

HVAC Permit Compliance Survey Results

Southern California

Presented Sept-Oct 2014

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Accelerating the transition to a sustainable world powered by clean energy



Center for
Sustainable Energy™

Center for Sustainable Energy (CSE)

CSE is a nonprofit, mission-driven organization that accelerates the transition to a sustainable world powered by clean energy.

We are expert implementation partners for energy policymakers, regulators, public agencies and businesses tasked with achieving ambitious energy goals.

www.energycenter.org/localgov

Executive Summary

In coordination with the **California Energy Commission**, CSE is analyzing current residential HVAC compliance trends and Title 24, Part 6 compliance barriers in order to promote **effective HVAC permit streamlining strategies among Building Departments** in Southern California and develop a best practices guide for stakeholders.

This initiative seeks to streamline residential HVAC alterations by exploring and establishing best practices and that **achieve greater compliance across Southern California** jurisdictions!

To accomplish this goal, CSE is working with LA County, The Energy Network and San Diego Regional Energy Partnership to conduct energy policy analysis, local government engagement, compliance document verifications and convene industry stakeholders to **cultivate a culture of change within the HVAC compliance market.**



Center for
Sustainable Energy™

HVAC Permit Compliance Project Approach

Goals

- (1) Ensure safe installation through energy code compliance
- (2) Remove barriers that cause contractors to bypass local permit and Title 24 compliance processes
- (3) Help building departments ensure compliance through implementation of permit process best practices
- (4) Improve regional energy efficiency by promoting permitted HVAC alterations
- (5) Create methods to track energy savings tied to HVAC change-outs to support climate action plans and GHG reduction goals

Target Audience

- Local building departments invested in achieving code compliance
- Other depts. invested in tracking energy reductions
- Trade Allies - contractors, HERS raters, permit service providers
- Utilities and HVAC industry stakeholders

Local Government Working Groups

Convened September – November 2014

Target Audience

- CBOs, Building Inspectors, Permit Staff, Planners, & other departments invested in tracking energy reduction

Goals

1. Present HVAC permit compliance survey data
2. Discuss permit compliance strategies that increase compliance
3. Discuss opportunities to streamline the permit and inspection process for Energy Upgrade California™ Home Upgrade Projects
4. Explore best practices in Focus Groups

HVAC Permit Compliance Survey

DESIGN & RESPONSES



HVAC Permit Compliance Survey Design

- **Focus: residential HVAC compliance**
 - Mostly HVAC alterations but with consideration of electrical, plumbing and whole house upgrades.
- **Distributed March-April 2014**
 - 54 Southern California Building Departments
 - Selected jurisdictions with highest population
 - 94 contractors, raters, and permit service providers
- **Questions based on responder job role and region**
 - Results identify compliance barriers specific to jurisdiction and HVAC stakeholder

All Participating Jurisdictions (Total 41)

San Diego County (16)

- Carlsbad
- Chula Vista
- Coronado
- El Cajon
- Encinitas
- Escondido
- Imperial Beach
- La Mesa
- National City
- Oceanside
- Poway
- San Diego (City)
- San Diego (County)
- San Marcos
- Santee
- Vista

Orange County (7)

- Anaheim
- Costa Mesa
- Fullerton
- Garden Grove
- Irvine
- Orange (City)
- Santa Ana

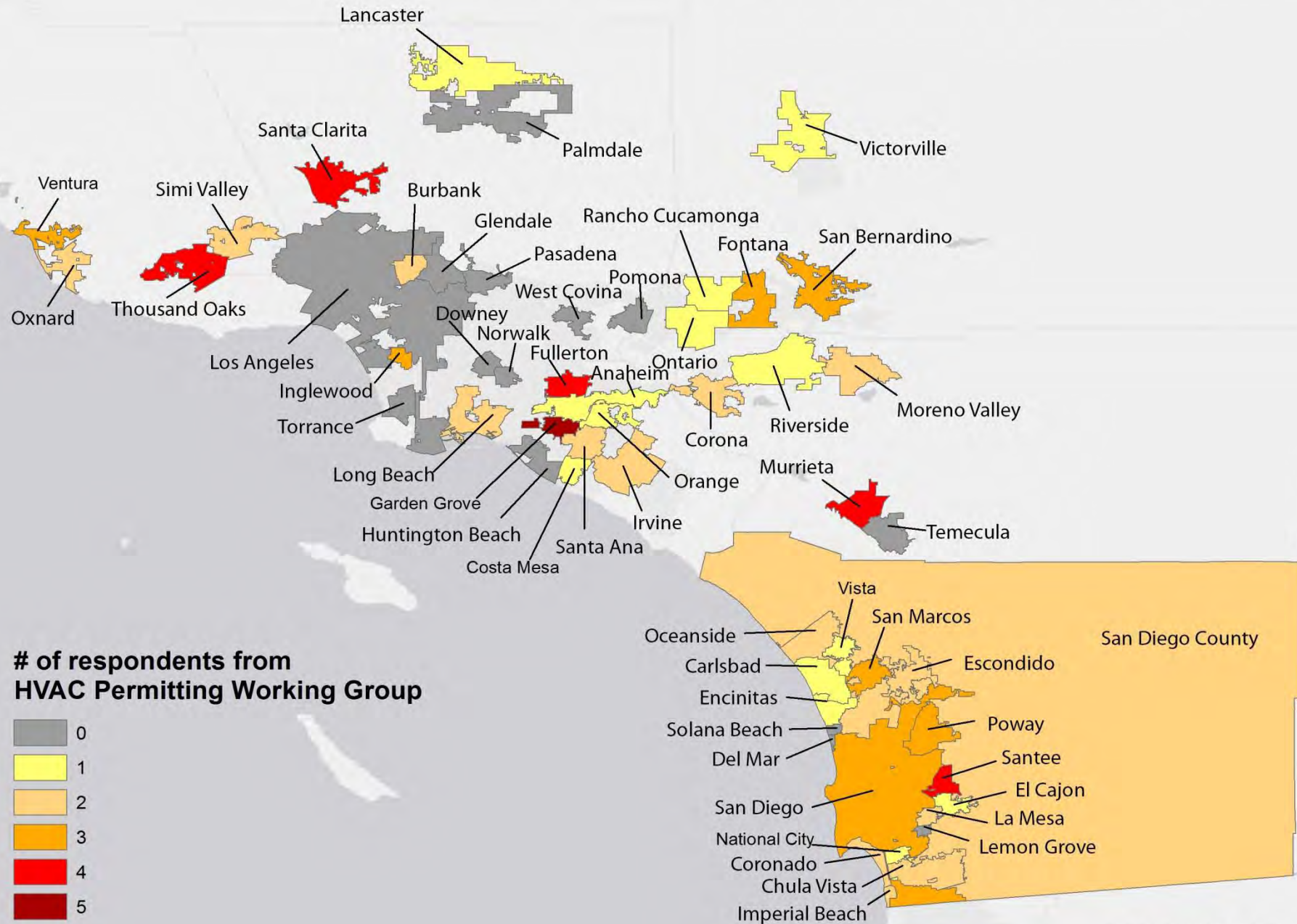
Los Angeles & Ventura Counties (8)

- Burbank
- Inglewood
- Lancaster
- Long Beach
- Santa Clarita
- Simi Valley
- Thousand Oaks
- Ventura (City)

Riverside & San Bernardino Counties (10)

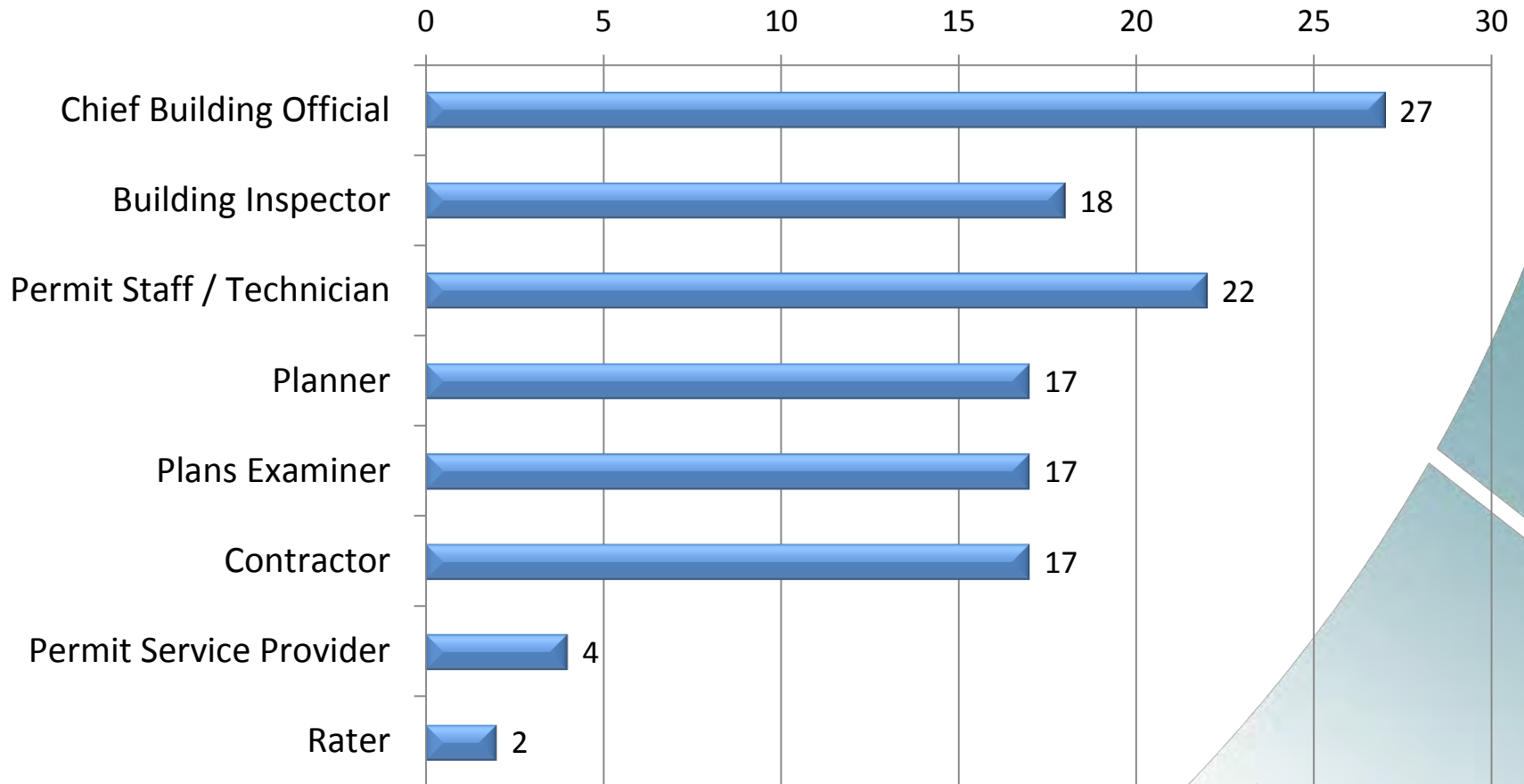
- Corona
- Fontana
- Moreno Valley
- Murrieta
- Ontario
- Rancho Cucamonga
- Riverside
- Temecula
- San Bernardino (City)
- Victorville

Surveyed Jurisdictions and Number of Responses



Respondents by Job Role – Southern California

Total Respondents: 124



Survey Data Breakdown

Four Sections

1. Building Department Resources
2. Compliance Documentation
3. Permit Tracking
4. Permit Compliance Barriers

Additional Data Interpretation Tips

- Some results are regionally specific v. Southern California as a whole
- Survey question in slide title
- Targeted respondents are displayed in bottom left corner

A hammer with a wooden handle and a metal head is positioned vertically on the left side of the image. In the background, there are several sheets of blueprints or technical drawings spread out on a table. The blueprints feature various lines, text, and diagrams, including a table with columns and rows. The overall scene suggests a construction or engineering workspace.

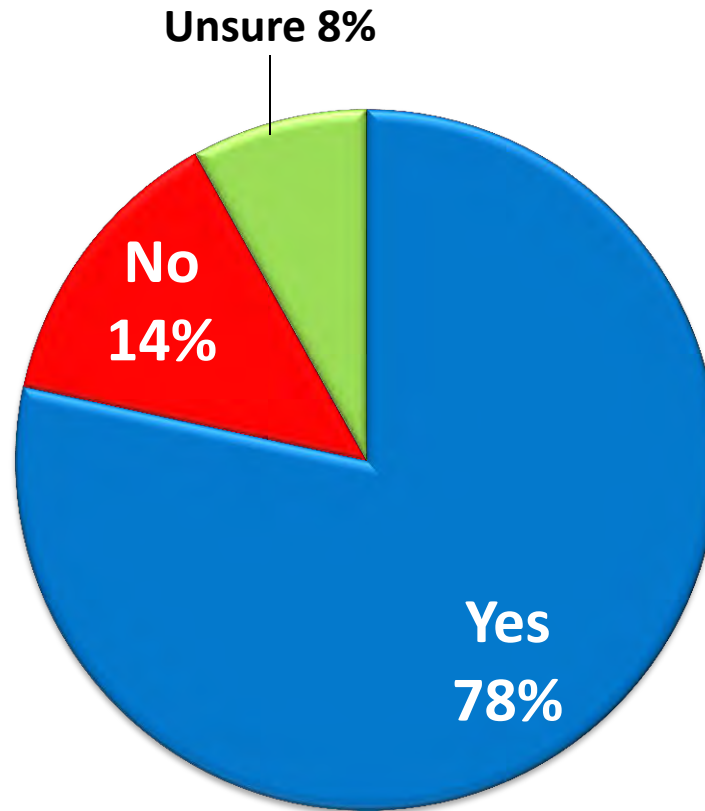
HVAC Permit Compliance Survey

BUILDING DEPARTMENT RESOURCES

Section 1: BUILDING DEPARTMENT RESOURCES

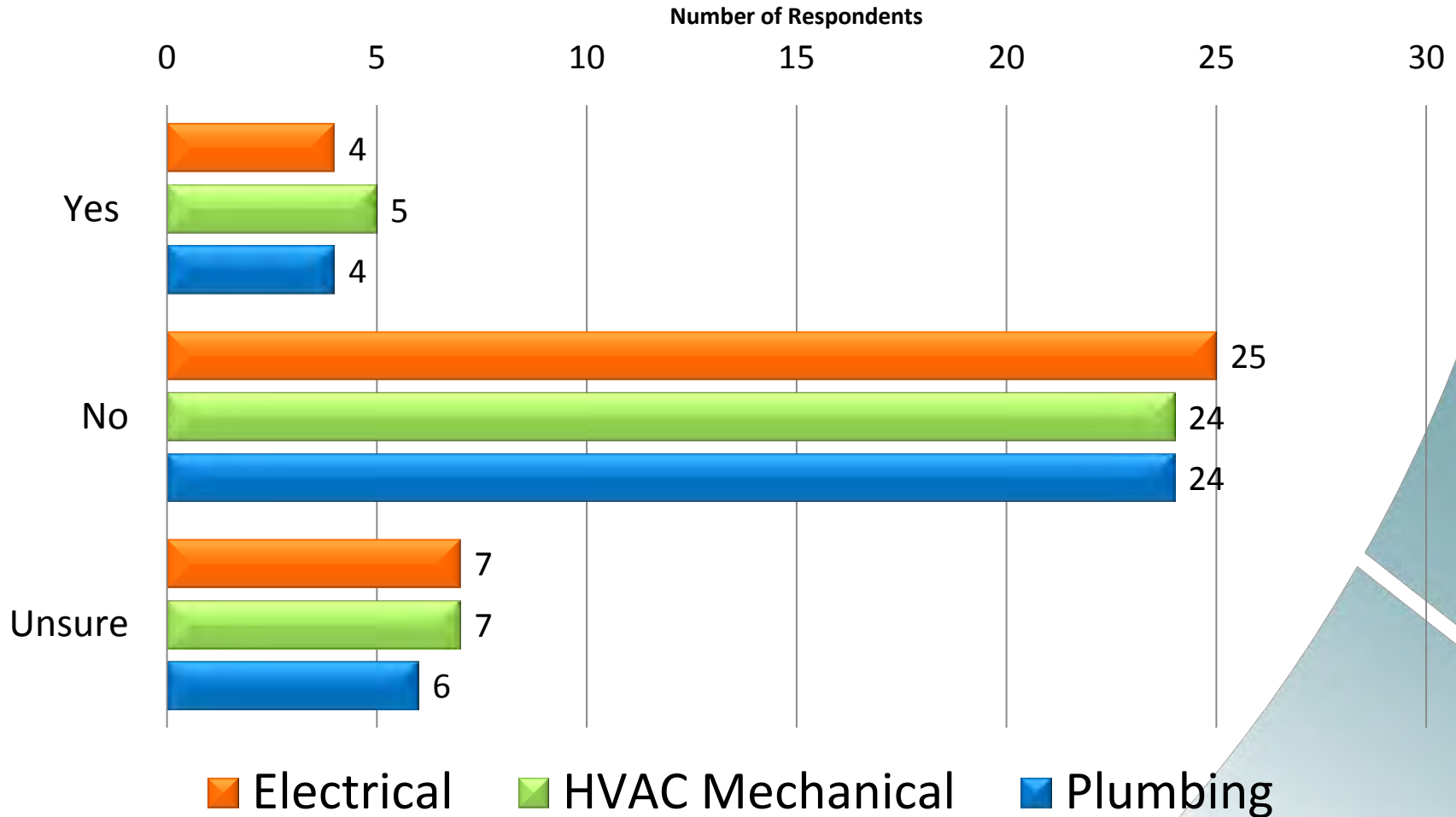
- Do Building Departments have adequate resources to implement and enforce Title 24?
- What resources do Building Departments need?
- What resources do contractors & raters use most to adhere to the Energy Code?

