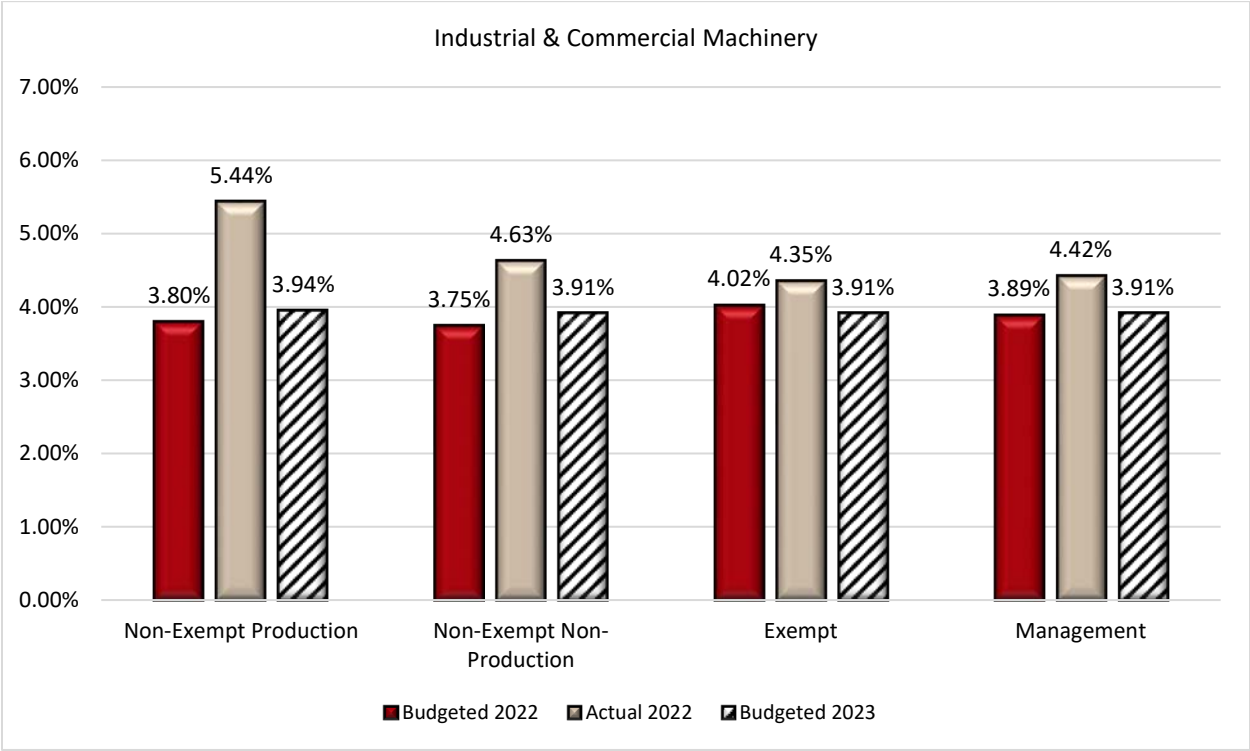
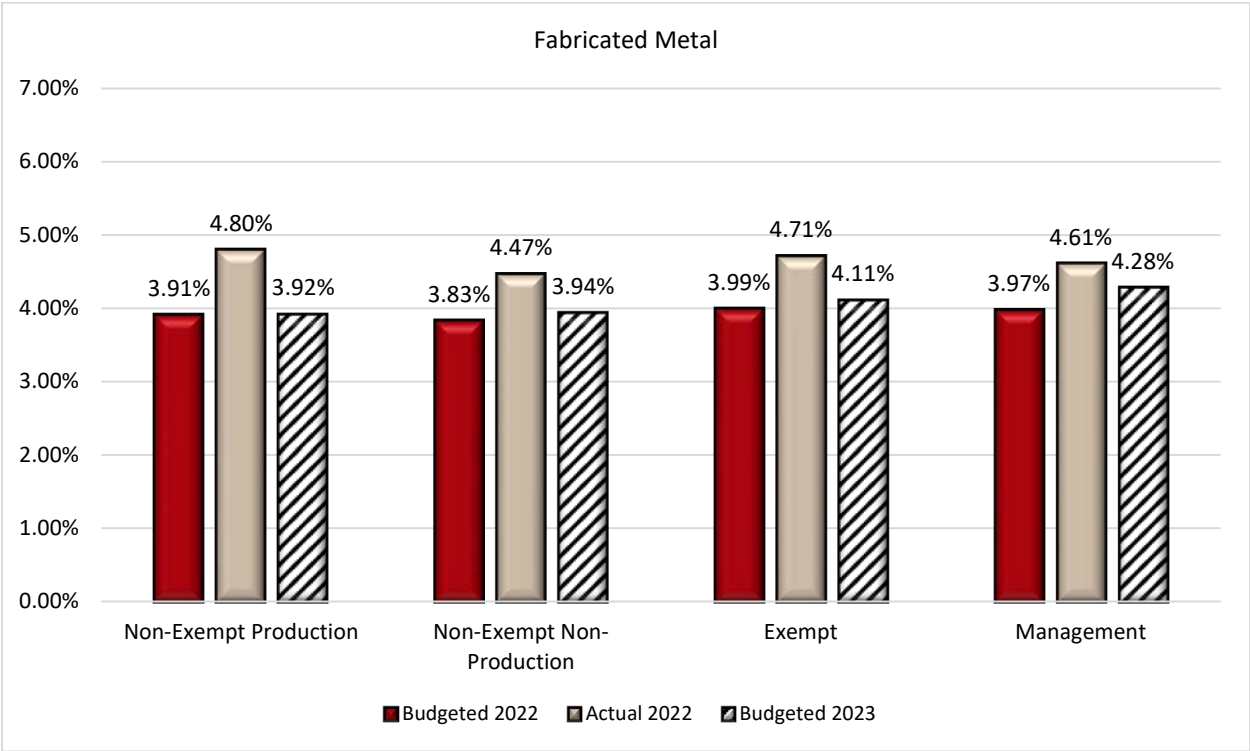
Average Percent Wage/Salary Adjustment by Industry

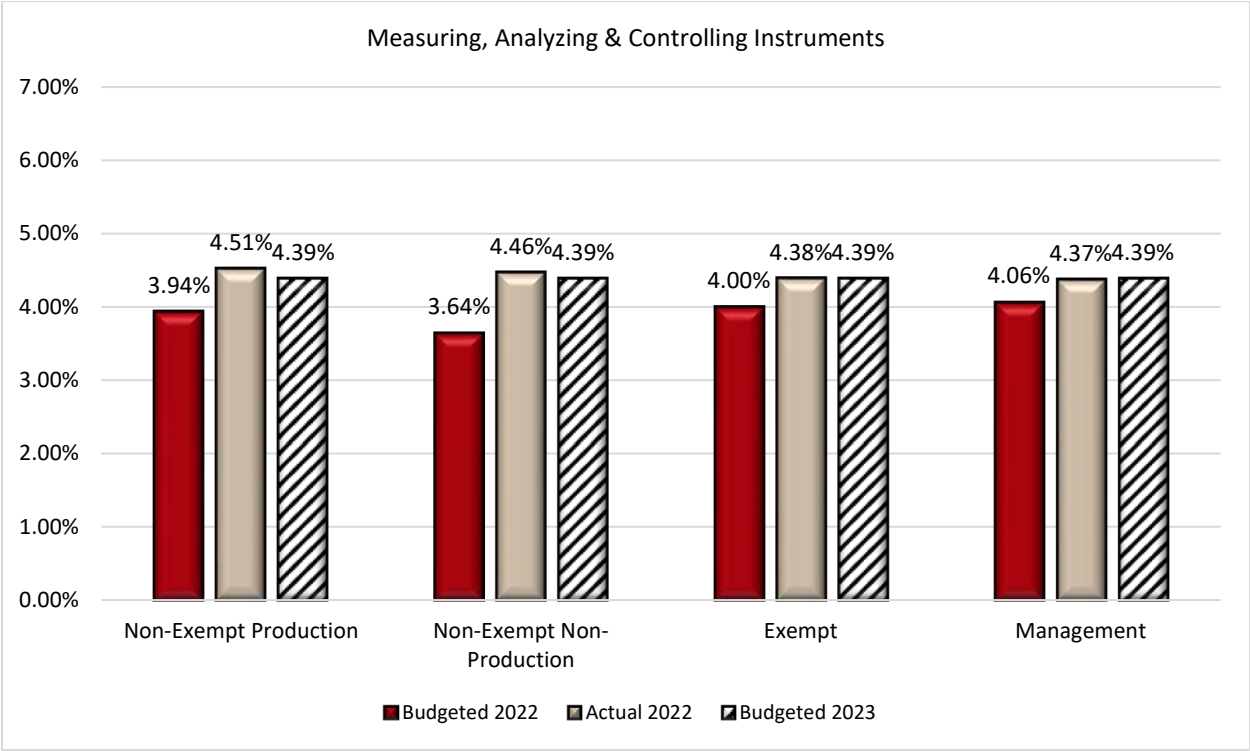
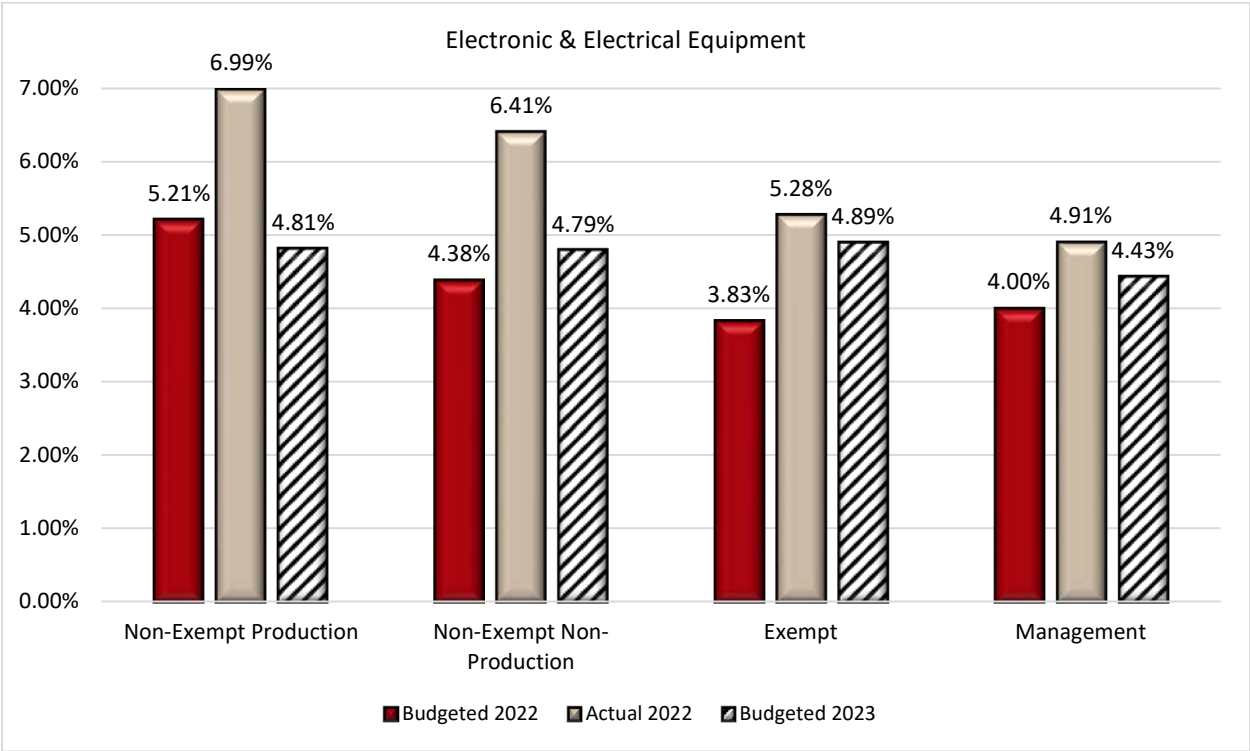
The following eleven charts indicate the average percent pay adjustments, including (as reportable) budgeted 2022, actual 2022 and budgeted 2023, by industry. Average budgeted 2022 pay increase data are from last year's results. Adjustments exclude zero percent reported adjustments. Results are not shown for industries where fewer than five participants reported information.

