

**Appendix A**

**Albany County**  
**Stormwater Coalition Report**

**Stormwater Coalition of Albany County  
Green Infrastructure Model Local Law Project**

**Summary Report:  
Process, Findings, and Implementation**

**November 2013**

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Green Infrastructure Model Local Law Project

Summary Report:  
Process, Findings, and Implementation

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*The project name is Green Infrastructure Local Laws and Storm System Mapping Project and the local project sponsor is the Stormwater Coalition of Albany County, with Albany County serving as host of the Coalition and grant recipient.*



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## **Executive Summary**

The Stormwater Coalition of Albany County (Coalition) is comprised of 11 municipalities, Albany County, and the University at Albany (SUNY) who each provide mutual support and assistance in implementation of the New York State Department of Environmental Conservation (NYSDEC) Municipal Separate Storm Sewer System (MS4) Permit requirements.

In 2010, the Coalition applied for a NYSDEC Water Quality Improvement Grant to provide funding assistance to carry out several elements of the NYSDEC MS4 Permit. Among those elements is that municipalities are encouraged to review and revise, where appropriate, local codes and laws which preclude green infrastructure and, to the maximum extent practical, consider the principles of Low Impact Development, Better Site Design, and Green Infrastructure when developing planning documents and updating regulations. While MS4s already oversee compliance with the Construction Activity Permit and related green infrastructure requirements, these additional program elements further support the use of green infrastructure at the local level.

With funding awarded, in September 2011 the Coalition put out an RFP for a consultant team to assist with, and carry out, the Green Infrastructure Model Local Law Project which included:

- Inventory existing Comprehensive Plans and Local Laws for Green Infrastructure strategies and Smart Growth principles by using a modified Water Quality Scorecard (task completed by the Coalition)
- Identify green infrastructure local law “gaps” by reviewing the scorecards
- Research other green infrastructure local laws, and develop a Model Local Law or set of Laws beneficial to the unique needs of Coalition members
- Present these model local law(s) to the land use decision makers associated with each Coalition member municipality

- Solicit feedback from land use decision makers regarding the content of the model local laws and their intentions

The methodology, findings, and results of the Green Infrastructure Model Local Law Project are presented herein.

## **1.0 Stormwater Coalition of Albany County**

The Stormwater Coalition of Albany County (Coalition) is comprised of 11 municipalities (Towns, Villages, and Cities), Albany County, and the University at Albany (SUNY) with each providing mutual support and assistance in implementation of the New York State Department of Environmental Conservation (NYSDEC) Municipal Separate Storm Sewer System (MS4) Permit requirements. The Coalition was formed in 2008 by local governments in Albany County that previously participated in two NYSDEC Stormwater Implementation grants. Membership is open to municipalities and public institutions that are regulated by the Clean Water Act, as well as unregulated municipalities. During the time of this project, Coalition members were as follows:

1. City of Albany
2. Albany County
3. Town of Bethlehem
4. City of Cohoes
5. Town of Colonie
6. Village of Colonie
7. Village of Green Island
8. Town of Guilderland
9. Village of Menands
10. Town of New Scotland
11. Village of Voorheesville
12. City of Watervliet
13. University at Albany - State University of New York

The Coalition is an independent, self-funded organization which relies on annual membership fees to cover administrative expenses. Albany County is both a dues-paying Member and host of the Coalition, providing office space and administrative support to the Coalition. In addition to serving as the central resource for Coalition members in compliance and implementation of MS4 Permit requirements, members

collaboratively implement various components of a comprehensive Stormwater Management Program which addresses each of the following:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Detection and Elimination of Illicit Stormwater Discharges
4. Construction Site Stormwater Runoff Control
5. Post- Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The Coalition is governed by a Board of Directors, which consists of one representative from each participating “MS4” municipality. In addition, all Member Participants are co-signatories of an inter-municipal agreement which outlines the organizational structure, conditions and terms of membership, and applicable fee schedules for Member Participants.

## **2.0 Project Background and Purpose**

In November 2009, the Stormwater Coalition of Albany County applied for a NYSDEC Environmental Protection Fund Water Quality Improvement Project grant. The purpose of the grant was to fund storm system mapping as described in the NYSDEC SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s); educate land use decision makers about green infrastructure; and develop Green Infrastructure Model Local Law(s) for use by interested municipalities.

In December 2010 the Coalition was awarded the grant, and by mid-April 2011 the work plan was submitted to, and approved by, NYSDEC. This report will focus on the Green Infrastructure Model Local Law Project, with particular attention paid to the action steps as described in the grant application and later articulated in the grant work plan. The Training Needs Survey, which pertains to Step 1 of the grant application (Education of Land Use Decision Makers), is included in Appendix A.