Do you feel your Building Department has adequate resources to implement Title 24, Part 6 requirements?

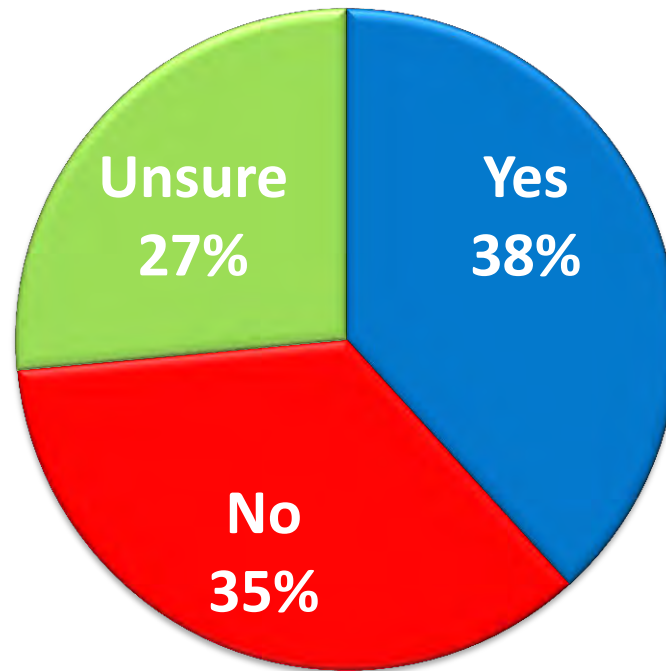


CBO, Plans Examiner, Building Inspector, Permit Staff/Tech, Planner Q.

Does your staff need help implementing any of the following residential alterations permits?

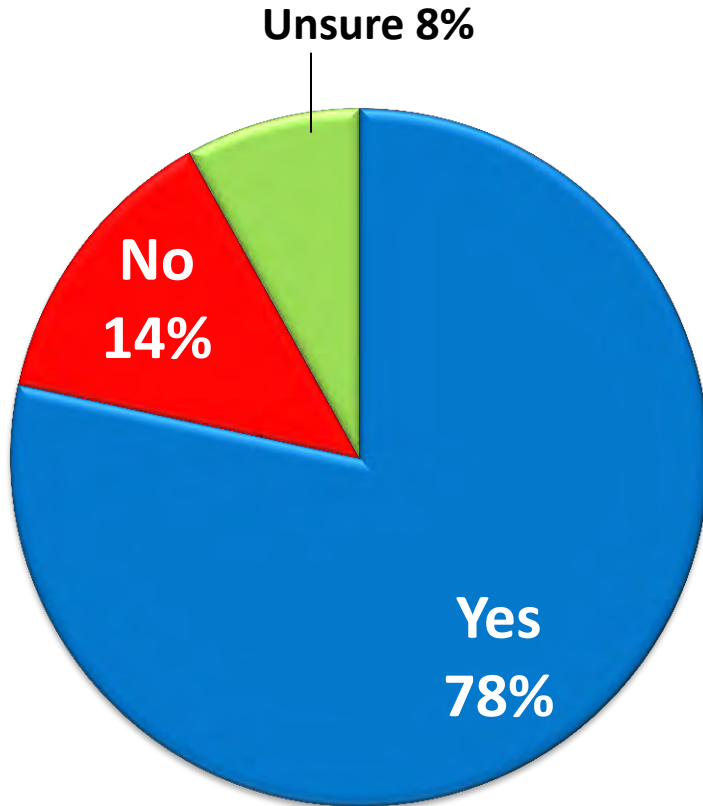


Does your Building Department have resources specifically for contractor enforcement of Title 24, Part 6 requirements?

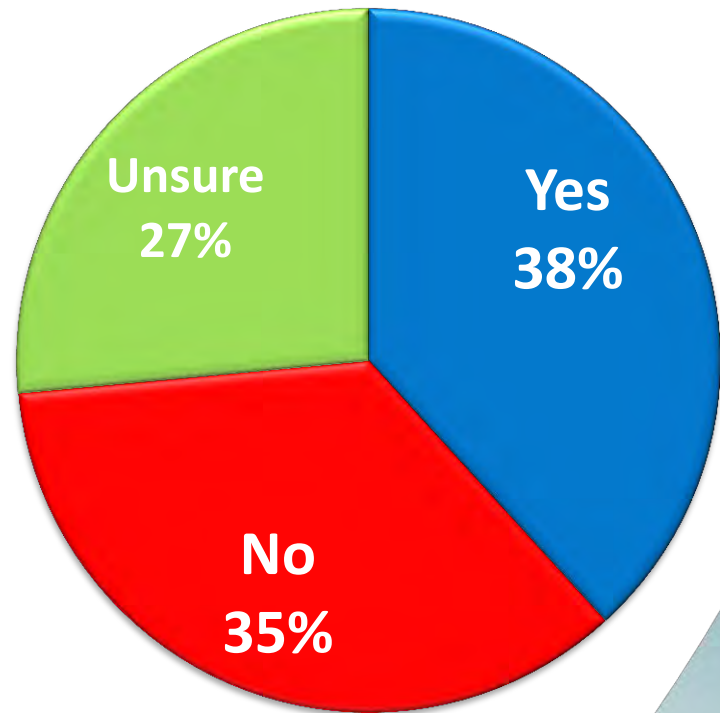


CBO, Plans Examiner, Building Inspector, Permit Tech, Planner Q.

What's the difference?



Implementation of Title 24, Part 6



Enforcement of Title 24, Part 6

What resources is your Building Department in need of? Rank answers, 1 being the resource needed most.

| San Diego | | Southern California | |
|---------------------------------------|------|---------------------------------------|------|
| Applicant education on requirements | 2.11 | Applicant education on requirements | 2.13 |
| Field staffing | 3.21 | Contractor code enforcement | 3.29 |
| Contractor code enforcement | 3.52 | Field staffing | 3.37 |
| Office staffing | 3.95 | Office staffing | 3.68 |
| Office technical knowledge | 4.10 | Office technical knowledge | 3.85 |
| Field technical knowledge | 4.22 | Field technical knowledge | 4.37 |
| IT services such as online scheduling | 4.83 | IT services such as online scheduling | 4.88 |

What resources is your Building Department in need of?

Rank answers, 1 being the resource needed most.

| Los Angeles/Ventura | | Southern California | |
|---------------------------------------|------|---------------------------------------|------|
| Applicant education on requirements | 1.94 | Applicant education on requirements | 2.13 |
| Contractor code enforcement | 3.25 | Contractor code enforcement | 3.29 |
| Office technical knowledge | 3.79 | Field staffing | 3.37 |
| Office staffing | 3.86 | Office staffing | 3.68 |
| Field staffing | 3.87 | Office technical knowledge | 3.85 |
| Field technical knowledge | 4.36 | Field technical knowledge | 4.37 |
| IT services such as online scheduling | 4.93 | IT services such as online scheduling | 4.88 |

What resources is your Building Department in need of?

Rank answers, 1 being the resource needed most.

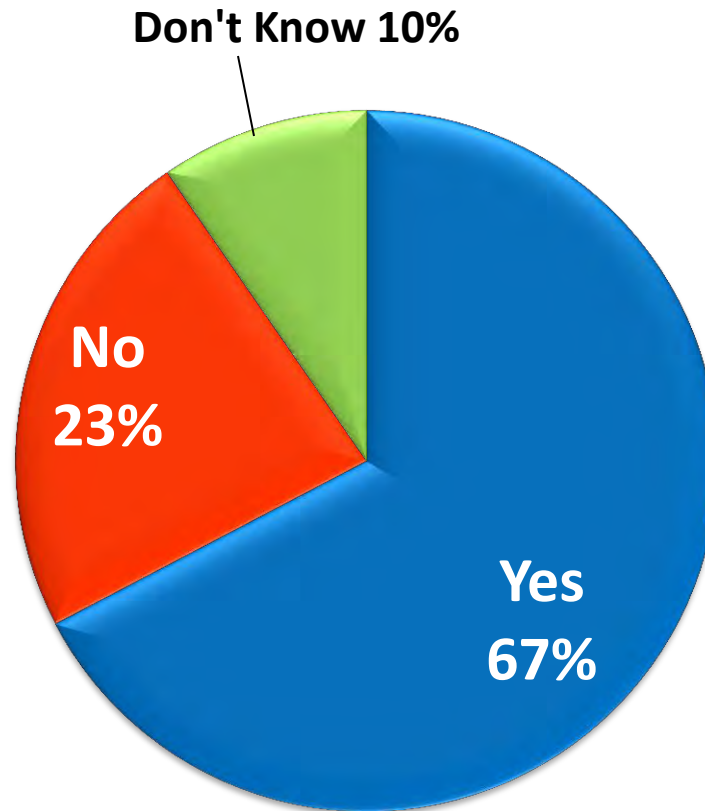
| Riverside & San Bernardino | | Southern California | |
|---------------------------------------|------|---------------------------------------|------|
| Applicant education on requirements | 1.88 | Applicant education on requirements | 2.13 |
| Field staffing | 2.20 | Contractor code enforcement | 3.29 |
| Contractor code enforcement | 3.25 | Field staffing | 3.37 |
| Office technical knowledge | 4.20 | Office staffing | 3.68 |
| Office staffing | 4.50 | Office technical knowledge | 3.85 |
| Field technical knowledge | 5.00 | Field technical knowledge | 4.37 |
| IT services such as online scheduling | 5.50 | IT services such as online scheduling | 4.88 |

How often do you use these resource(s) to access information on the residential permit process? (Rank)

| Southern California | | | | | | Score | Rank |
|---------------------|---|---|---|---|---|-------------|------------------------|
| Counter Visit | 6 | 5 | 2 | | 1 | 1.93 | 1 Counter Visit |
| City Website | 5 | 4 | 3 | 3 | | 2.27 | 2 City Website |
| City Staff Contact | 2 | 4 | 5 | 4 | | 2.73 | 3 City Staff Contact |
| Permit Runner | 3 | 2 | | 1 | 6 | 3.42 | 4 Permit Runner |
| Internal Database | 1 | | 3 | 3 | 3 | 3.70 | 5 Internal Database |

Contractor, Rater, Permit Service Provider Q.

Does your Department have an accessible, designated point of contact for questions about the residential permit process?



CBO, Plans Examiner, Building Inspector, Permit Tech, Planner Q.

Which of these resources does your Building Department make available online?

Information

| Designated Permit POC Contact Info | Permit Process/Steps | Fee Schedule/Permit Costs |
|------------------------------------|----------------------|---------------------------|
| 51% | 82% | 80% |

➤ 220 responses

Best Practice!

Which of these resources does your Building Department make available online?

Permits

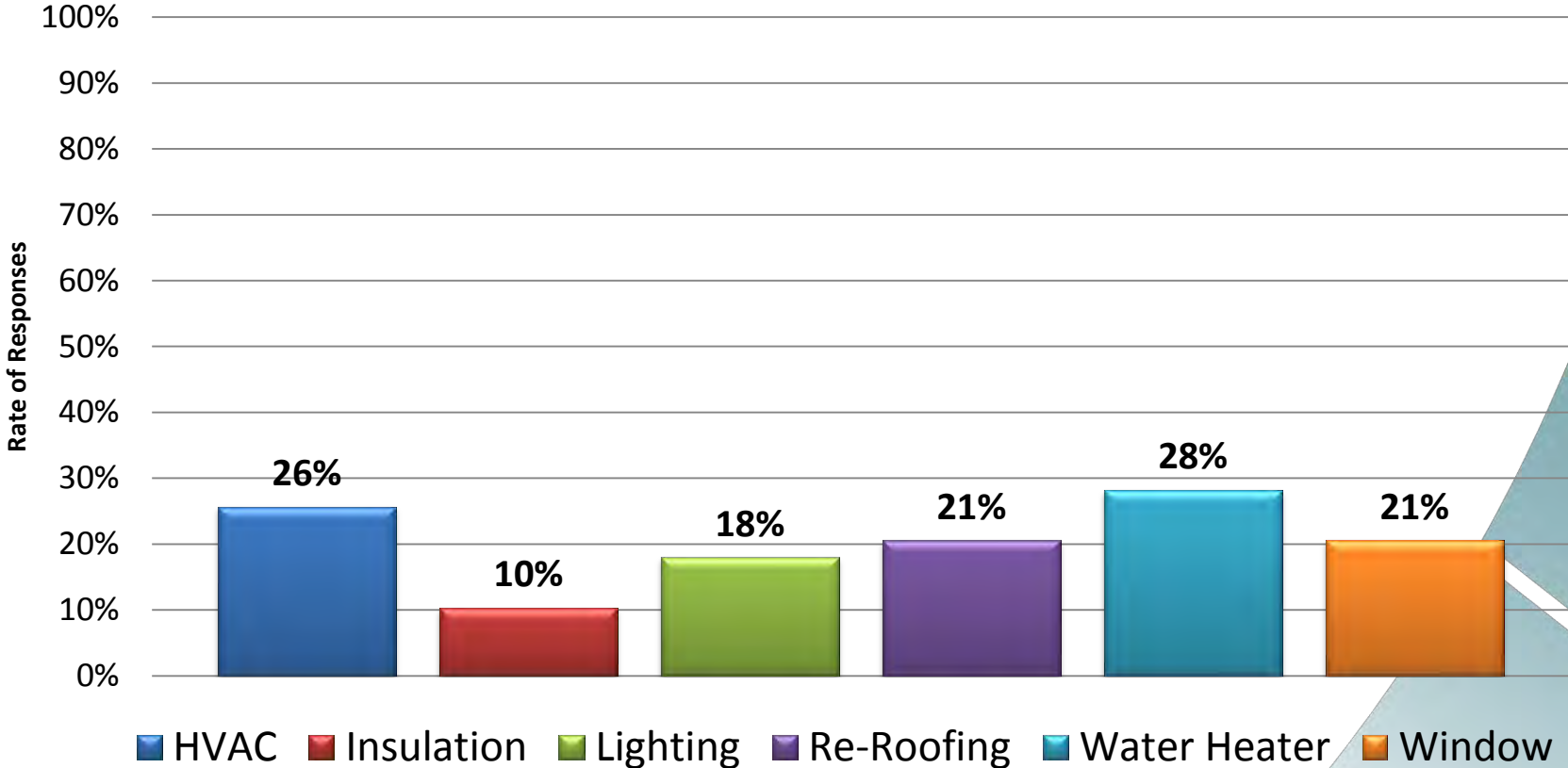
| Accessible Permit Applications | Permit Tracking |
|--------------------------------|-----------------|
| 86% | 32% |

➤ 152 responses

Why the disconnect?

How do you issue permits for the following measures?

Permits Issued Online



Which of these resources does your Building Department make available online?

Inspections

| Inspection Requests | Post Inspection Results |
|---------------------|-------------------------|
| 54% | 33% |

➤ 168 responses

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Rank answers, 1 being the resource needed most.