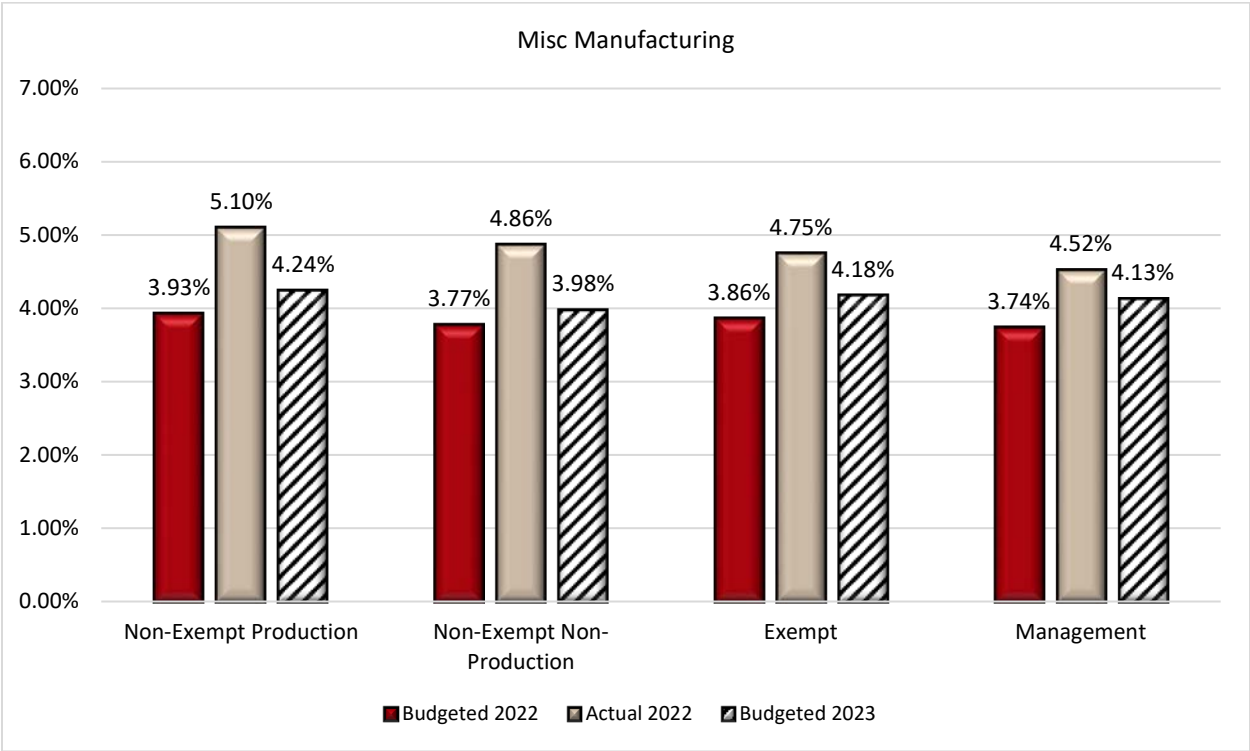












Workforce Trends

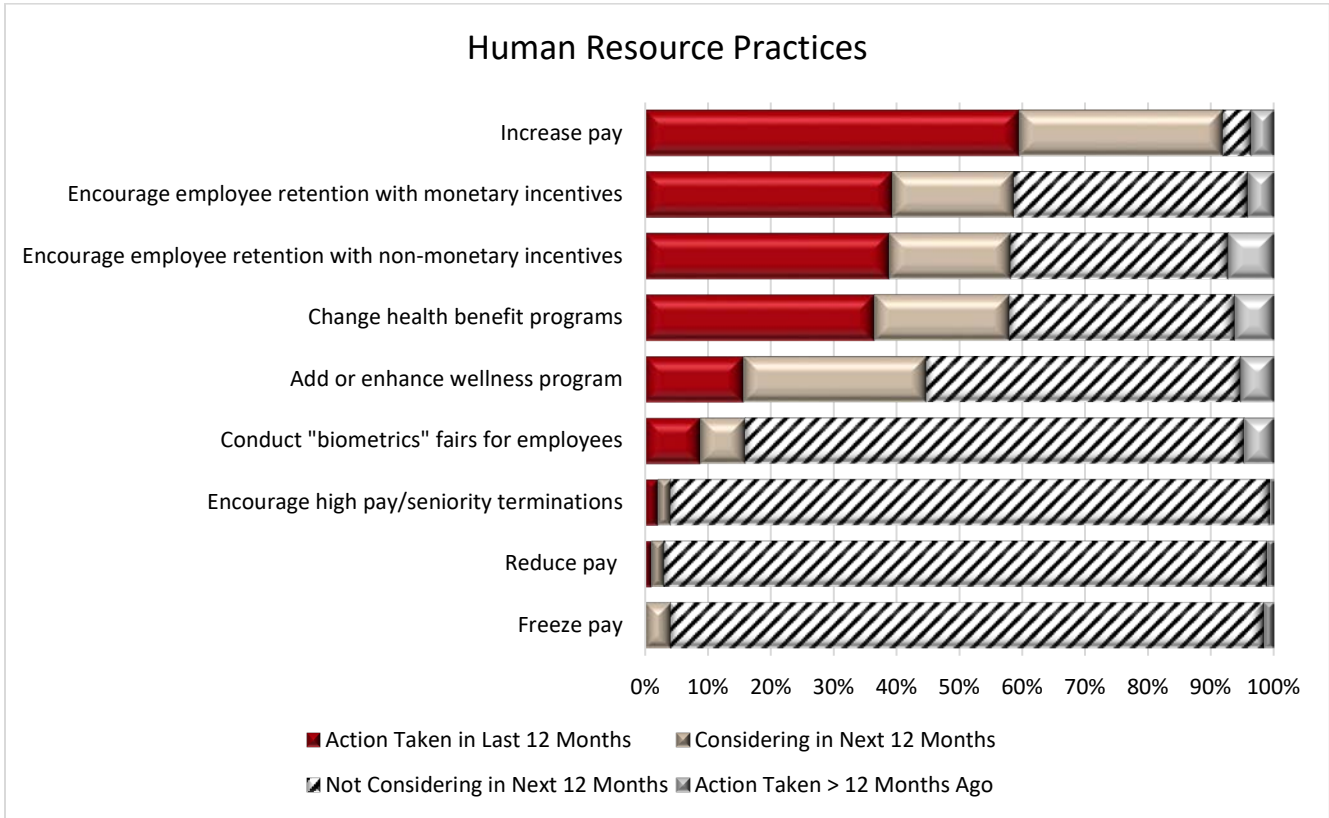
Management Practices

Survey participants indicated from a list of general management trends whether each trend was put in place over the past 12 months, under consideration for putting in place in the next 12 months, not under consideration for implementation, or put in place more than 12 months ago. We have seen some movement in practice trends revealed in these questions, this year and last, which suggests aspects of management in manufacturing companies may be shifting back toward pre-pandemic norms.