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Riverside & San Bernardino

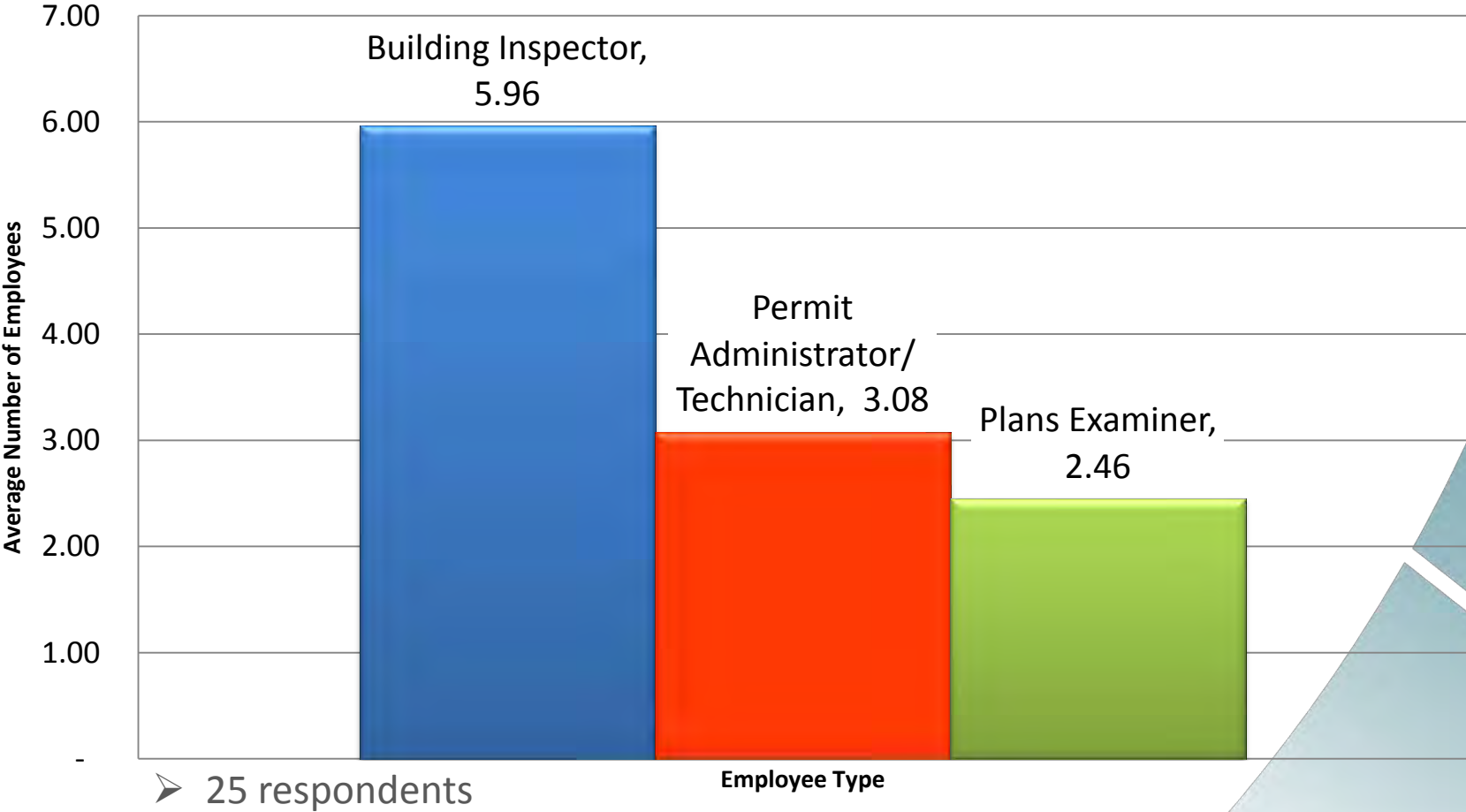
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Southern California

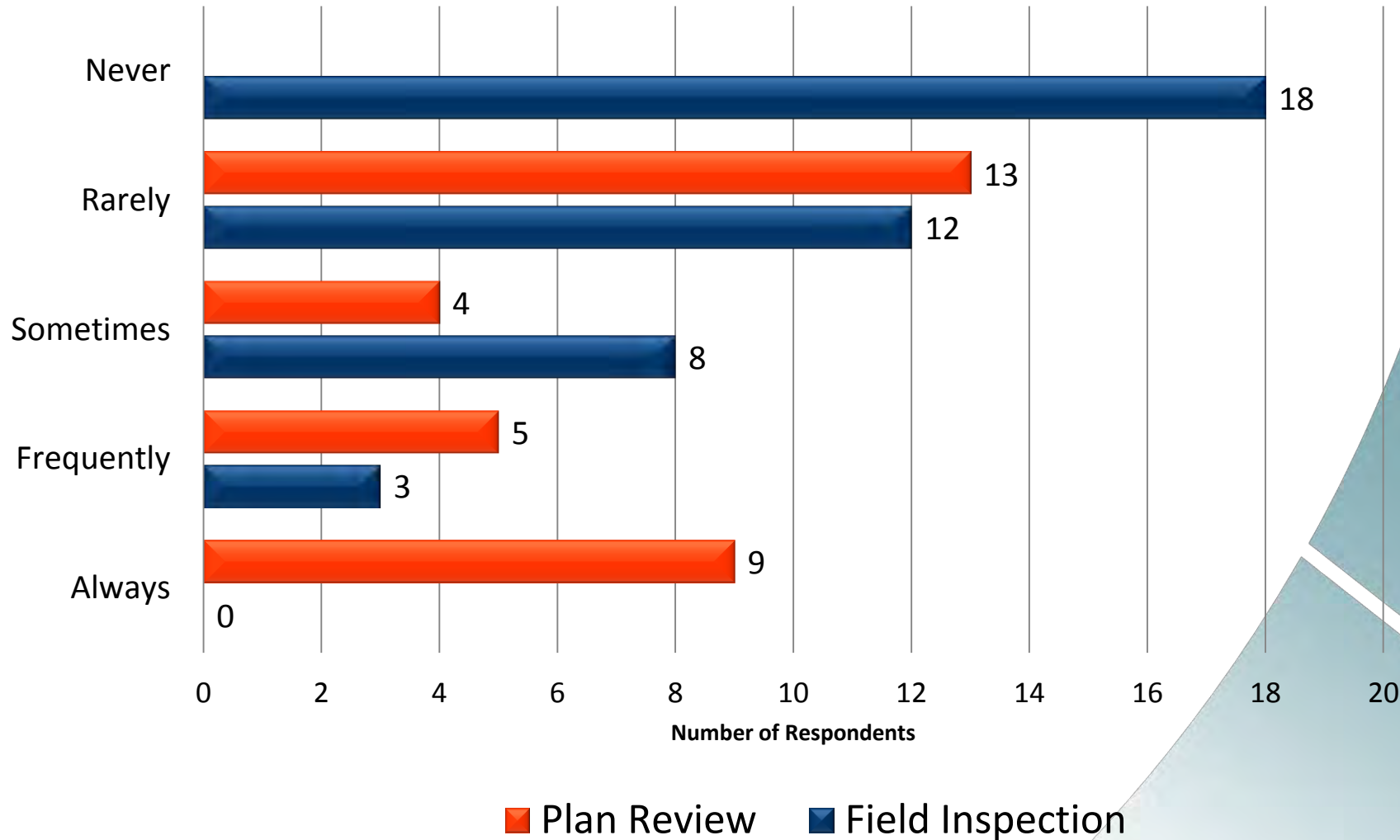
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CBO, Plans Examiner, Building Inspector, Planner Q.

How many full-time equivalent employees does your Building Department have in each role?

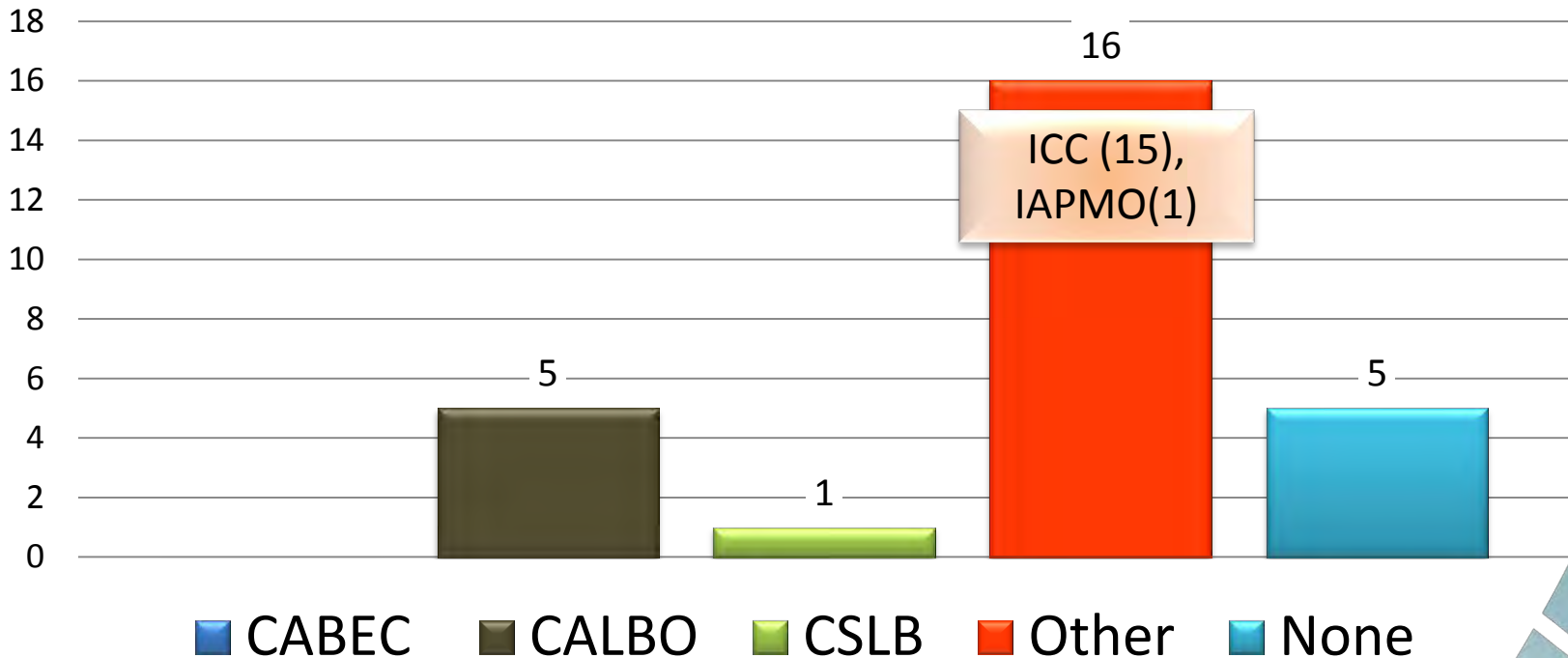


How often do you utilize contract services to conduct residential plan review & field inspections?



Chief Building Official, Plans Examiner, Planner Q.

Which of the following qualifications do you require of contracted field inspectors?



CABEC: California Association of Building Energy Consultants

CALBO: California Building Officials

CSLB: Contractors State Licensing Board

ICC: International Code Council

IAPMO: International Association of Plumbing and Mechanical Officials

Chief Building Official, Building Inspector Q.

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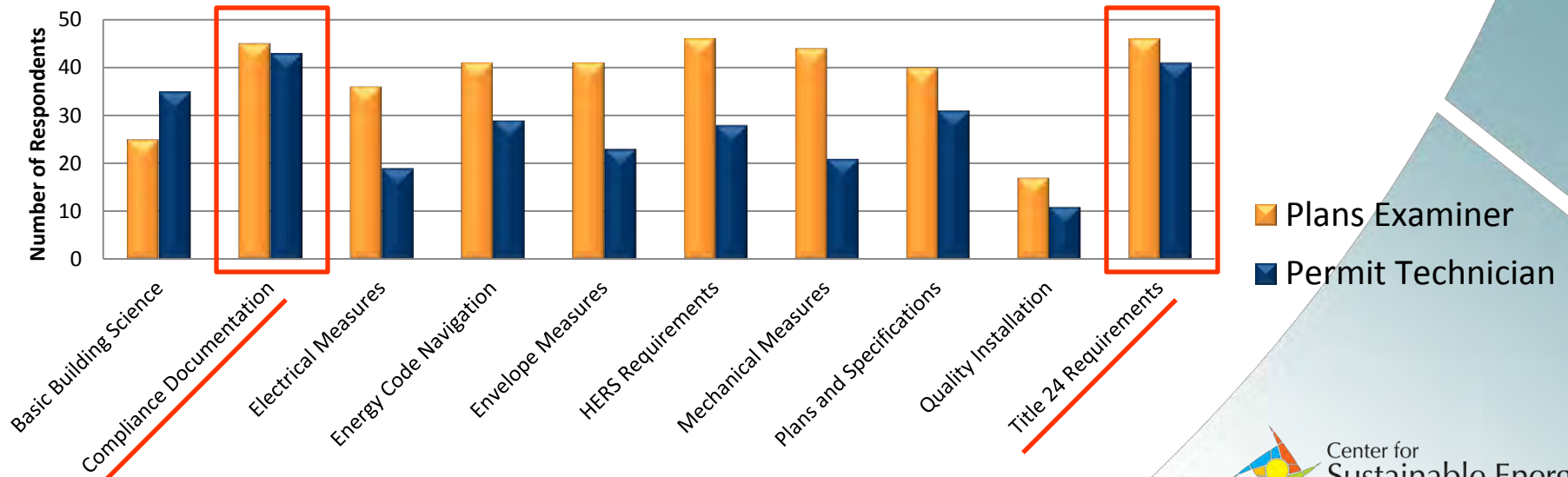
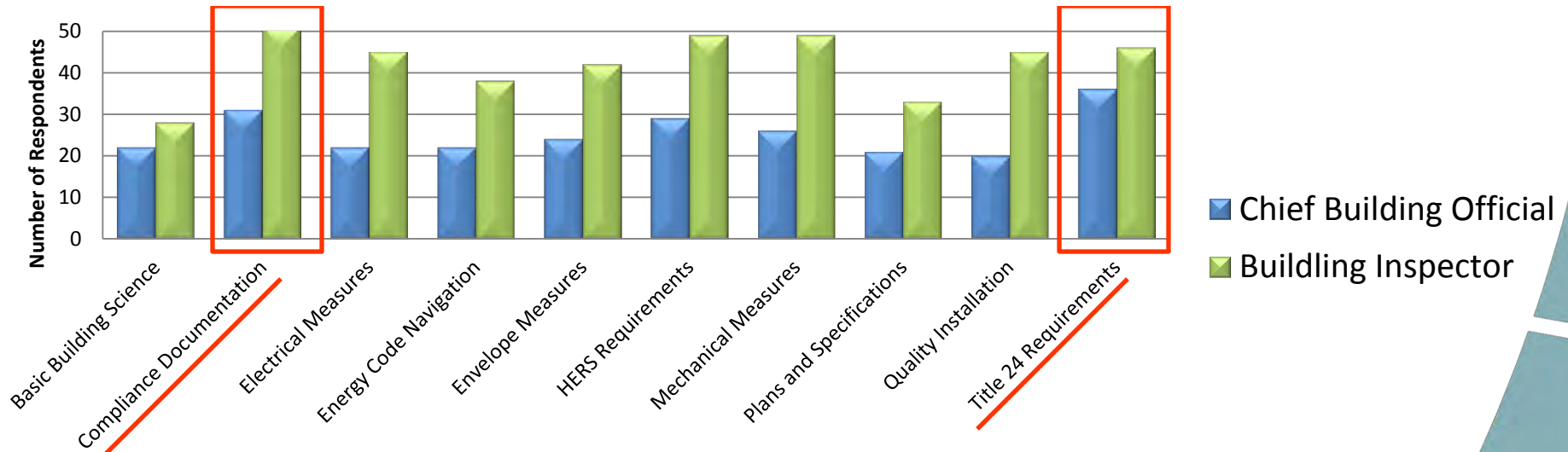
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What aspects of the residential energy code do Building Department staff need more training in?



Training Resources Available

- CEC List Servers, www.energy.ca.gov/listservers
- CPUC Service Lists, www.cpuc.ca.gov/service_lists/
 - Published documents, webinars and legislative updates
- International Code Council (ICC)
 - San Diego Plumbing & Mechanical Chapter
- California Association of Building Energy Consultants (CABEC), www.cabec.org
 - Title 24, Part 6 res. & non-res. code updates & training
 - Certified Energy Plans Examiner (CEPE) and Certified Energy Analysts (CEA)
- CSE Events Page, www.energycenter.org/events
 - BPI & HERS certification, educational workshops & webinars
- Energy Code Ace, www.energycodeace.com
 - Title 24, Part 6 res. and non-res. training and practical resources for Building Departments
 - Sept. 16-18 Title 24 residential standards webinar series
- Interstate Renewable Energy Council, www.irecusa.org
 - Renewable energy applications and permit streamlining training

BUILDING DEPARTMENT RESOURCES: Survey Takeaways

- Bldg. Depts. feel equipped to **'implement'** Title 24, Part 6, but ill equipped to **'enforce'**
 - What's the difference?
 - What additional staff would be helpful to enforce?
 - Would contracted inspectors satisfy this need?
- **82%** of Bldg. Depts. offer permit process information online (including POC info)
 - This is where applicants go for information
 - Online info. reduces time spent by counter staff answering applicant questions
 - Who is responsible for maintaining this information?
- **86%** of Bldg. Depts. make permit applications accessible online
- **32%** of Bldg. Depts. have online permit tracking
- Bldg. Depts. feel that applicants need more education about the Energy Code and the permit process in general
 - Applicants indicate that they look to your websites for this education
 - What else can Bldg. Depts. do to help educate applicants?

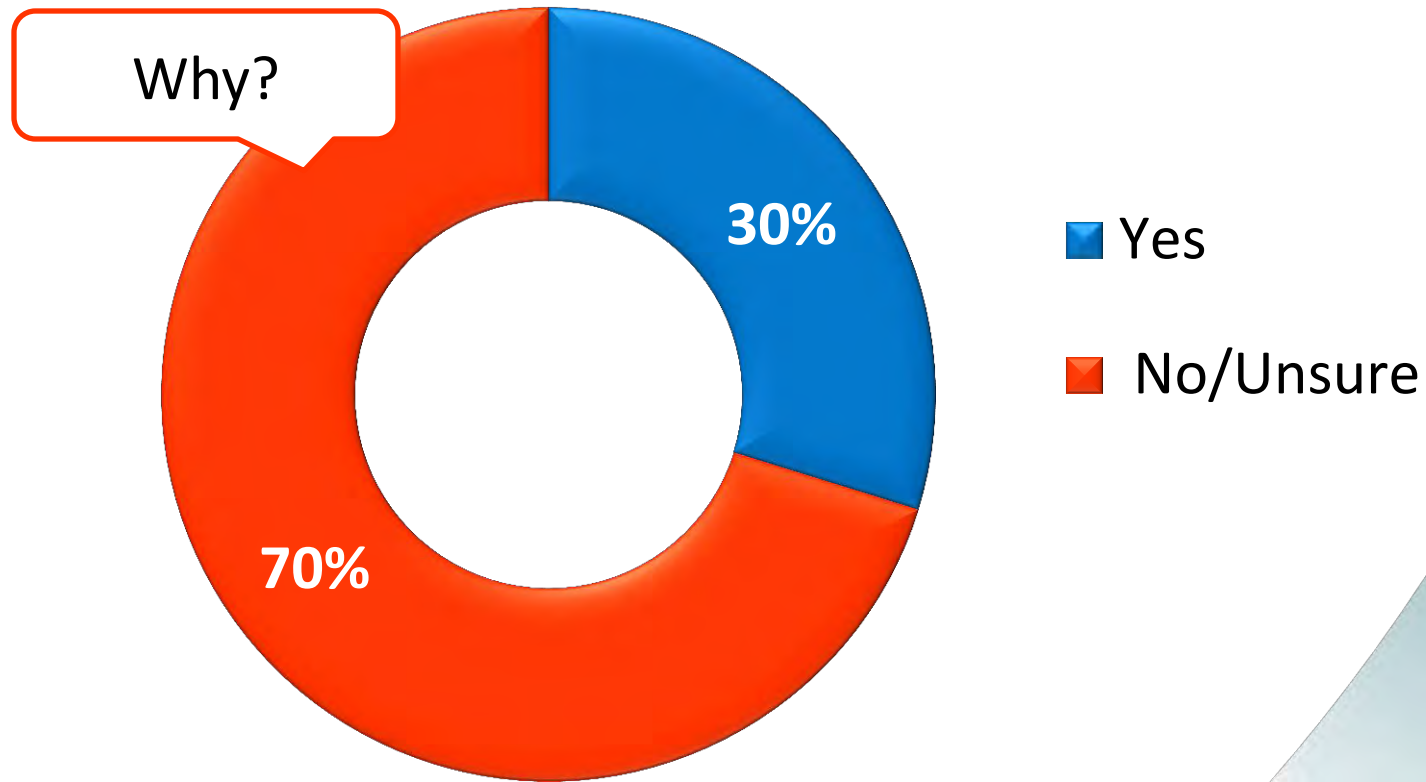
HVAC Permit Compliance Survey

COMPLIANCE DOCUMENTATION

Section 2: COMPLIANCE DOCUMENTATION

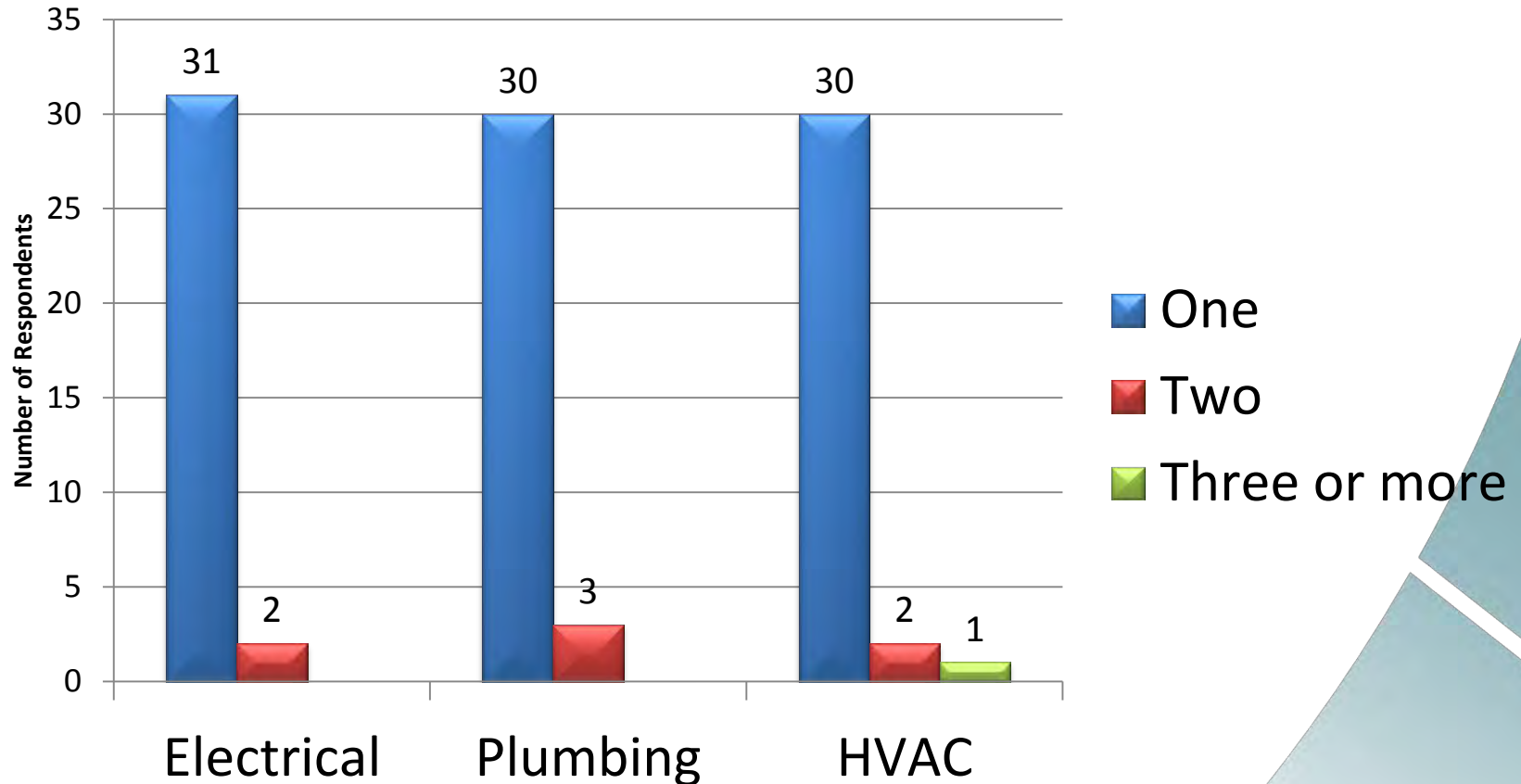
- Are checklists used for plan/permit review?
- How many departments must review permit applications?
- Are Title 24, Part 6 compliance forms submitted with permit applications?
- What resources are being used to obtain Title 24, Part 6 compliance forms?
- Who screens compliance forms and to what degree?

Do you use a checklist or reference tool to ensure the appropriate compliance documentation is provided with the permit application?

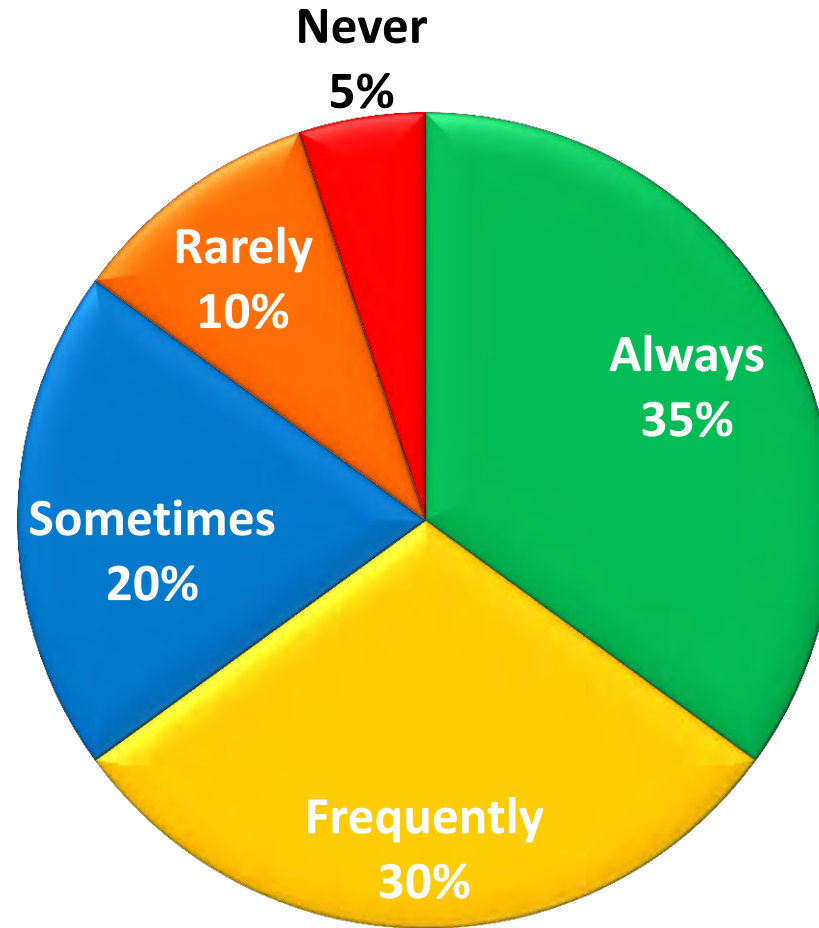


Permit Staff / Tech, Plans Examiner Q.

To how many department must a contractor or homeowner submit separate permit applications to for a energy upgrade/retrofit project?

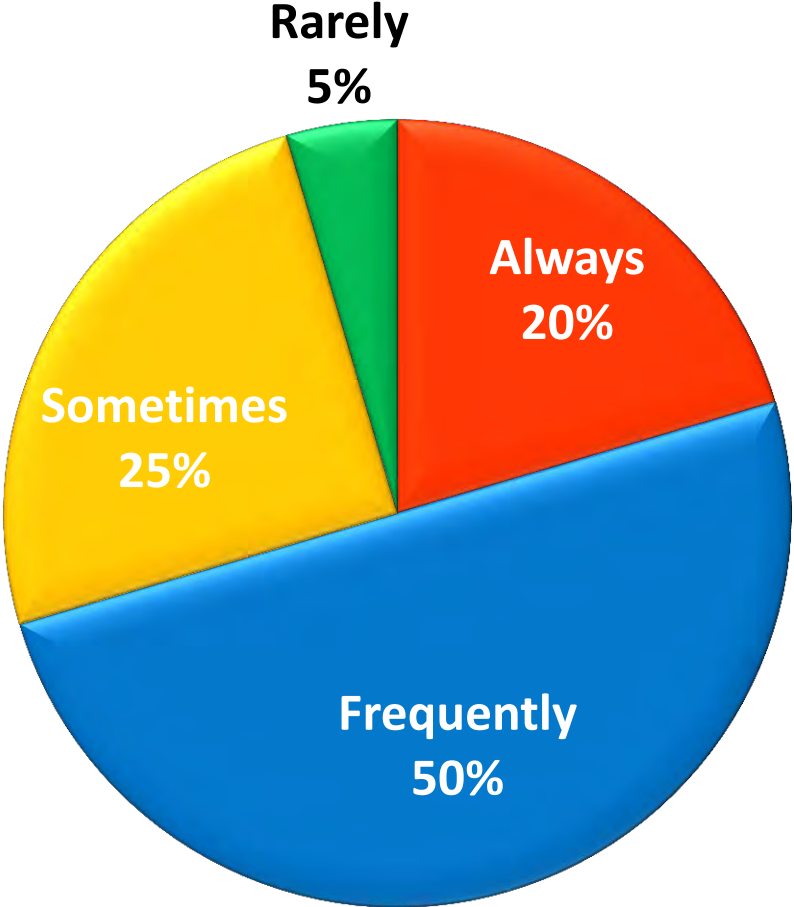


How often are Title 24 CF-1R-ALTs included with the initial permit application?



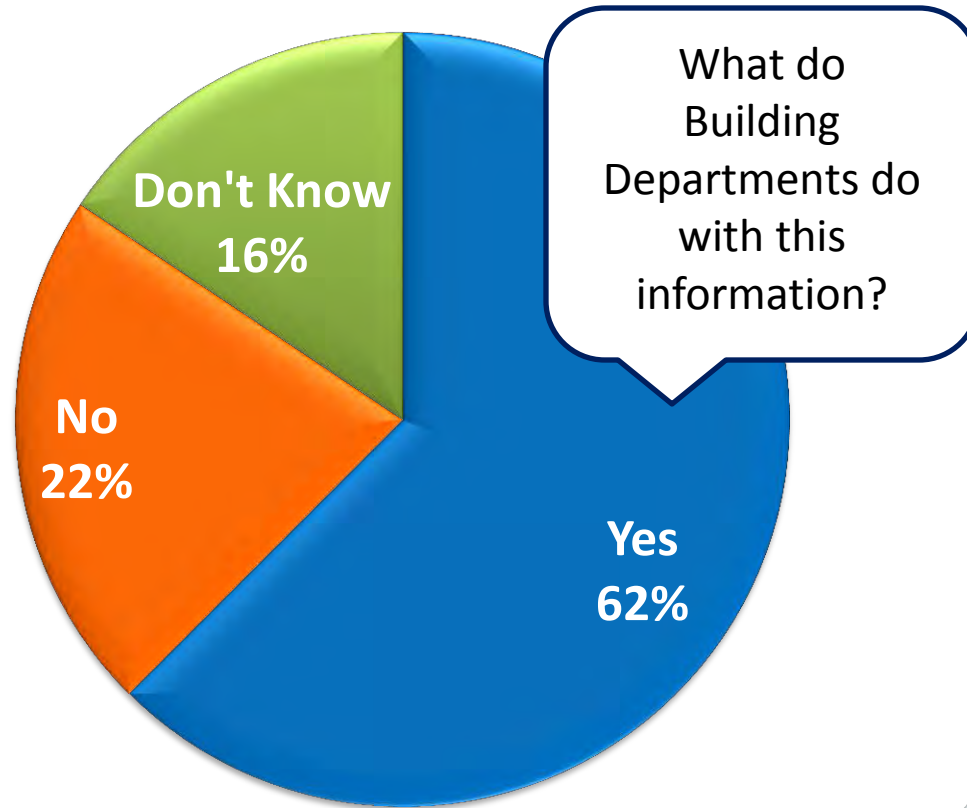
Permit Staff / Tech, Plans Examiner Q.

How often are permit applications not accepted or returned due to incomplete Title 24 compliance documentation?



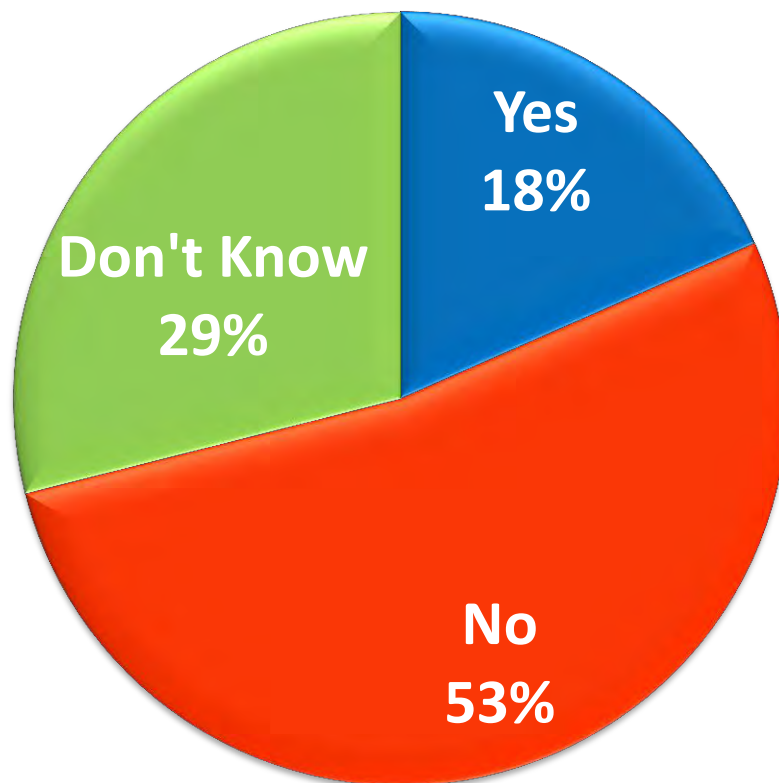
Building Inspector, Contractor, Rater Q.