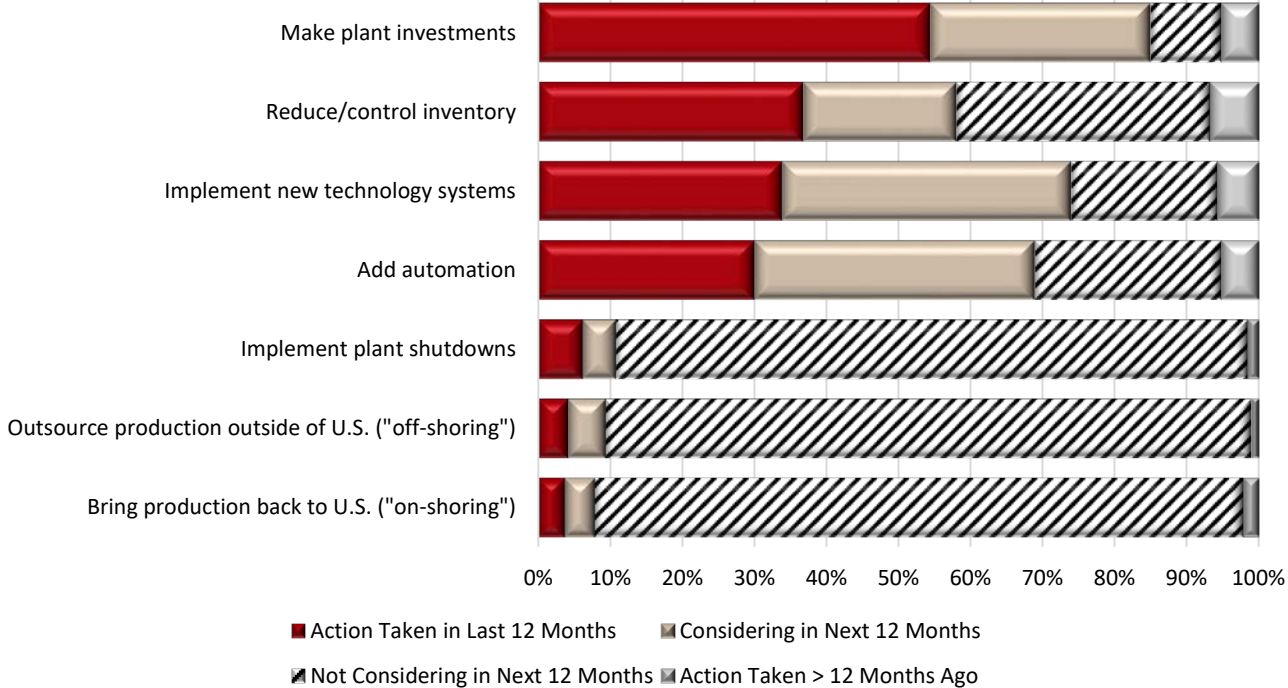
The list below highlights top actions taken in the 2022 or being considered for 2023 across all practice categories.

- Human Resources Practices:** Continuing a trend that predates the pandemic, increasing employee pay remains the top action taken in the last 12 months and being considered in the next 12, which undoubtedly reflects the recruiting and retention challenges faced in today’s labor market. In fact, we’ve seen the same top four actions being planned and considered since 2020, with some minor shuffling inside that group. We note that no participants report freezing pay in last 12 months, when this was among the top five in 2020.
- Operations-Related Practices:** Reducing/controlling inventory and making plant investments, which have held the first two places for actions taken in the last 12 months for the past 4 years, are once again at the top of the chart, with the order shifting this year and last to feature plant investments in first place. Implementing new technology and adding automation are the top two considerations for the next 12 months.
- Policy-Related Practices:** While increasing the use of teleconferencing/videoconferencing remains in top place for actions taken in the last 12 months, very few are considering this for the next 12 months. We also see that allowing non-production employees to work remotely has dropped from second place in the past 2 years to fourth in this survey cycle.

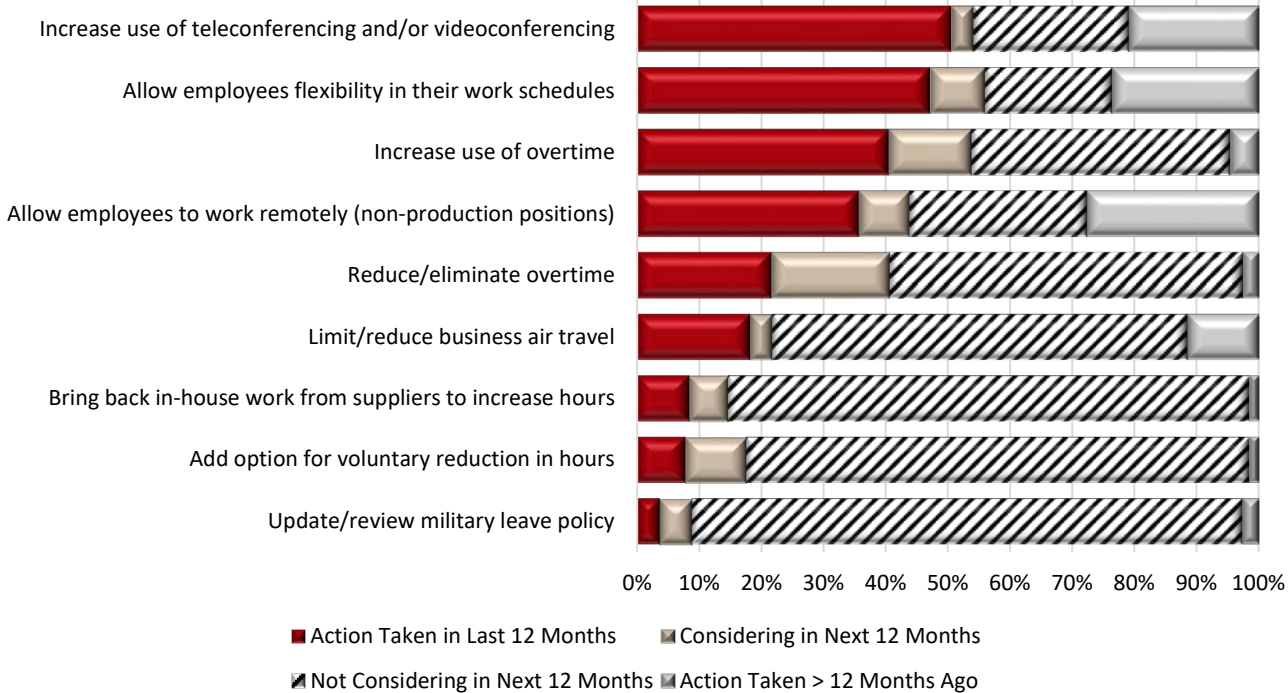
See the following charts for details.



Operations-Related Practices



Policy-Related Practices

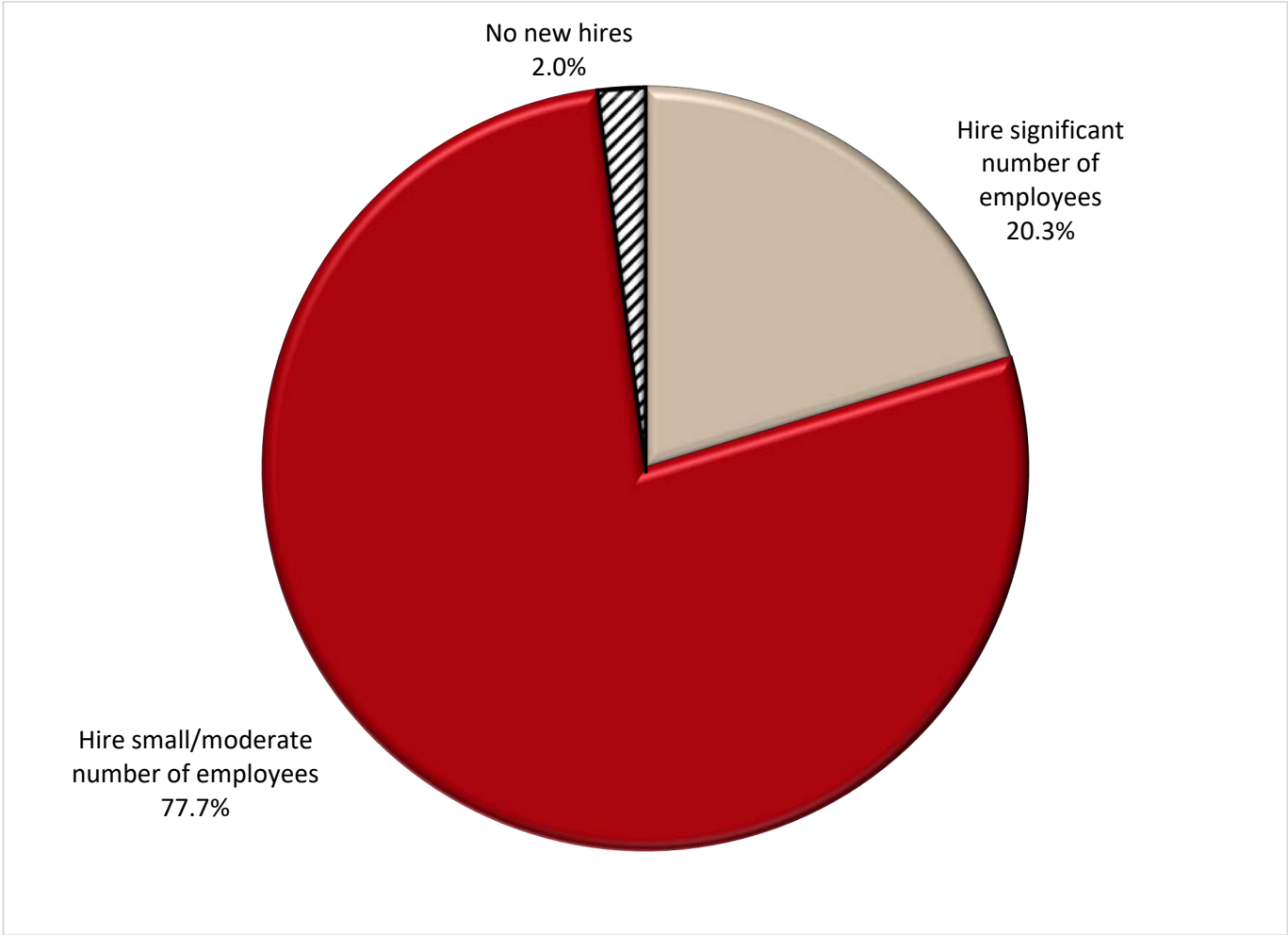


Workforce Practices

Hiring Plans in 2023

While hiring remains a clear priority, with the percent of participants reporting plans to hire in the coming year increasing from 92.7% in 2021 to 98.5% in 2022 and staying relatively steady at 98.0% in 2023, we do see a drop in those planning to hire a *significant* number of employees from 30.1% in 2022 to 20.3% in 2023.

The chart below summarizes these hiring plans.

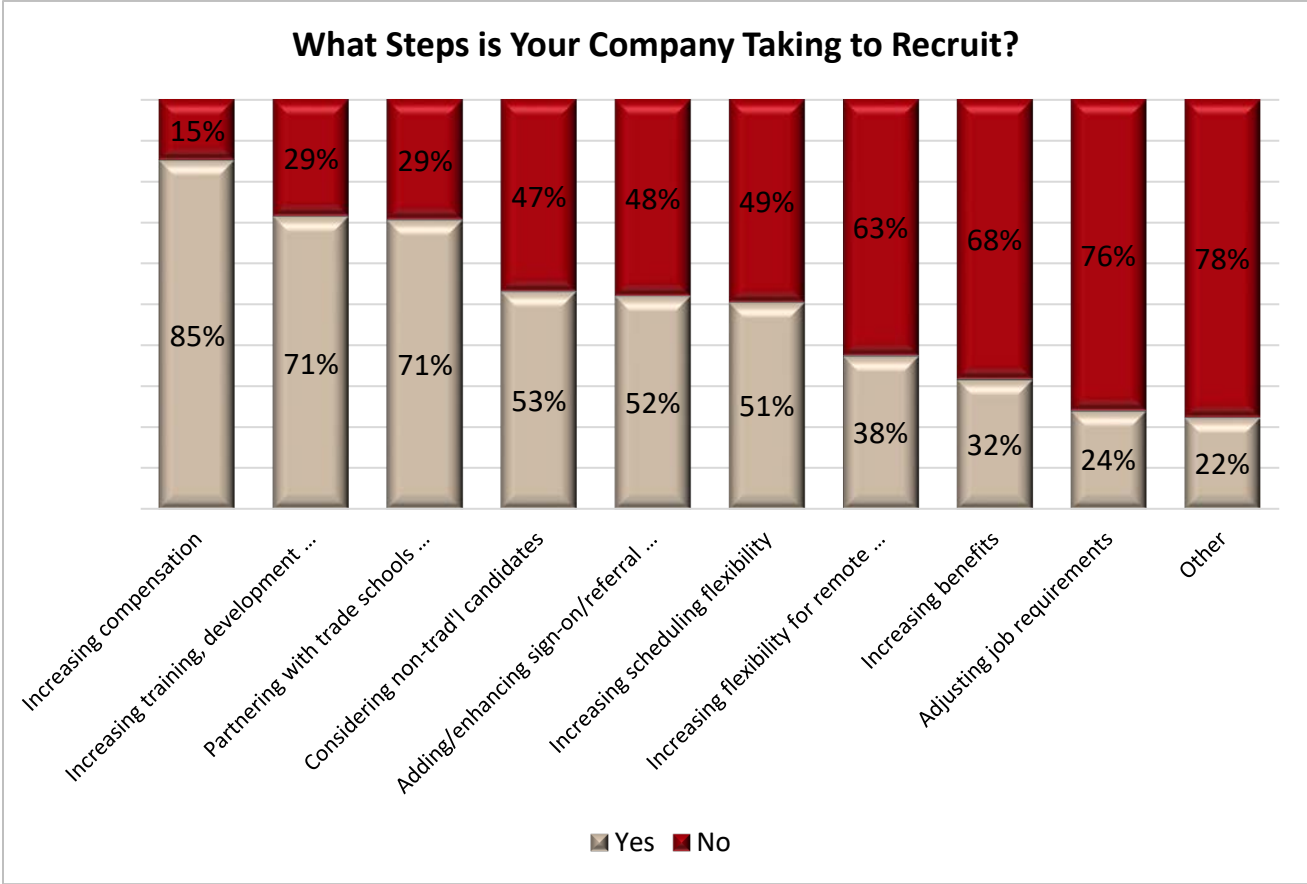


Steps Being Taken to RECRUIT Employees

Participants this year responded to a list of potential steps (noted below) being taken to recruit employees in the current labor market, indicating which ones they are taking, sharing any “other” steps they are pursuing and reporting whether their steps are having an impact on recruitment.

- Increasing compensation
- Increasing benefits
- Increasing scheduling flexibility
- Increasing flexibility for remote work
- Increasing training, development and/or mentoring opportunities
- Adding or enhancing sign-on or referral bonuses
- Adjusting job requirements
- Considering of non-traditional candidates
- Partnering with trade schools, colleges or other entities

The chart immediately below summarizes the prevalence of the different steps among participating companies and the chart that follows it highlights their responses about whether each step taken is having an impact on recruiting success. Observations about the findings are presented on the next page.





Other Recruiting Steps Reported:

- Recruiting dislocated workers and/or individuals with disabilities – 2 participants (having impact).
- Implementing a perfect attendance bonus – 1 participant (having impact).
- Adding PTO for overtime hours worked – 1 participant (having impact).
- Recruiting veterans – 1 participant (having impact).
- Supporting relocation – 1 participant (having impact).
- Implementing production bonuses – 1 participant (too soon to tell).
- Tightening up requirements to increase quality of hires – 1 participant (too soon to tell).
- Recruiting from Puerto Rico – 1 participant (not having impact).
- Utilizing temp to hire – 1 participant (impact not reported).
- Hiring interns – 1 participant (impact not reported).

In reviewing the findings about recruiting steps that participants are taking in today’s labor market, it’s interesting to compare the steps chosen by the most companies with those where the companies are seeing the greatest potential impact. The table below highlights the top five most popular recruiting steps and the five steps that are reported as having the highest impact on recruiting so far. Only one step appears in the top five of both lists: increasing compensation. Increasing compensation is in a four-way tie for the step having the greatest impact with two that emphasize increased flexibility (for remote work and scheduling) and the use of sign-on/referral bonuses.