When HERS verification is required, do you check the Certificate of Compliance (CF-1R ALT) for the HERS registration number?



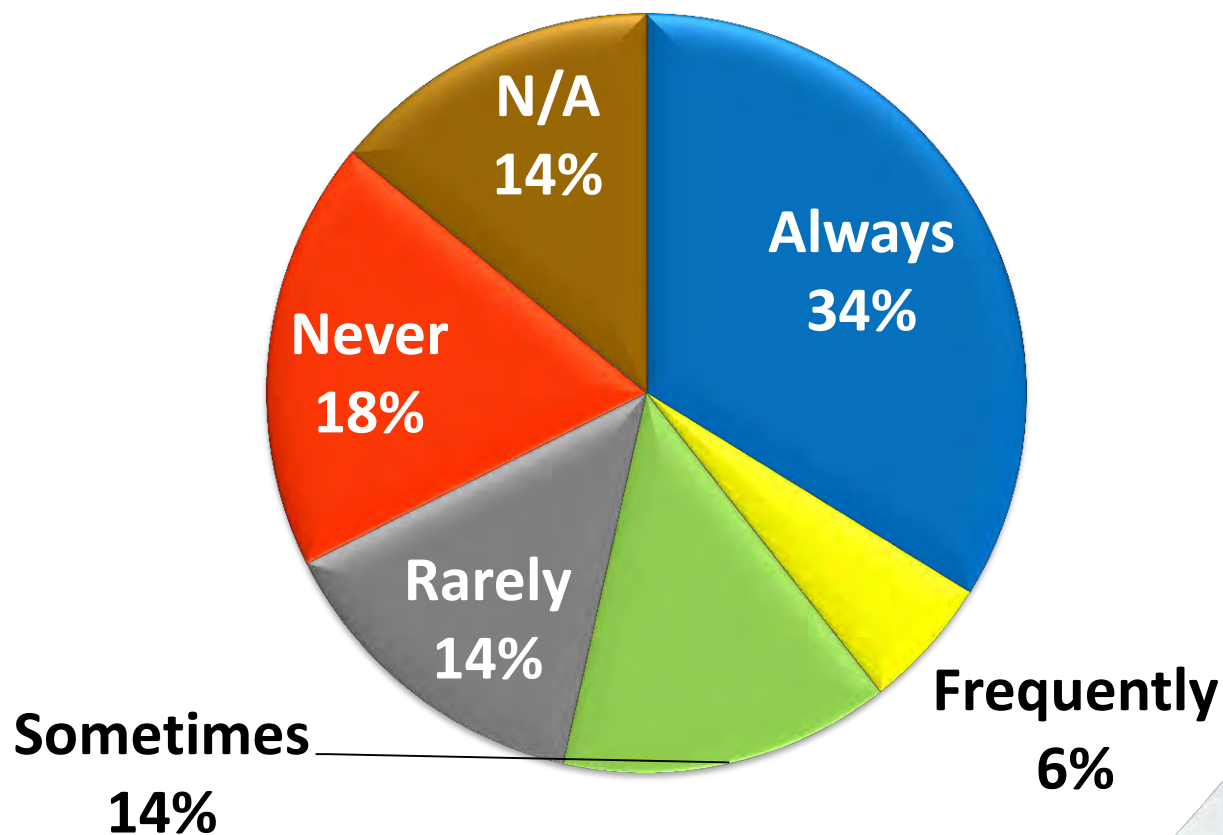
All Respondents Q.

If the compliance documentation specifies higher-than-prescriptive minimum energy features (e.g., AFUE, SEER, R-value, HSPF, EF, etc.), are those highlighted for field inspection?



All Respondents Q.

When energy features change after the permit is issued, how often do you require residential projects to re-submit Title 24 compliance documentation?



COMPLIANCE DOCUMENTATION: Survey Takeaways

- Majority of Bldg. Depts. do not use checklists during the permit review process.
 - Time-saver and Energy Code education opportunity for Building Department Staff.
- Applicants are in the habit of submitting Title 24 compliance documentation with permit applications.
 - Unfortunately they are returned **70-95%** of the time due to incompleteness.
 - What tools are feasible to ensure complete submittal the first time?
- Compliance forms indicate that the HERS verification process is underway
 - Potential opportunity to take advantage of FV/DT services provided by HERS raters to meet some inspection needs
- Compliance forms are an opportunity to capture energy savings for jurisdictions.
 - Updated forms may be necessary for accurate energy savings tracking.



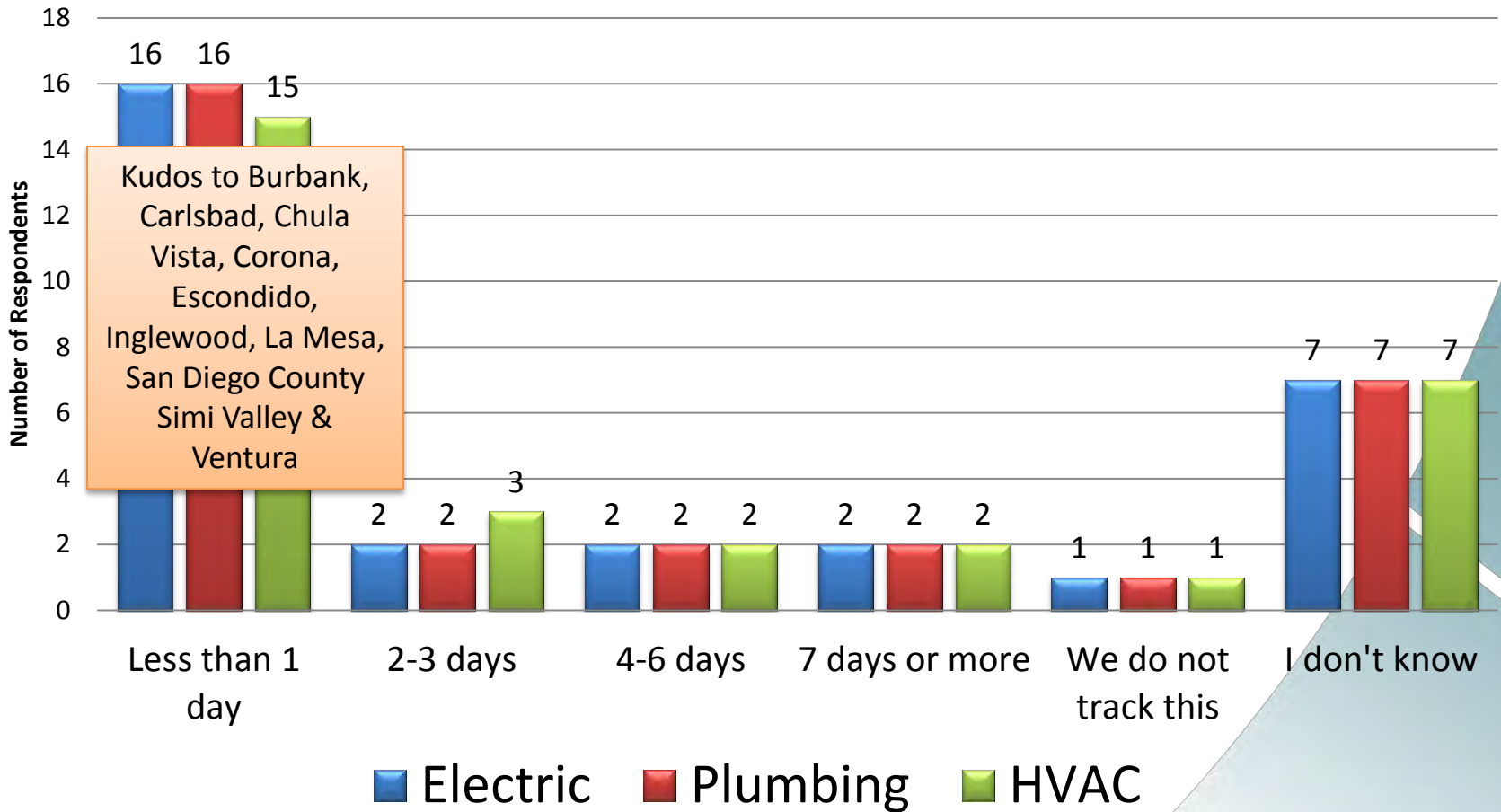
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PERMIT TRACKING

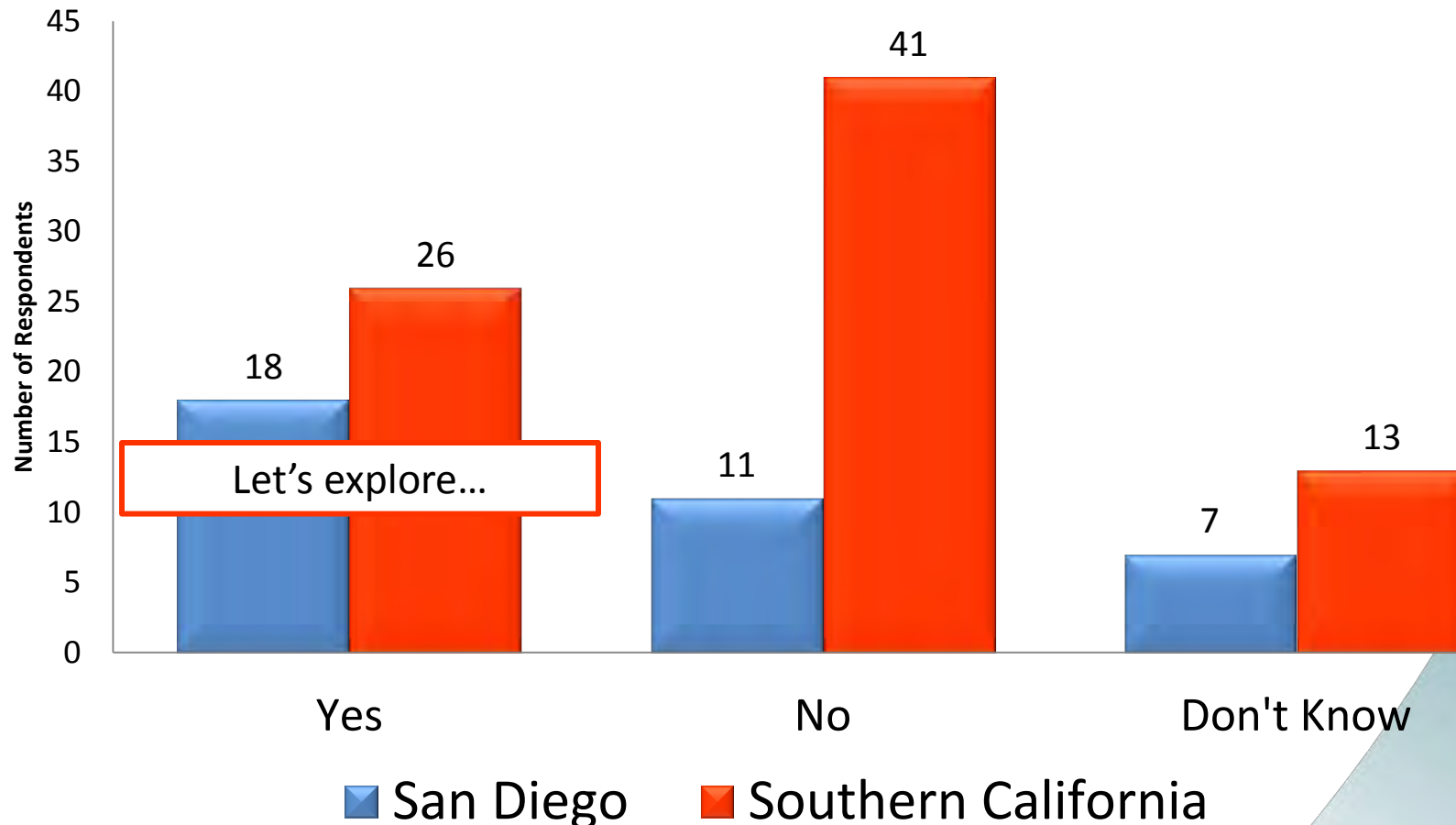
Section 3: PERMIT TRACKING

- Tracking the permit process from start to finish.
- How are permits issued?
- What are timelines for plan review and inspections?
- Are express permitting options available?
- What technology is currently used or being considered to facilitate the permit process?

Is there a policy to issue or deny residential energy upgrade/retrofit permits within a specified number of business days from the application submission?



Are there mechanisms in place for accelerating residential alterations permit processes under certain conditions?

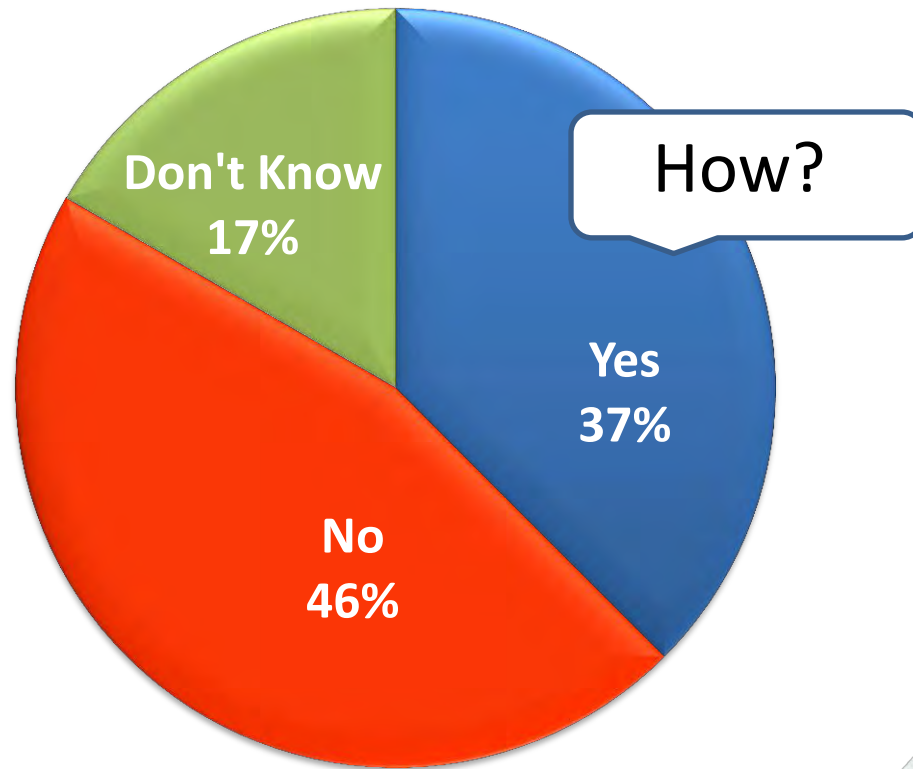


Mechanisms to accelerate permits

- Express permits, online
- Emergency
- Expedite fee
- Expedited Permits
- Expedited Plan Review
- Quick business queue
- Case-by-case plan check for room addition
- Fax in application in advance
- Over the counter appointments available
- Sustainable projects are expedited for a fee

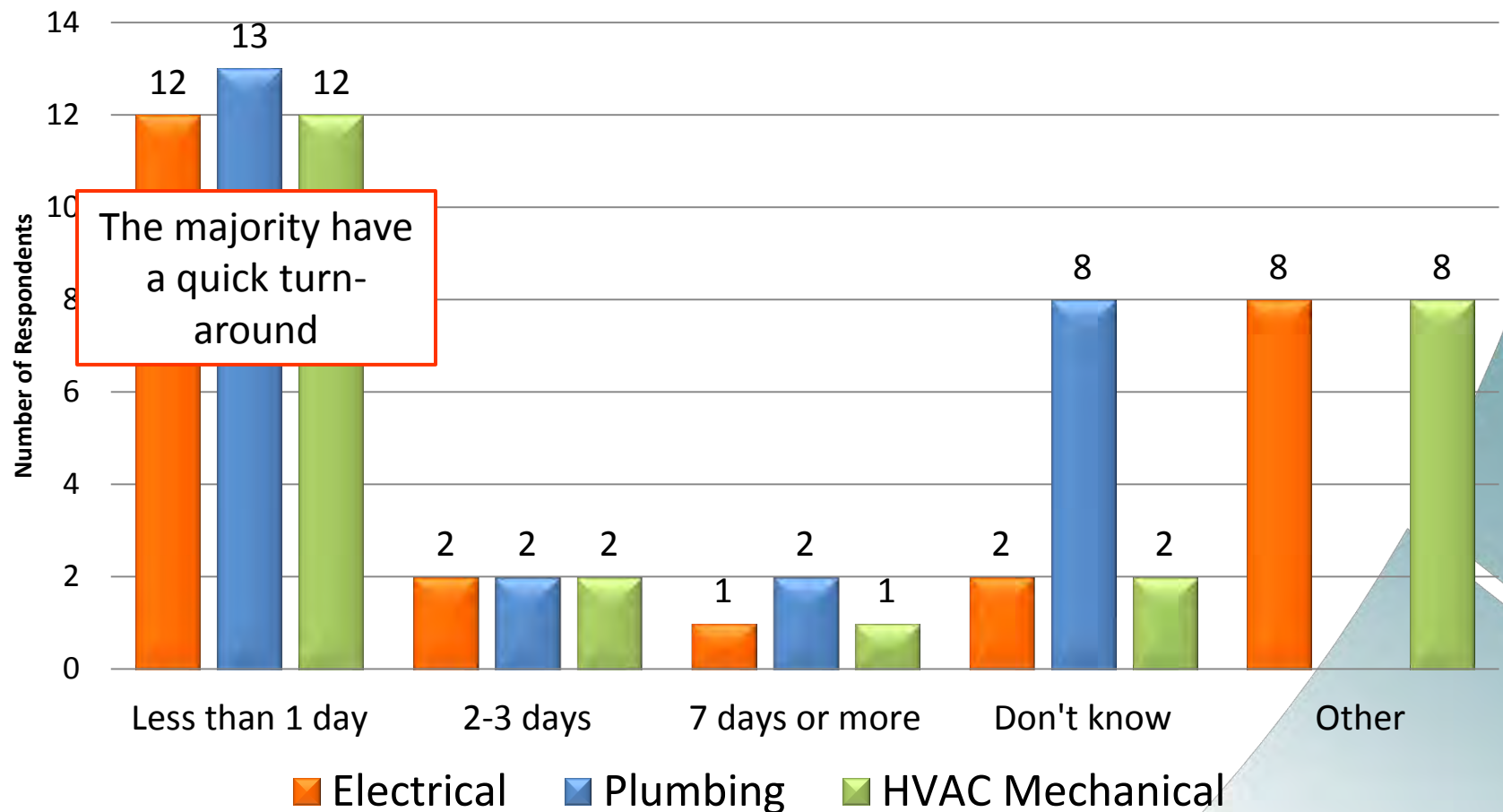
How do applicants/projects qualify for express mechanisms?