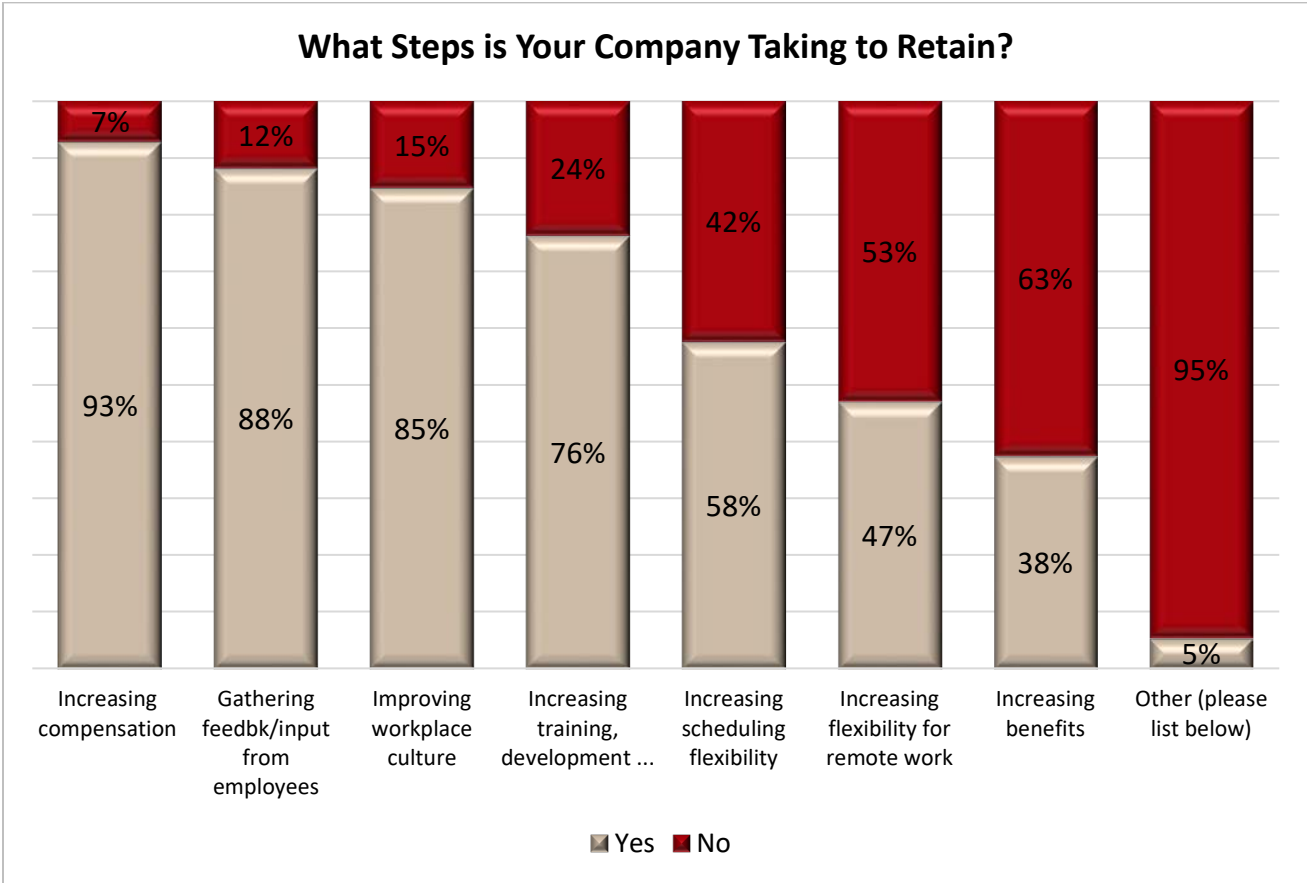
Most Popular Steps	% Firms Rptg	Steps with Greatest Impact	% Firms Rptg
Increasing compensation	85%	Increasing flexibility for remote work	62%
Increasing training, development and education	71%	Increasing compensation	62%
Partnering with trade schools and community colleges	71%	Adding/enhancing sign-on/referral bonuses	62%
Considering of non-traditional candidates	53%	Increasing scheduling flexibility	62%
Adding/enhancing sign-on/referral bonuses	52%	Other	50%

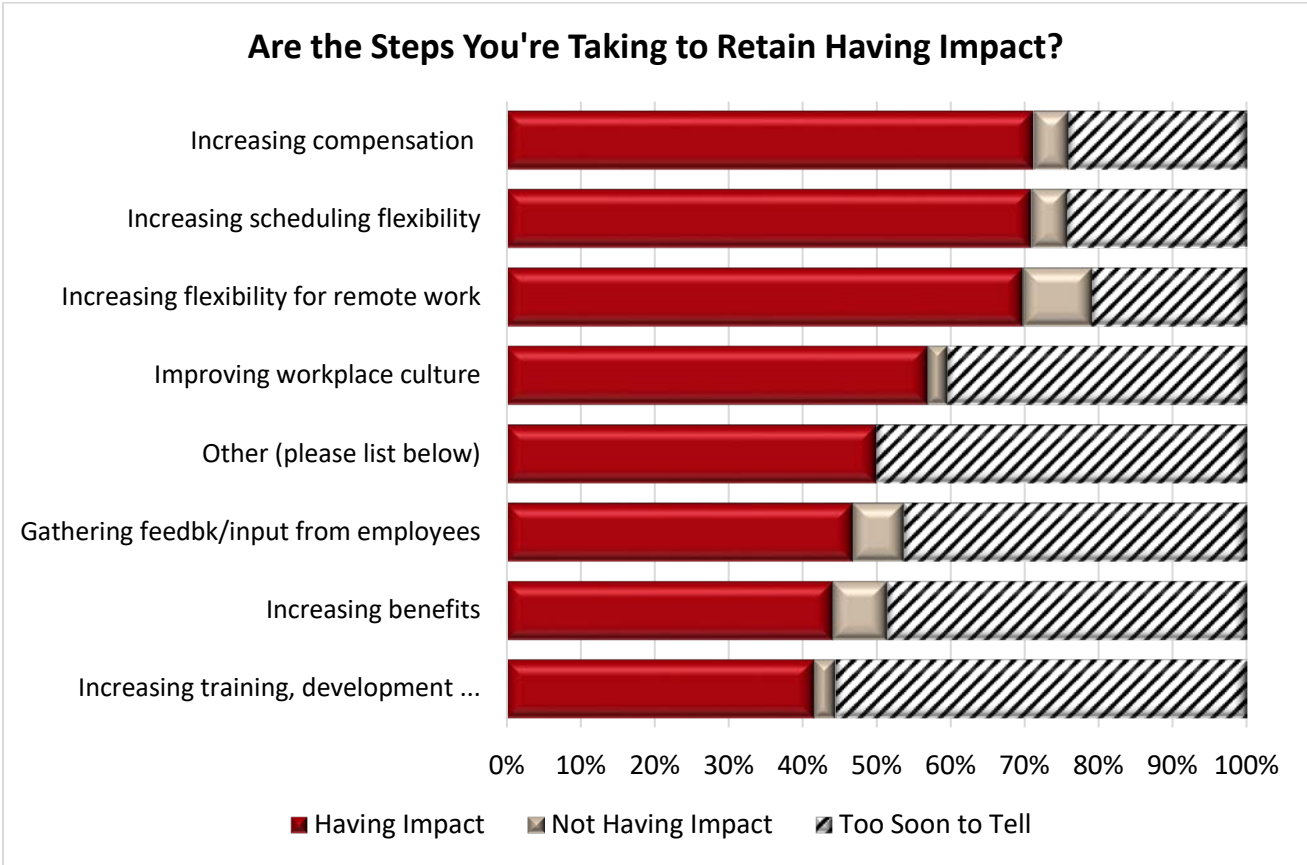
Steps Being Taken to RETAIN Employees

Participants this year responded to a list of potential steps (noted below) being taken to retain employees in the current labor market, indicating which ones they are taking, sharing any “other” steps they are pursuing and reporting whether their steps are having an impact on retention.

- Increasing compensation
- Increasing benefits
- Increasing scheduling flexibility
- Increasing flexibility for remote work
- Increasing training, development and/or mentoring opportunities
- Gathering feedback and input from employees
- Improving workplace culture

The chart immediately below summarizes the prevalence of the different steps among participating companies and the chart that follows it highlights their responses about whether each step taken is having an impact on retention success. Observations about the findings are presented on the next page.





Other Retention Steps Reported:

- Implementing a perfect attendance bonus – 1 participant (having impact).
- Adding PTO for overtime hours worked – 1 participant (having impact).
- Giving a retention bonus to all non-managerial employees – 1 participant (too soon to tell).

In reviewing the findings about retention steps that participants are taking in today’s challenging labor market, it’s interesting (as it was with the recruiting steps) to compare the steps chosen by the most companies with those where the companies are seeing the greatest potential impact. The table below highlights the top five most popular retention steps and the five steps that are reported as having the highest impact on retention so far. We see more overlap between the two sets here than we did for recruitment; three of the five most popular steps are also among the steps with the greatest impact. In addition to increasing compensation, we see steps associated with scheduling flexibility and improving workplace culture featured in both sets. It’s also interesting to see that while increasing compensation is the most popular step identified for both recruiting and retaining employees, participants report higher compensation as having a more observable impact on retention success than on recruiting. Finally, we observe that although increasing flexibility for remote work didn’t make the top five most popular steps taken, it is among a tight top three in impact observed.

Most Popular Steps	% Firms Rptg	Steps with Greatest Impact	% Firms Rptg
Increasing compensation	93%	Increasing compensation	71%
Gathering feedback/input from employees	88%	Increasing scheduling flexibility	71%
Improving workplace culture	85%	Increasing flexibility for remote work	70%
Increasing training, development ...	76%	Improving workplace culture	57%
Increasing scheduling flexibility	58%	Other	50%

Positions Affected by Compensation Increases

Those participants who reported increasing compensation as a step being taken to recruit or retain employees in today's labor market were also asked which positions are being affected by the increase. 66.1% of these organizations reported that the increase of compensation affects all positions company-wide. 40.6% reported that the increase affects certain positions and skills. The second group was asked to note which positions and skills are impacted by the increases; those positions are reported below either in the table (which features the positions and skills reported by 5 or more participants) or the list of other mentions that follows.

Hourly production positions were the most frequently reported by a substantial margin.