Would you consider altering plan review processes (e.g. automatic approval, expedited plan check, etc.) for energy upgrades/retrofits enrolled in a program with 3rd party quality assurance?

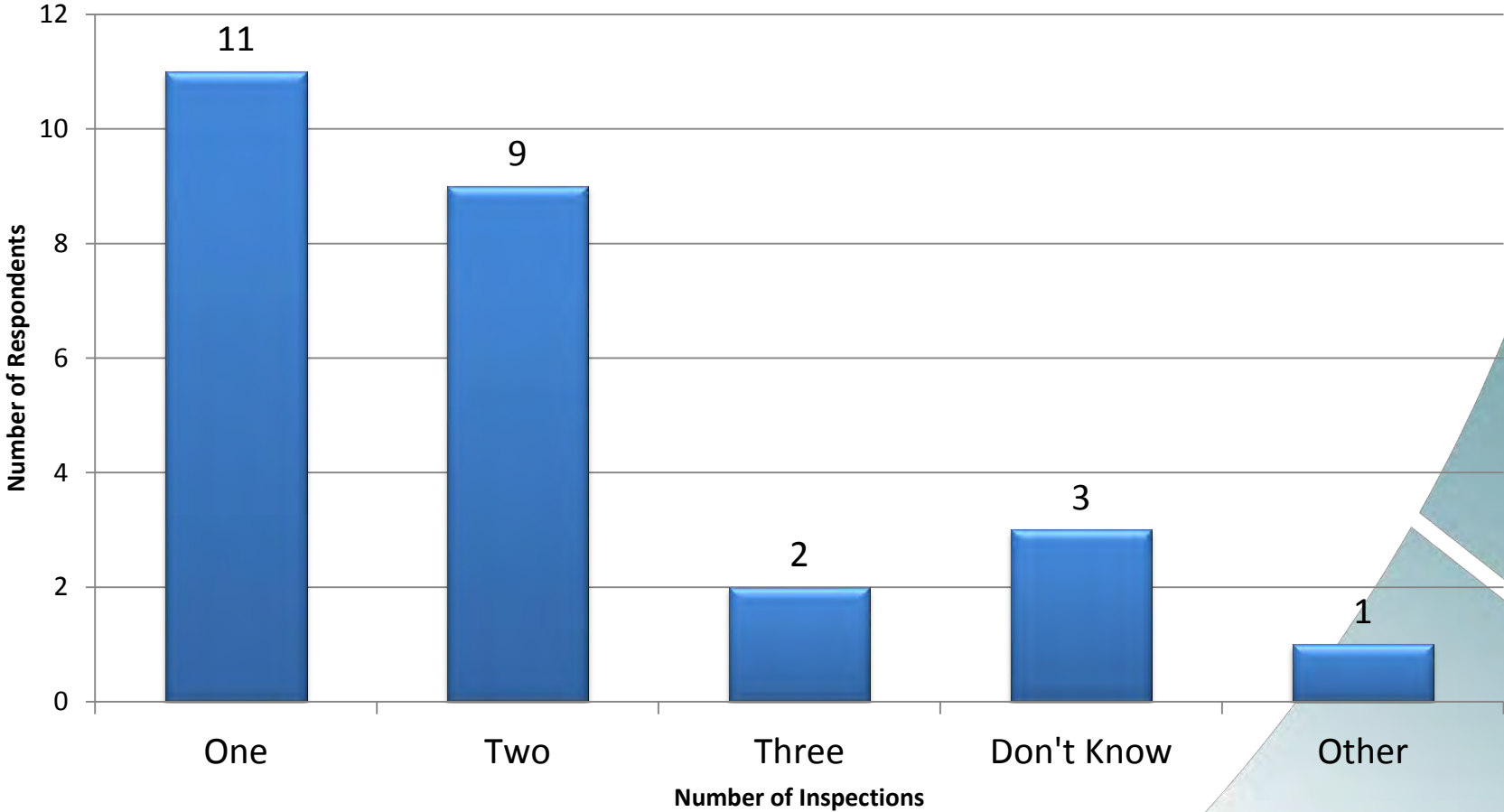


Chief Building Official Q.

For a typical residential energy upgrade/retrofit, on average how many business days after the inspection request does the inspection take place?



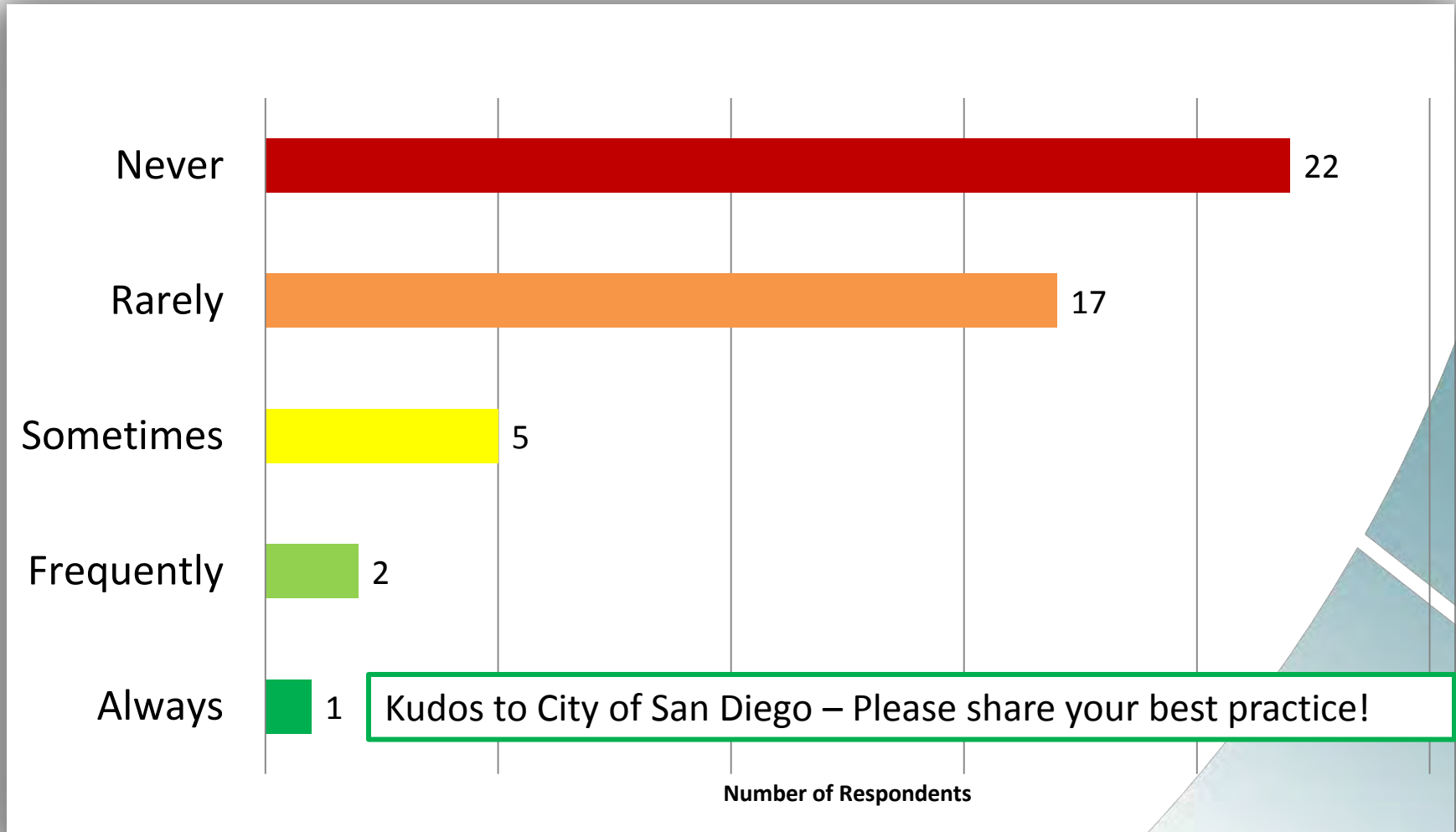
How many separate inspection trips are required for a typical residential energy upgrade/retrofit involving electrical, mechanical or plumbing measures?



CBO, Plans Examiner, Building Inspector, Permit Tech, Planner Q.

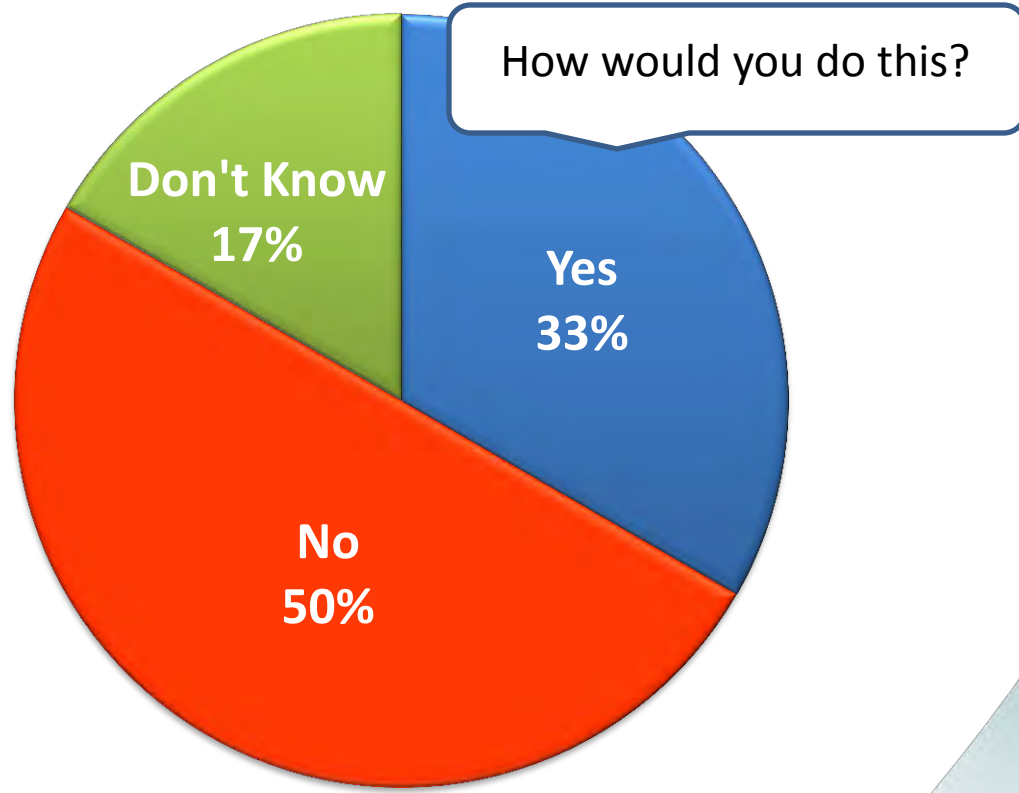


How often are Building Department & HERS Rater inspections coordinated?



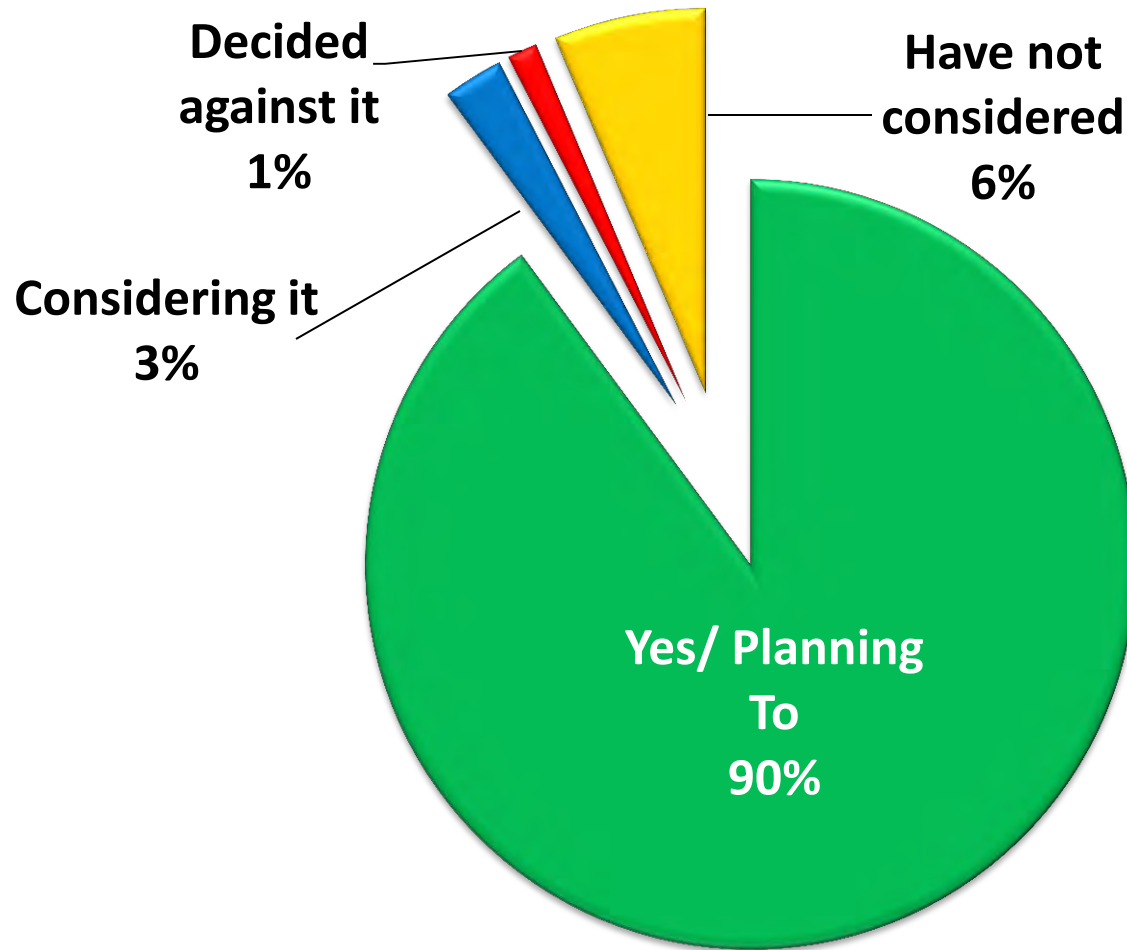
All Respondent Q.

Would you be willing to forego or limit building inspections for projects involving electrical, mechanical or plumbing measures enrolled in a program where 3rd party quality assurance is mandatory?