Top Reported Positions and Skills	# Firms Reporting
Hourly Production	28
Engineering	10
Machinists/Machine Operators	6
Skilled Trades	6
Technical/Technicians	6
Welders	4

Other Positions and Skills (mentioned by 3 or fewer companies):

- CNC Positions
- Distribution
- Epicor Positions
- Fabrication
- IT Positions
- Mixers
- Non-Exempt Positions
- Sales
- Truck Drivers
- Warehouse
- Customer Service
- Entry Level Positions
- Executives/Directors
- Hourly Positions
- Maintenance
- Non-Union Positions
- Office Staff
- Supply Chain
- Union Positions
- Welders

Types of Training Being Offered

Those participants who reported increasing training and development opportunities as a step being taken to improve recruitment and/or retention in today's labor market were also asked about the type(s) of training being offered by their companies. A summary of the training offerings reported is presented in the table below.

Type of Training Being Offered	% Firms Reporting
Management/leadership	81%
Technical skills	71%
Compliance/quality	58%
Soft skills	51%
Problem solving	44%
Other	8%

Other Training Being Offered:

- Safety training – 4 participants.
- Production training – 2 participants.
- Leadership training – 2 participants.
- Project management training – 1 participant.

Ideal Number of Direct Reports for Manufacturing Leadership Roles

Participants were asked to report what their company considers to be an ideal number of direct reports for three manufacturing leadership positions. Their responses are presented in the table below.

	# Firms Reporting	25 th Percentile	Average	Median	75 th Percentile
Manager (e.g. Manufacturing Manager, Operations Manager, Production Manager, etc.)	141	5	12	8	10
Supervisor (e.g. Production Supervisor, Shift Supervisor, etc.)	139	10	17	15	20
Lead (e.g., Assembly Lead, Welding Lead, Machine Operations Lead, etc.)	119	5	9	8	10

Survey Participants

Alphabetical Participant List

- 7-SIGMA, Incorporated
- Aagard
- Action Plastics, Inc.
- Advanced Molding Technologies, LLC
- Advanced Volumetric Alliance
- Aggressive Hydraulics, Inc.
- Air Quality Engineering
- Ajax Metal Forming Solutions, LLC
- American Flexible Products, Inc.
- American Time and Signal Company
- Amerilab Technologies, Inc.
- Analog Technologies Corporation
- Andersen Corporation
- Anderson Dahlen, Inc.
- Andrew Tool & Machining Company
- Apex International
- APG Cash Drawer
- Arc Precision
- ARKRAY
- Artistic Finishes, Inc.
- Astro Metal Craft
- Atlas Manufacturing
- Aurora Pharmaceutical
- Aveda Corporation
- AVEKA Group, Inc.
- AWT Labels & Packaging
- Banner Engineering
- Beacon EmbeddedWorks
- Beacon Engineered Solutions
- Bermo
- Biomerics
- Birchwood Laboratories
- Bondhus Corporation
- Bowman Tool & Machining Inc.
- Branches LLC
- Brenk Brothers Inc.
- BTD
- C4 Welding, Inc.
- Cadrex Manufacturing Solutions
- Caerus Corporation
- Carley Foundry, Inc.
- C-Axis
- Ceramic Industrial Coatings
- Chandler Exhibits Inc.
- Chandler Industries
- Clarus Medical/Laser Peripherals/Urologix
- Clean Air Products
- ClearEdge Filtration Inc.
- Clearfield, Inc.
- Cloth & Clay, Inc. dba Deneen Pottery
- Conagra Brands
- Conagra Brands - Mankato
- Continental Machines dba DoALL Sawing Products
- CreteX Companies, Inc.
- Crystal Distribution Inc.
- Custom Products of Litchfield, Inc.
- CWMF Corporation
- Dahlgren Enterprises, Inc.
- Daikin Applied Americas, Inc.
- Daktronics, Inc.
- Danfoss Power Solutions II LLC
- Data Metalcraft, Inc.
- DCI, Inc.
- Dedicated Networks, Inc.
- Designer Products LLC dba Cambek
- Diamond Graphics, LLC
- Diversified Plastics, Inc.
- Door Engineering
- DriSteem Corporation
- Dynamic Sealing Technologies, Inc.
- E.A. Sween
- EDCO Products
- Electronic Systems, Inc.
- Elemet Group, Inc.
- Ellicott Dredge Technologies
- EMERGE Enterprises
- Engage Technologies Corporation
- Engineered Products Company
- ENPOINTE dba GLS Companies, Inc.
- FAST Global Solutions, Inc.
- FasTest, Inc.
- Featherlite Trailers
- Federal Package Network, Inc.
- FlexMation, Inc.
- Gemini, Inc.
- General Label, Inc.
- Global Finishing Solutions
- Gopher Resource
- Graco Inc.
- Granger Machine Inc.
- Grede LLC
- H.B. Fuller
- Health Systems Cooperative Laundries
- Horton Inc.
- Hutchinson Technology Incorporated
- IDC Group, Inc. dba IDC Spring
- ILLUME Holding Company
- Incertec
- Industrial Netting Inc.
- Innovance, Inc.
- InTech Industries Inc.
- Intek Plastics
- IPS Cranes, Inc.
- J&B Group, Inc.

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- Continental Engineering & Manufacturing
- Jet Edge Waterjet Systems
- Johnson Screens Inc.
- Jonaco Machine
- Kasco Marine, Inc.
- Kendall Howard, LLC
- Kurt Manufacturing
- La Machine Shop, Inc.
- Lake Air Products
- Le Sueur Incorporated
- Lexington Manufacturing
- Life Fitness
- LimPro Metal Fabrication
- Liquibox Corporation
- LISI Medical Remmele
- LJP Waste Solutions
- M & N Structures, Inc.
- Malco Products, SBC
- Marshall Screw Products dba Marshall Manufacturing Company
- MAS HVAC
- Massman Companies
- Mate Precision Technologies
- Mathias Die Company
- Micro Control Company
- Midwest Rubber Service & Supply
- Mikros Engineering, Inc.
- Minnesota Grinding
- MME Group, Inc.
- MNY Group LLC
- Modern Molding Inc.
- MRG Tool and Die
- National Checking Company
- Navy Island, Inc.
- New Team LLC
- Nortech Systems
- North Star Imaging
- Nystrom
- Olsen Tool & Plastics, Inc.
- Olympus Corporation of the Americas
- Pallet Service Corporation
- Park Industries
- Phillips & Temro Industries, Inc.
- PHS West, LLC
- Plato Woodwork, Inc.
- Plymouth Industries, Inc.
- PNE Inc. dba IRD Glass dba IRD Ceramics
- Polaris Industries
- Power/mation
- Precision Associates, Inc.
- Precision Coatings Inc.
- JEM Technical
- Precision Gasket Company dba PGC
- Premier Marine
- Premium Waters, Inc.
- Prima Power Laserdyne LLC
- Priority Envelope
- Process Displays LLC
- Product Development Solutions, Inc.
- Production Engineering Corporation
- QualiTech Inc.
- Quanex
- RAO Manufacturing
- Rapid Packaging, Inc.
- RC Smith Company
- Reviva, Inc.
- Rice Lake Weighing Systems
- Rosemount Inc. & Rosemount Nuclear Inc.
- Rotation Engineering & Manufacturing Company
- Schreiber Foods
- Showdown Displays
- Sportech, LLC
- SPS Works
- T.O. Plastics
- Tclad, Inc.
- Tennant Company
- Tescom Corporation
- The Imagine Group
- The Smead Manufacturing Company
- The Specialty Manufacturing Company
- Thermo-Tech Windows LLC
- Toyko Electron U.S. Holdings, Inc.
- TT Electronics
- Twin City Die Castings Company
- Twin City Plating
- United States Distilled Products Company
- Uponor Inc.
- Viking Engineering
- Viridian Weapon Technologies
- Wagner SprayTech
- Wanner Engineering, Inc.
- Waymouth Farms, Inc., dba Good Sense Foods
- Wilbert Plastic Services
- Wilson Wolf Manufacturing, LLC
- Winco Inc.
- Windings, Inc.
- Wipaire
- Wyoming Machine, Inc.
- Zero Zone Refrigeration, LLC
- Zero-Max

Total Participant Count: 203

Participants by Industry Type

Food & Kindred Products (8 participants)

Conagra Brands – Mankato
E.A. Sween
J&B Group, Inc.
Premium Waters, Inc.

QualiTech Inc.
Schreiber Foods
United States Distilled Products Company
Waymouth Farms, Inc., dba Good Sense Foods

Textile Mill Products (1 participant)

ClearEdge Filtration Inc.

Lumber & Wood except Furniture (6 participants)

Artistic Finishes, Inc.
Designer Products LLC dba Cambek
Lexington Manufacturing

Navy Island, Inc.
Pallet Service Corporation
Quanex

Furniture & Fixtures (3 participants)

Chandler Exhibits Inc.
Plato Woodwork, Inc.

RC Smith Company

Paper & Allied Products (1 participant)

The Smead Manufacturing Company

Printing, Publishing & Allied (10 participants)

AWT Labels & Packaging
Conagra Brands
Diamond Graphics, LLC
ENPOINTE dba GLS Companies, Inc.
National Checking Company

Priority Envelope
Process Displays LLC
Showdown Displays
SPS Works
The Imagine Group

Chemicals & Allied Products (8 participants)

Amerilab Technologies, Inc.
Apex International
Aurora Pharmaceutical
Aveda Corporation

AVEKA Group, Inc.
Ceramic Industrial Coatings
H.B. Fuller
Incertec

Rubber & Plastic Products (24 participants)

7-SIGMA, Incorporated
Action Plastics, Inc.
Advanced Molding Technologies, LLC
American Flexible Products, Inc.
Beacon Engineered Solutions
Diversified Plastics, Inc.
Industrial Netting Inc.
In'Tech Industries Inc.
Intek Plastics
Liquibox Corporation
Midwest Rubber Service & Supply
Mikros Engineering, Inc.

MME Group, Inc.
MNY Group LLC
Modern Molding Inc.
New Team LLC
Olsen Tool & Plastics, Inc.
Precision Associates, Inc.
Precision Gasket Company dba PGC
Sportech, LLC
T.O. Plastics
Thermo-Tech Windows LLC
Uponor Inc.
Wilbert Plastic Services

Stone, Clay, Glass & Concrete (2 participants)

Cloth & Clay, Inc. dba Deneen Pottery

Dahlgren Enterprises, Inc.

Primary Metal Industries (11 participants)

Brenk Brothers Inc.
Carley Foundry, Inc.
Cretex Companies, Inc.
Gopher Resource
Grede LLC
IDC Group, Inc. dba IDC Spring

Johnson Screens Inc.
Prima Power Laserdyne LLC
Product Development Solutions, Inc.
The Specialty Manufacturing Company
Twin City Plating

Fabricated Metal Products (59 participants)

Air Quality Engineering
Ajax Metal Forming Solutions, LLC
Anderson Dahlen, Inc.
Arc Precision
Astro Metal Craft
Atlas Manufacturing
Bermo
Bondhus Corporation
Bowman Tool & Machining Inc.
BTD
C4 Welding, Inc.
Cadrex Manufacturing Solutions
C-Axis
Chandler Industries
Continental Engineering & Manufacturing
Crystal Distribution Inc.
Custom Products of Litchfield, Inc.
Data Metalcraft, Inc.
DCI, Inc.
Door Engineering
Dynamic Sealing Technologies, Inc.
EDCO Products
Elemet Group, Inc.
EMERGE Enterprises
FAST Global Solutions, Inc.
FasTest, Inc.
Featherlite Trailers
FlexMation, Inc.
Gemini, Inc.
Global Finishing Solutions

Granger Machine Inc.
Innovance, Inc.
JEM Technical
Jonaco Machine
Kendall Howard, LLC
La Machine Shop, Inc.
Lake Air Products
Le Sueur Incorporated
Life Fitness
LimPro Metal Fabrication
M & N Structures, Inc.
Malco Products, SBC
MAS HVAC
Mate Precision Technologies
Mathias Die Company
Minnesota Grinding
MRG Tool and Die
Nystrom
Precision Coatings Inc.
Production Engineering Corporation
RAO Manufacturing
Rotation Engineering & Manufacturing Company
Tclad, Inc.
Tescom Corporation
Twin City Die Castings Company
Wanner Engineering, Inc.
Wipaire
Wyoming Machine, Inc.
Zero Zone Refrigeration, LLC

Industrial Machinery & Computer Equipment (17 participants)

Aagard
Continental Machines dba DoALL Sawing Products
CWMF Corporation
Daikin Applied Americas, Inc.
DriSteem Corporation
Ellicott Dredge Technologies
Engage Technologies Corporation
IPS Cranes, Inc.
Jet Edge Waterjet Systems

Massman Companies
Park Industries
PHS West, LLC
Reviva, Inc.
Rice Lake Weighing Systems
Tennant Company
Tokyo Electron U.S. Holdings, Inc.
Viking Engineering

Electronic & Other Electrical (13 participants)

American Time and Signal Company
Analog Technologies Corporation
Banner Engineering
Beacon EmbeddedWorks
Clearfield, Inc.
Daktronics, Inc.
Electronic Systems, Inc.

Engineered Products Company
Hutchinson Technology Incorporated
Nortech Systems
Viridian Weapon Technologies
Winco Inc.
Windings, Inc.

Transportation Equipment (1 participant)

Polaris Industries

Measuring, Analyzing & Controlling Instruments (7 participants)

ARKRAY
Biomerics
Micro Control Company
North Star Imaging

Olympus Corporation of the Americas
Rosemount Inc. & Rosemount Nuclear Inc.
TT Electronics

Misc Manufacturing Industries (32 participants)

Advanced Volumetric Alliance
Aggressive Hydraulics, Inc.
Andersen Corporation
Andrew Tool & Machining Company
APG Cash Drawer
Birchwood Laboratories
Branches LLC
Caerus Corporation
Clarus Medical/Laser Peripherals/Urologix
Clean Air Products
Danfoss Power Solutions II LLC
Dedicated Networks, Inc.
Federal Package Network, Inc.
General Label, Inc.
Graco Inc.
Health Systems Cooperative Laundries

Horton Inc.
ILLUME Holding Company
Kasco Marine, Inc.
Kurt Manufacturing
LISI Medical Remmele
LJP Waste Solutions
Marshall Screw Products dba Marshall Manufacturing Company
Phillips & Temro Industries, Inc.
Plymouth Industries, Inc.
PNE Inc. dba IRD Glass dba IRD Ceramics
Power/mation
Premier Marine
Rapid Packaging, Inc.
Wagner SprayTech
Wilson Wolf Manufacturing, LLC
Zero-Max

Participants by Number of Company Employees

Note: Participants were classified into an employee size group according to the total number of employees reported. Size groups were structured to establish five groups of approximately equal numbers of participants and by significant breaks in size. Each group represents roughly twenty percent of all survey participants.

Group 1: Less than 50 Total Employees (32 participants)

- 7-SIGMA, Incorporated
- Action Plastics, Inc.
- Air Quality Engineering
- American Flexible Products, Inc.
- Andrew Tool & Machining Company
- Arc Precision
- Astro Metal Craft
- Branches LLC
- Continental Engineering & Manufacturing
- Designer Products LLC dba Cambek
- FlexMation, Inc.
- General Label, Inc.
- Granger Machine Inc.
- Industrial Netting Inc.
- IPS Cranes, Inc.
- Jet Edge Waterjet Systems
- La Machine Shop, Inc.
- LimPro Metal Fabrication
- M & N Structures, Inc.
- MAS HVAC
- Minnesota Grinding
- MNY Group LLC
- Olsen Tool & Plastics, Inc.
- PHS West, LLC
- Precision Coatings Inc.
- Rapid Packaging, Inc.
- RC Smith Company
- SPS Works
- Twin City Plating
- Waymouth Farms, Inc., dba Good Sense Foods
- Wilson Wolf Manufacturing, LLC
- Wyoming Machine, Inc.

Group 2: 50 to 99 Total Employees (50 participants)

- Advanced Volumetric Alliance
- Aggressive Hydraulics, Inc.
- Ajax Metal Forming Solutions, LLC
- American Time and Signal Company
- Analog Technologies Corporation
- APG Cash Drawer
- Artistic Finishes, Inc.
- AVEKA Group, Inc.
- Beacon EmbeddedWorks
- Birchwood Laboratories
- Bowman Tool & Machining Inc.
- C4 Welding, Inc.
- C-Axis
- Ceramic Industrial Coatings
- Clarus Medical/Laser Peripherals/Urologix
- Clean Air Products
- ClearEdge Filtration Inc.
- Cloth & Clay, Inc. dba Deneen Pottery
- Continental Machines dba DoALL Sawing Products
- Crystal Distribution Inc.
- CWMF Corporation
- Data Metalcraft, Inc.
- Diversified Plastics, Inc.
- Door Engineering
- Dynamic Sealing Technologies, Inc.
- Ellicott Dredge Technologies
- Engineered Products Company
- FasTest, Inc.
- IDC Group, Inc. dba IDC Spring
- Kasco Marine, Inc.
- Kendall Howard, LLC
- LJP Waste Solutions
- Marshall Screw Products dba Marshall Manufacturing Company
- Mathias Die Company
- Midwest Rubber Service & Supply
- MRG Tool and Die
- North Star Imaging
- Plymouth Industries, Inc.
- PNE Inc. dba IRD Glass dba IRD Ceramics
- Precision Gasket Company dba PGC
- Prima Power Laserdyne LLC
- Priority Envelope
- Product Development Solutions, Inc.
- Production Engineering Corporation
- Quanex
- Rotation Engineering & Manufacturing Company
- Viking Engineering
- Viridian Weapon Technologies
- Winco Inc.
- Zero-Max

Group 3: 100 to 199 Total Employees (43 participants)

- ARKRAY
- Atlas Manufacturing
- Aurora Pharmaceutical
- Bermo
- Biomerics
- Bondhus Corporation
- Brenk Brothers Inc.
- Caerus Corporation
- Chandler Exhibits Inc.
- Conagra Brands
- Custom Products of Litchfield, Inc.
- Dahlgren Enterprises, Inc.
- Danfoss Power Solutions II LLC
- DCI, Inc.
- Dedicated Networks, Inc.
- Diamond Graphics, LLC
- DriSteem Corporation
- Elemet Group, Inc.
- Engage Technologies Corporation
- Federal Package Network, Inc.
- Incertec
- In'Tech Industries Inc.
- JEM Technical
- Jonaco Machine
- Liquibox Corporation
- Mikros Engineering, Inc.
- MME Group, Inc.
- Modern Molding Inc.
- National Checking Company
- Navy Island, Inc.
- Pallet Service Corporation
- Plato Woodwork, Inc.
- Power/mation
- QualiTech Inc.
- Tescom Corporation
- The Smead Manufacturing Company
- Thermo-Tech Windows LLC
- TT Electronics
- Wanner Engineering, Inc.
- Wilbert Plastic Services
- Windings, Inc.
- Wipaire
- Zero Zone Refrigeration, LLC