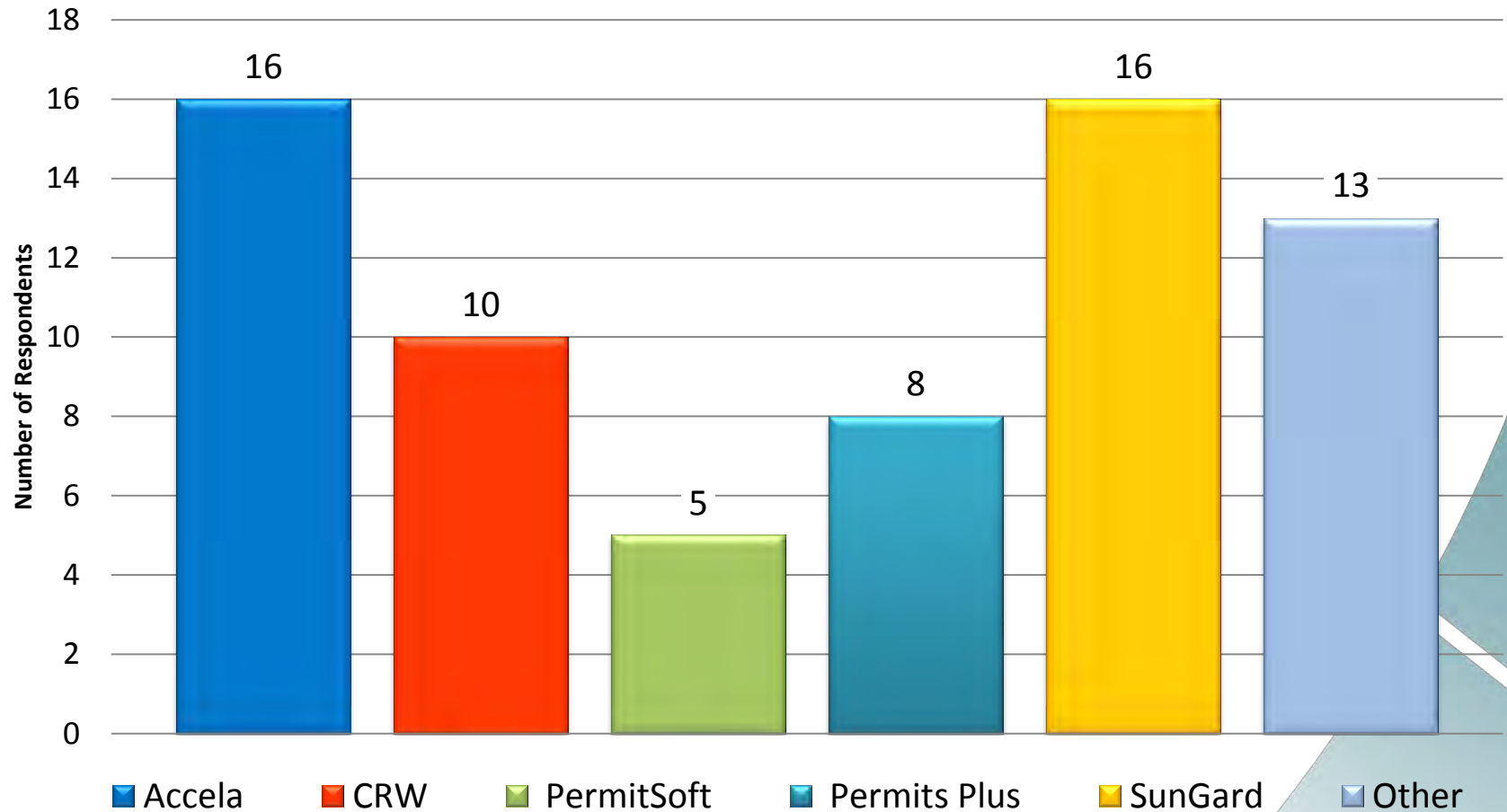


Chief Building Official Q.

Does your Building Department use an integrated software system to track permit activity?

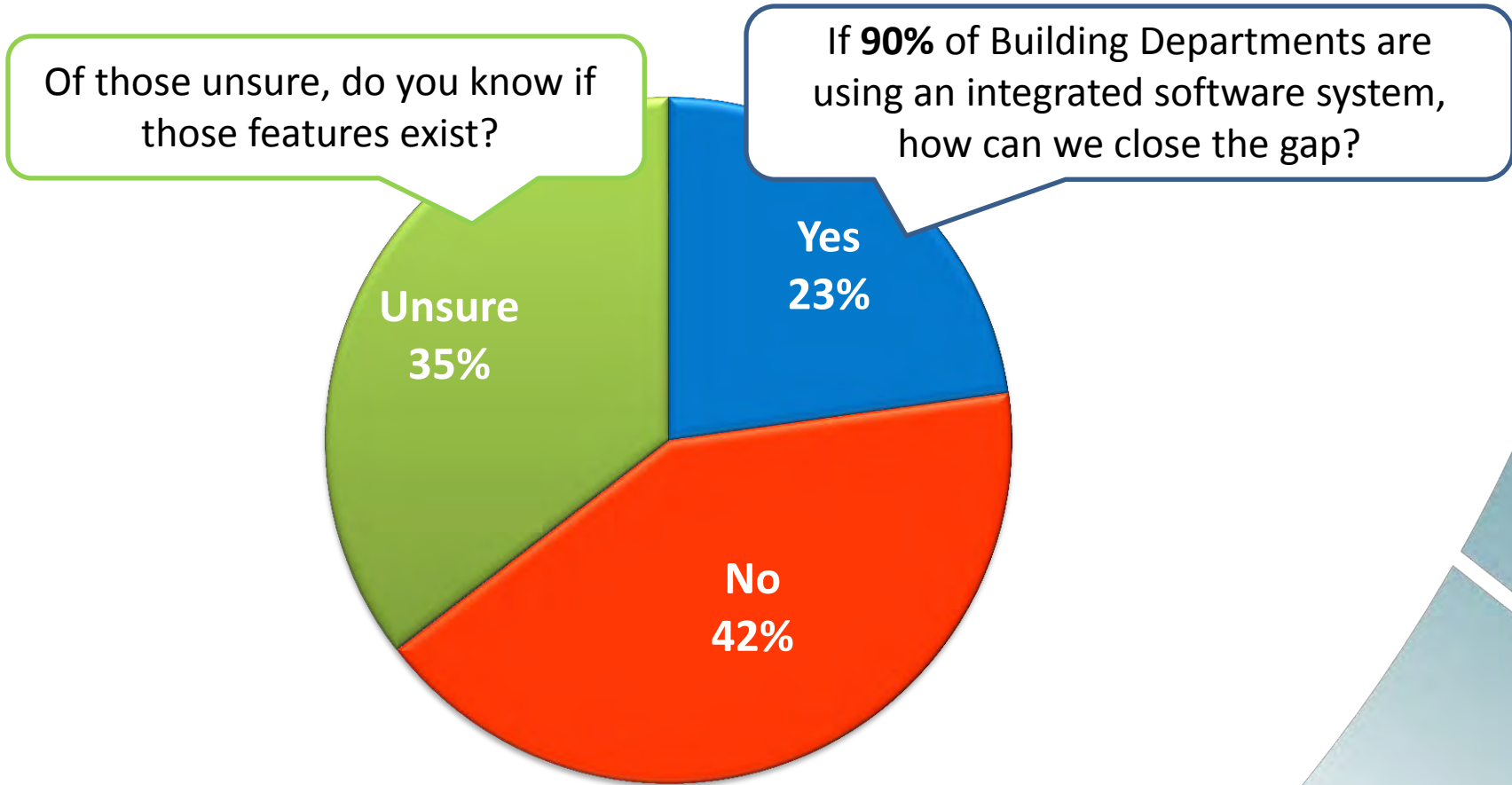


What software vendor are you currently using or considering?

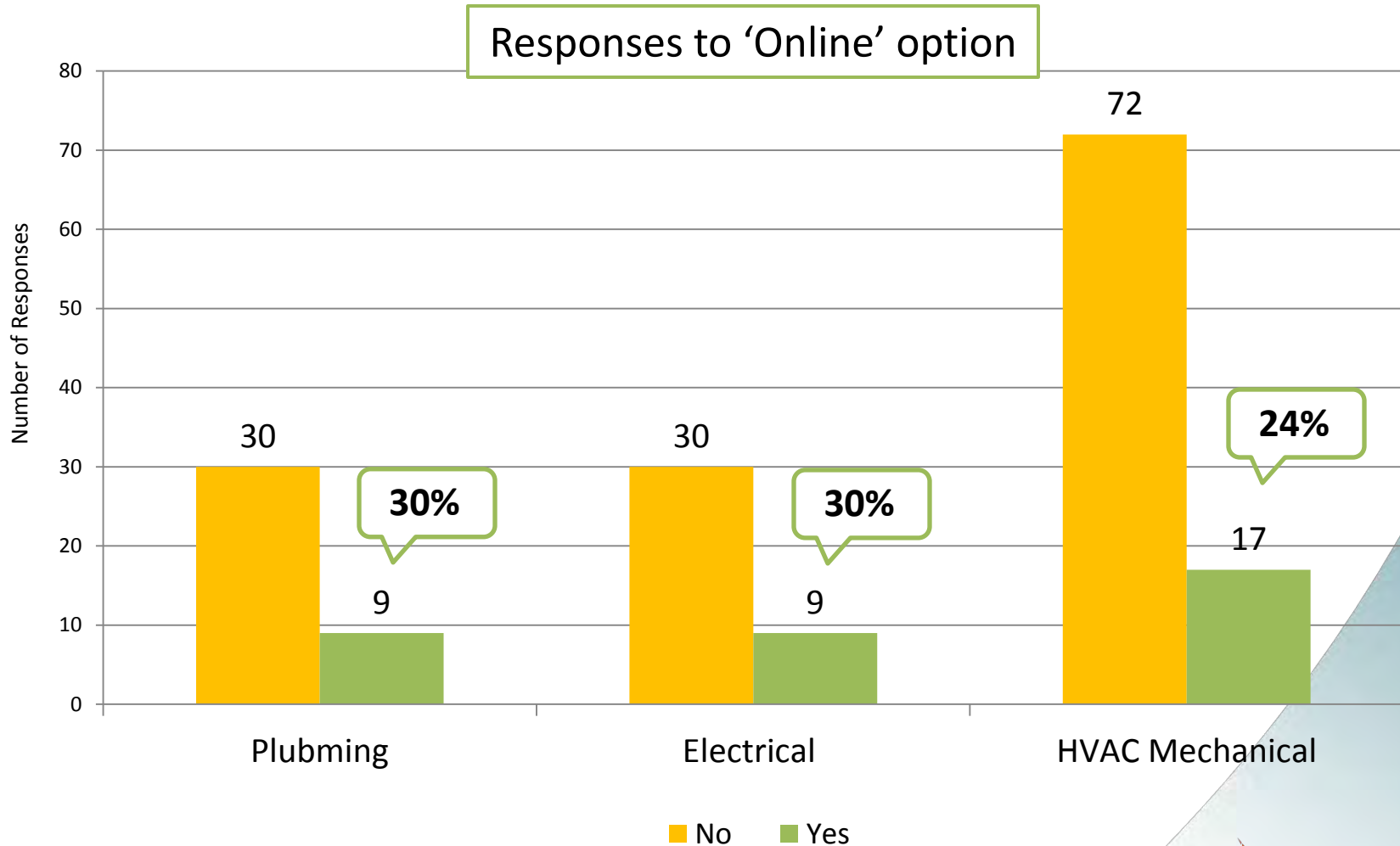


CBO, Plans Examiner, Building Inspector, Permit Tech, Planner Q.

Does your integrated software system allow for inputting residential Title 24 measures?



What are the options for submitting a permit application for a residential energy upgrade/retrofit involving plumbing, electrical and HVAC/mechanical measures?



CBO, Plans Examiner, Building Inspector, Permit Tech, Planner Q.

Which of these resources does your Building Department make available online?

Online Permitting Resources

| Have Permitting Software | Make Permit Applications Accessible | Allow Applicants to Track Permits | Accept Permit Applications Online (Avg) |
|--------------------------|-------------------------------------|-----------------------------------|---|
| 90% | 86% | 32% | 28% |

➤ 152 responses

Which of these resources does your Building Department make available online?

Online Permitting Resources

| Have Permitting Software | Make Permit Application Accessible | Allow Applicants to Track Permits | Accept Permit Applications Online (Avg) |
|--------------------------|------------------------------------|-----------------------------------|---|
| 100% | 100% | 100% | 100% |



➤ 152 responses

PERMIT TRACKING: Survey Takeaways

- **33%** of Bldg. Depts. offer accelerated permitting.
 - Are applicants aware?
 - Would more consider offering?
- **37%** of Bldg. Depts. are willing to consider altering the plan review process for projects that receive 3rd party QA/QC.
 - How would this work? What are the concerns and limitations?
- **33%** of Bldg. Depts. are willing to consider forgoing field inspection for projects that receive 3rd party QA/QC.
 - How would this work? What are the concerns and limitations?
- **90%** of Bldg. Depts. are using or planning to use permit tracking software systems yet, on average...
- **32%** of Bldg. Depts. provide online permit tracking, and....
- **28%** of Bldg. Depts. accept permit applications online.
 - Why the disconnect?

A 3D architectural model featuring several colorful arrows (blue, yellow, red) and brick walls in various colors (orange, brown, grey). The arrows are positioned as if they are navigating through or over the brick walls. The background is a light, neutral color.