Group 4: 200 to 499 Total Employees (49 participants)

- Aagard
- Advanced Molding Technologies, LLC
- Amerilab Technologies, Inc.
- Anderson Dahlen, Inc.
- AWT Labels & Packaging
- Beacon Engineered Solutions
- Cadrex Manufacturing Solutions
- Carley Foundry, Inc.
- Chandler Industries
- Clearfield, Inc.
- Conagra Brands - Mankato
- E.A. Sween
- EDCO Products
- Electronic Systems, Inc.
- ENPOINTE dba GLS Companies, Inc.
- FAST Global Solutions, Inc.
- Featherlite Trailers
- Gemini, Inc.
- Global Finishing Solutions
- Grede LLC
- Health Systems Cooperative Laundries
- Horton Inc.
- ILLUME Holding Company
- Innovance, Inc.
- Intek Plastics
- Johnson Screens Inc.
- Lake Air Products
- Le Sueur Incorporated
- Lexington Manufacturing
- LISI Medical Remmele
- Malco Products, SBC
- Massman Companies
- Mate Precision Technologies
- Micro Control Company
- New Team LLC
- Nystrom
- Park Industries
- Phillips & Temro Industries, Inc.
- Precision Associates, Inc.
- Premier Marine
- Process Displays LLC
- RAO Manufacturing
- Reviva, Inc.
- T.O. Plastics
- Tclad, Inc.
- The Specialty Manufacturing Company
- Twin City Die Castings Company
- United States Distilled Products Company
- Wagner SprayTech

Group 5: Over 500 Total Employees (28 participants)

Andersen Corporation
Apex International
Aveda Corporation
Banner Engineering
BTD
Cretex Companies, Inc.
Daikin Applied Americas, Inc.
Daktronics, Inc.
Gopher Resource
Graco Inc.
H.B. Fuller
Hutchinson Technology Incorporated
J&B Group, Inc.
Kurt Manufacturing

Life Fitness
Nortech Systems
Olympus Corporation of the Americas
Polaris Industries
Premium Waters, Inc.
Rice Lake Weighing Systems
Rosemount Inc. & Rosemount Nuclear Inc.
Schreiber Foods
Showdown Displays
Sportech, LLC
Tennant Company
The Imagine Group
Toyko Electron U.S. Holdings, Inc.
Uponor Inc.

Participants by Distance From Minneapolis

Group 1: Within 20 Miles of Minneapolis (116 Participants)

- 7-SIGMA, Incorporated
- Advanced Molding Technologies, LLC
- Air Quality Engineering
- Ajax Metal Forming Solutions, LLC
- American Flexible Products, Inc.
- Amerilab Technologies, Inc.
- Analog Technologies Corporation
- Andrew Tool & Machining Company
- Apex International
- APG Cash Drawer
- ARKRAY
- Artistic Finishes, Inc.
- Atlas Manufacturing
- Aveda Corporation
- AVEKA Group, Inc.
- AWT Labels & Packaging
- Banner Engineering
- Beacon EmbeddedWorks
- Bermo
- Biomerics
- Birchwood Laboratories
- Brenk Brothers Inc.
- Caerus Corporation
- Carley Foundry, Inc.
- C-Axis
- Ceramic Industrial Coatings
- Chandler Industries
- Clarus Medical/Laser Peripherals/Urologix
- Clean Air Products
- ClearEdge Filtration Inc.
- Clearfield, Inc.
- Cloth & Clay, Inc. dba Deneen Pottery
- Conagra Brands
- Continental Machines dba DoALL Sawing Products
- Dahlgren Enterprises, Inc.
- Daikin Applied Americas, Inc.
- Danfoss Power Solutions II LLC
- Diversified Plastics, Inc.
- DriSteem Corporation
- Dynamic Sealing Technologies, Inc.
- E.A. Sween
- EDCO Products
- EMERGE Enterprises
- Engage Technologies Corporation
- Engineered Products Company
- ENPOINTE dba GLS Companies, Inc.
- FasTest, Inc.
- Federal Package Network, Inc.
- FlexMation, Inc.
- General Label, Inc.
- Gopher Resource
- H.B. Fuller
- Health Systems Cooperative Laundries
- Horton Inc.
- IDC Group, Inc. dba IDC Spring
- ILLUME Holding Company
- Incertec
- Industrial Netting Inc.
- IPS Cranes, Inc.
- JEM Technical
- Johnson Screens Inc.
- Kurt Manufacturing
- Lake Air Products
- Lexington Manufacturing
- LimPro Metal Fabrication
- LISI Medical Remmele
- Marshall Screw Products dba Marshall Mfg Company
- MAS HVAC
- Mathias Die Company
- Micro Control Company
- Midwest Rubber Service & Supply
- Mikros Engineering, Inc.
- Minnesota Grinding
- MME Group, Inc.
- MNY Group LLC
- National Checking Company
- Navy Island, Inc.
- Nortech Systems
- Nystrom
- Olympus Corporation of the Americas
- Pallet Service Corporation
- Phillips & Temro Industries, Inc.
- Plymouth Industries, Inc.
- Polaris Industries
- Power/mation
- Precision Associates, Inc.
- Precision Coatings Inc.
- Precision Gasket Company dba PGC
- Premium Waters, Inc.
- Prima Power Laserdyne LLC
- Priority Envelope
- Process Displays LLC
- Product Development Solutions, Inc.
- Production Engineering Corporation
- Quanex
- RAO Manufacturing
- Rapid Packaging, Inc.
- RC Smith Company
- Reviva, Inc.
- Rotation Engineering & Manufacturing Company
- Showdown Displays
- SPS Works

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Graco Inc.
TT Electronics
Twin City Die Castings Company
Twin City Plating
Uponor Inc.
Viking Engineering
Wagner SprayTech

Tennant Company
Wanner Engineering, Inc.
Waymouth Farms, Inc., dba Good Sense Foods
Wilbert Plastic Services
Wilson Wolf Manufacturing, LLC
Wipaire
Zero-Max

Group 2: 20 to 45 Miles from Minneapolis (49 Participants)

Action Plastics, Inc.
Advanced Volumetric Alliance
Aggressive Hydraulics, Inc.
Andersen Corporation
Anderson Dahlen, Inc.
Arc Precision
Astro Metal Craft
Aurora Pharmaceutical
Bondhus Corporation
Chandler Exhibits Inc.
Continental Engineering & Manufacturing
Cretex Companies, Inc.
Crystal Distribution Inc.
Dedicated Networks, Inc.
Designer Products LLC dba Cambek
Diamond Graphics, LLC
Ellicott Dredge Technologies
Gemini, Inc.
Granger Machine Inc.
In'Tech Industries Inc.
Intek Plastics
J&B Group, Inc.
Jet Edge Waterjet Systems
Jonaco Machine
Kasco Marine, Inc.

Kendall Howard, LLC
La Machine Shop, Inc.
Life Fitness
Liquibox Corporation
M & N Structures, Inc.
Mate Precision Technologies
Modern Molding Inc.
New Team LLC
North Star Imaging
Olsen Tool & Plastics, Inc.
PHS West, LLC
Premier Marine
QualiTech Inc.
Rosemount Inc & Rosemount Nuclear Inc.
Sportech, LLC
Tclad, Inc.
Tescom Corporation
The Imagine Group
The Smead Manufacturing Company
The Specialty Manufacturing Company
Toyko Electron U.S. Holdings, Inc.
Viridian Weapon Technologies
Wyoming Machine, Inc.
Zero Zone Refrigeration, LLC

Group 3: 45 to 70 Miles from Minneapolis (21 Participants)

American Time and Signal Company
Branches LLC
C4 Welding, Inc.
Cadrex Manufacturing Solutions
Custom Products of Litchfield, Inc.
CWMF Corporation
Data Metalcraft, Inc.
DCI, Inc.
Elemet Group, Inc.
Grede LLC
Hutchinson Technology Incorporated

Le Sueur Incorporated
Life Fitness - Owatonna
Malco Products, SBC
MRG Tool and Die
Plato Woodwork, Inc.
PNE Inc. dba IRD Glass dba IRD Ceramics
T.O. Plastics
Thermo-Tech Windows LLC
United States Distilled Products Company
Winco Inc.

Group 4: More than 70 Miles from Minneapolis (18 Participants)

- Aagard
- Beacon Engineered Solutions
- Bowman Tool & Machining Inc.
- BTD
- Conagra Brands - Mankato
- Daktronics, Inc.
- Door Engineering
- Electronic Systems, Inc.
- FAST Global Solutions, Inc.
- Featherlite Trailers
- Global Finishing Solutions
- Innovance, Inc.
- LJP Waste Solutions
- Massman Companies
- Park Industries
- Rice Lake Weighing Systems
- Schreiber Foods
- Windings, Inc.