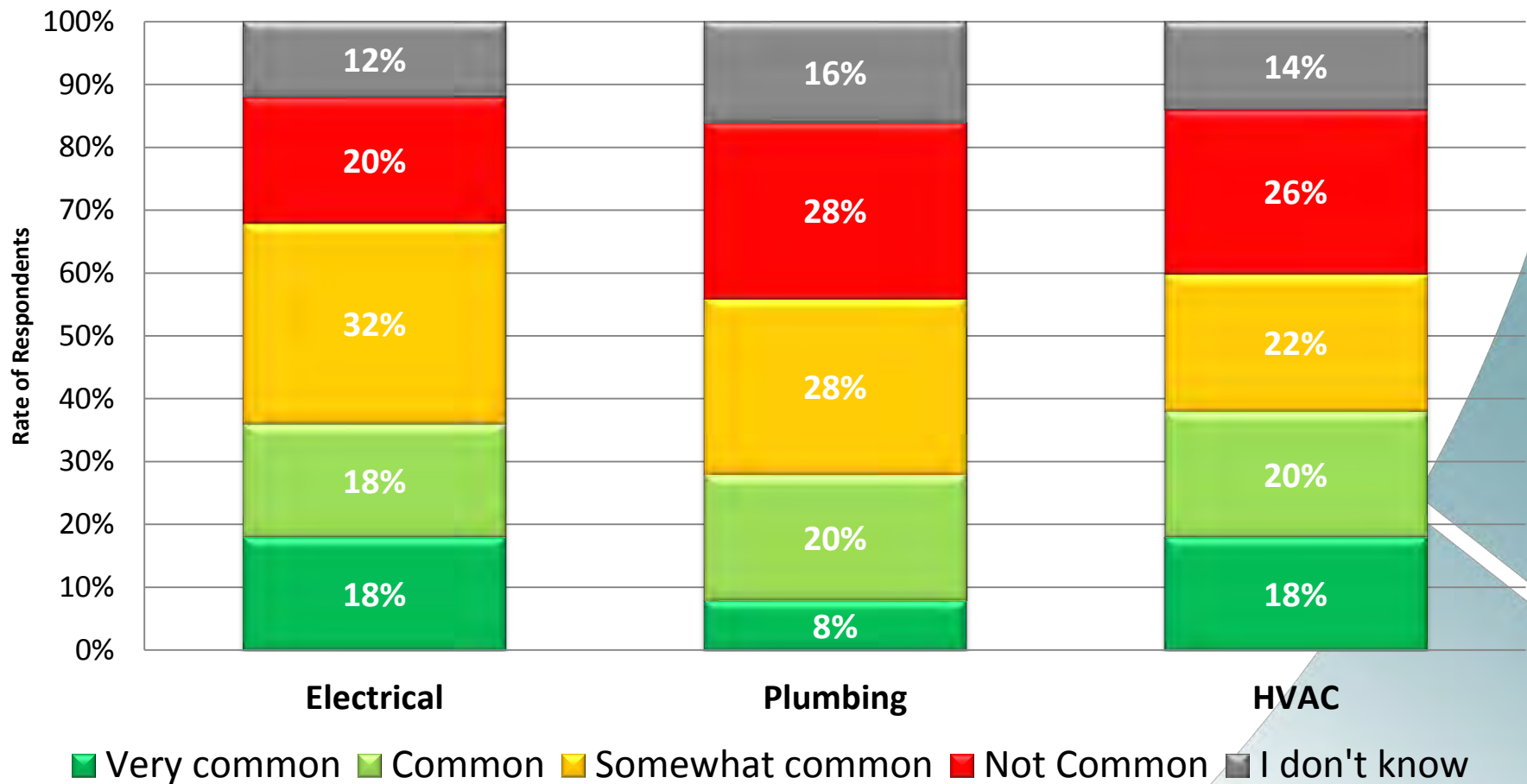
HVAC Permit Compliance Survey

PERMIT COMPLIANCE BARRIERS

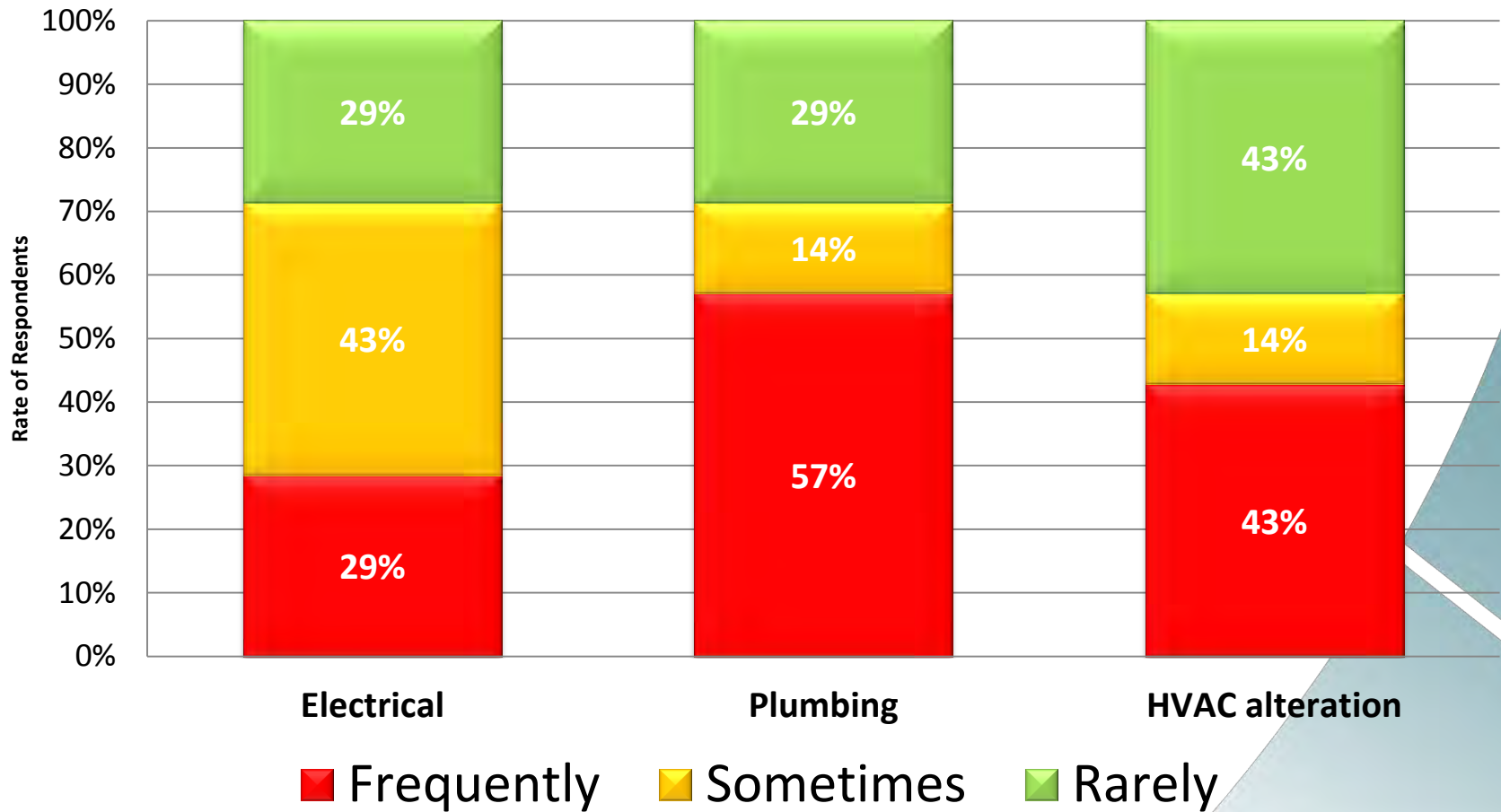
Section 4: PERMIT COMPLIANCE BARRIERS

- How important is Title 24, Part 6 to Building Departments?
- How frequently are permits pulled?
- What discourages contractors or homeowners from pulling permits?
- What are the largest barriers to compliance?

How frequently do you think permits are pulled when one is required for a residential energy upgrade/retrofit involving these measures?

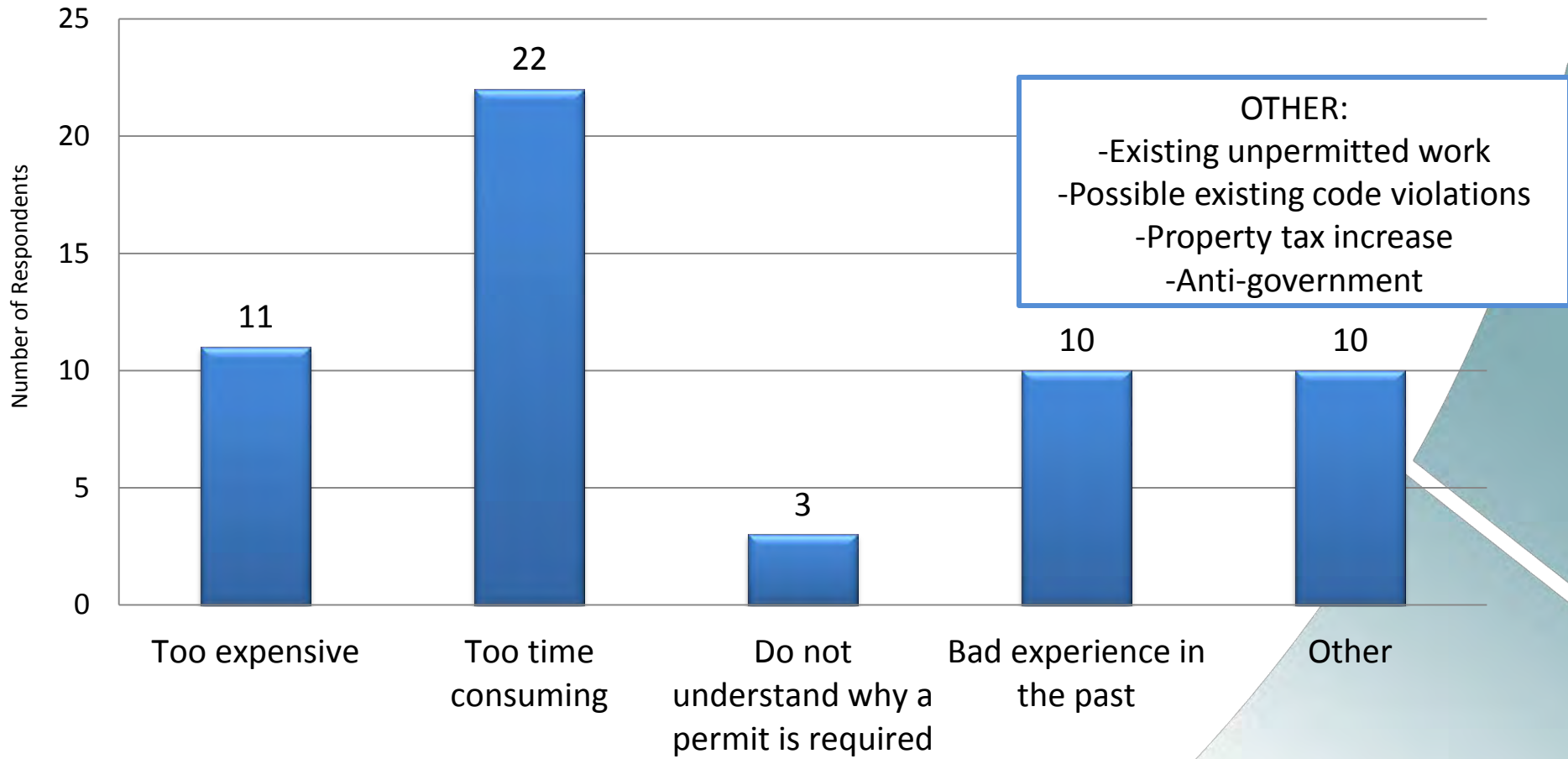


How often do homeowners request that you do not pull a permit?



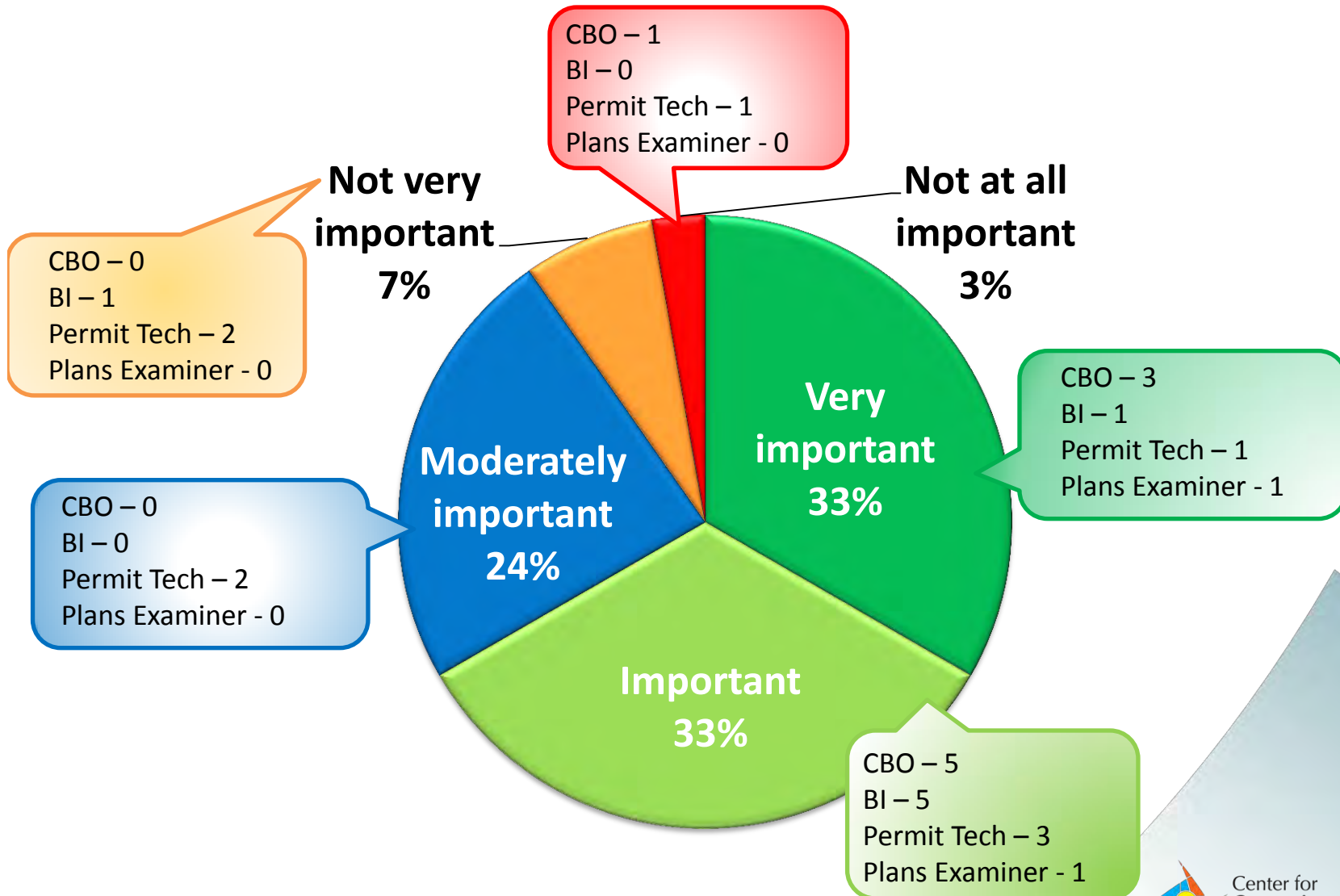
Contractor Q.

When homeowners request to not pull a permit for a energy upgrade/retrofit involving electrical, mechanical or plumbing measures, what reasons do they give?



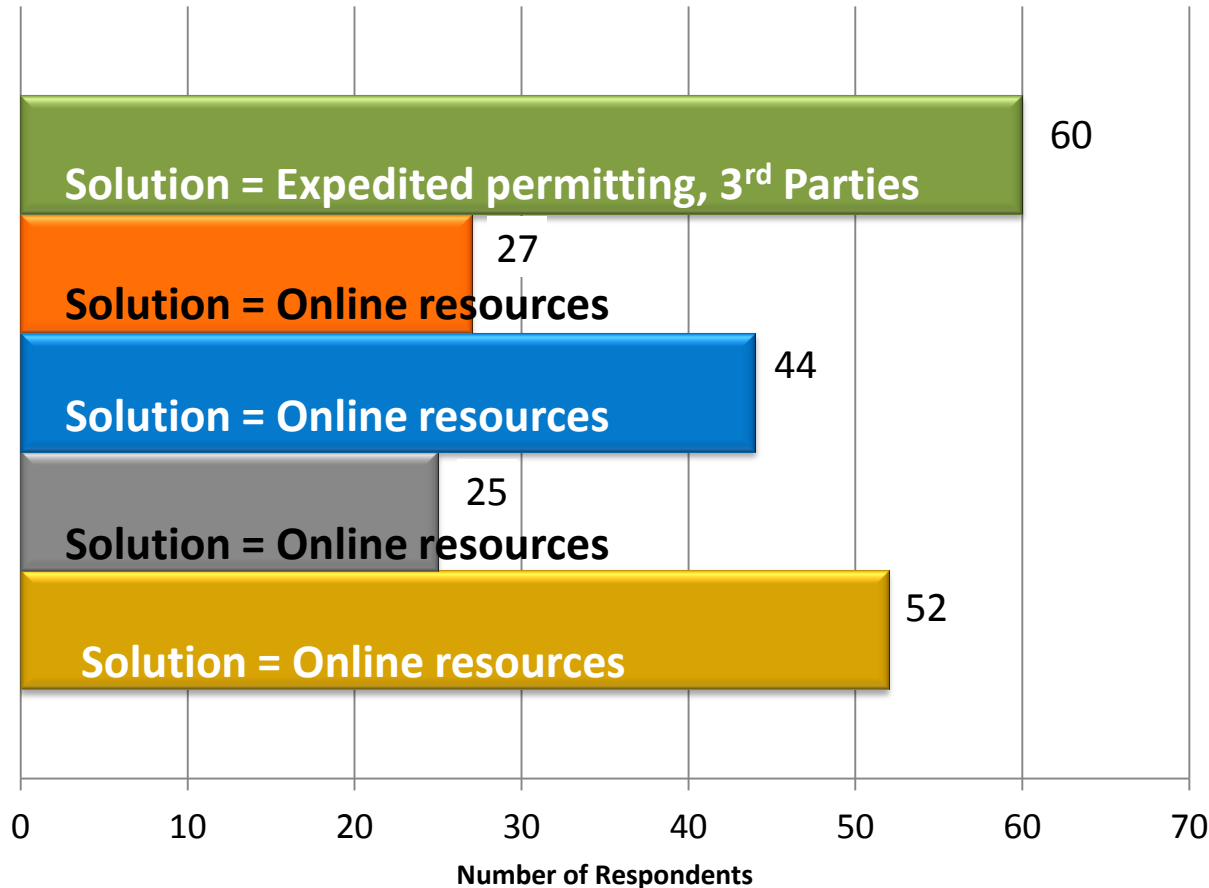
Contractor Q.

How important is implementation of residential Energy Code (Title 24, Part 6) relative to your responsibilities?



CBO, Plans Examiner, Building Inspector & Permit Tech Q.

What are the biggest barriers to residential alterations permit compliance?



- Cost to homeowner/contractor
- Lack of knowledge/understanding about permit process
- Lack of knowledge/understanding about Energy Code
- Determining applicable requirements
- Compliance forms/paperwork

Contractor & Rater Q.

Next Steps

- Consider your ability to implement identified best practices
 - ✓ Increase the quantity and quality of code & permit information on your website
 - ✓ Use checklists during plan review and promote their use by applicants
 - ✓ Establish a functional expedited permit process for qualifying projects
 - ✓ Alter/minimize the plan check process for qualifying contractors and/or projects (e.g. Home Upgrade projects)
 - ✓ Reduce inspection rates for qualifying contractors/projects (e.g. Home Upgrade projects)
 - ✓ Use contracted inspectors for more projects
 - ✓ Use HERS compliance documentation to serve more purposes
 - ✓ Consider online permitting for specific projects

More Next Steps

- Reach out to CSE with any additional thoughts or requests for more information on HVAC permitting
 - Visit www.energycenter.org/permitting for more information on CSE permitting initiatives
 - Visit <http://energycenter.org/policy/local-governments> for practical local government resources
- Stay tuned for the *HVAC Permit Compliance Best Practice Guide*
 - Learn more about tools & resources, web platforms, and 3rd party software programs that make your job easier!

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