### Grant Action Steps:

*Step 1:* Educate land use decision makers, Town and/or Town Designated Engineers in green infrastructure techniques. This will be accomplished by conducting a survey of all land use decision makers in each Stormwater Coalition municipality. The survey instrument will serve to identify knowledge gaps. From that, training workshops targeting the identified priority concepts will be developed and conducted. The workshops will be designed such that they also provide the required 4-hour NYSDOS Planning Board member training. Expanding the core knowledge of municipal leaders will encourage a more in-depth review of development proposals, and assist in efforts to update local land use laws to encourage green infrastructure.

*Step 2:* Inventory existing Comprehensive Plans and Local Laws for Green Infrastructure strategies and Smart Growth principles. This assessment may utilize guidance documents such as the list of New York State Smart Growth Principles, NY

Code Ordinance Worksheet, LEED for Neighborhood Development (2009), and U.S. EPA Managing Wet Weather with Green Infrastructure Municipal Handbook-Water Quality Scorecard (April, 2009).

*Step 3:* Research other green infrastructure local laws. Based on the results of the local law inventory and research, as well as input from Coalition members and others, develop a Model Local Law or set of Model Laws beneficial to the unique needs of Coalition members. To assist in researching other local laws and drafting the model law(s) or guiding principles, outside counsel would be hired with grant money.

*Step 4:* Within the context of the MS4 Permit requirements and anticipated changes to the Construction Activity Permit and NYSDEC Design Manual, present these model local law(s) to the land use decision makers associated with each Coalition member municipality. At that point, ask the Coalition member governing board members to consider adopting the green infrastructure model law(s), and solicit feedback regarding their intentions, both immediate and long term.

Given the timing of the grant application (2009); submission of the grant work plan (early, 2010); and the release of the NYSDEC Stormwater Design Manual in August, 2010 mandating the use of green infrastructure practices, the updated Design Manual introduced a sense of urgency to the project.

A parallel effort to develop a combined sewer overflow long-term control plan (CSO LTCP) for the Albany Pool communities (including four of the Coalition members) also created value and interest in the green infrastructure model local law project. While all of these Clean Water Act permits actively encourage the use of green infrastructure, land use law in New York State is such that municipal ordinance language can prevent or discourage the use of green infrastructure, Therefore a focused effort to address these existing legal underpinnings, given these broader Clean Water Act permit requirements, proved to be a well-timed initiative.

With this as background, soon after the release of the Design Manual (fall, 2010), the Stormwater Coalition established the Green Infrastructure Local Law Advisory Committee (GILLAC). GILLAC consisted of staff from member communities with planning and code enforcement responsibilities. GILLAC focused their initial efforts on developing, implementing, and compiling the results of the Green Infrastructure Training Needs Survey, which was distributed to MS4/municipal staff, elected officials, and appointed members of planning, zoning, and conservation advisory boards.

By mid-2011 a Request for Proposals was developed and approved by GILLAC, and was circulated by the Albany County Purchasing Department to consulting firms potentially interested in bidding on the Model Local Law project. By January, 2012 the consulting firm, Barton and Loguidice, with legal support from Young/Sommer services, was selected and soon under contract to begin work on the Green Infrastructure Model Local Law Project. Once hired, the Team most directly involved with all aspects of the project took shape and it included Nadine Medina, PE from Barton & Loguidice, PC; Jeff Baker, Esq from Young/Sommer; and the two GILLAC Co-Chairs, Nancy Heinzen, Stormwater Coalition Program Coordinator and Leslie Lombardo, Senior Planner, Albany County Planning Board. The GILLAC Co-Chairs served as a liaison to the remaining Coalition members.

In addition to the Training Needs Survey, GILLAC also developed the Stormwater Coalition Scorecard. This scorecard is the analytical tool that was used to evaluate existing land use laws. It was distributed to, and filled out by, Coalition members in mid-2011 and completed prior to hiring the consulting firm.

It should be noted that the Coalition includes several types of regulated MS4s. Most are municipalities with the legal authority to adopt land use regulations, such as zoning ordinances, and these are towns, villages, and cities. They are described as Traditional Land Use Control MS4s. The other types of MS4 lack this kind of land use authority. However, if still an elected political entity it is referred to as a Traditional Non Land Use Control MS4 (Albany County). If not an elected political entity, it is referred to as a Non Traditional MS4 (University at Albany-SUNY). Regardless of the type of MS4,

all of these MS4s are public entities which own land and are therefore subject to the NYSDEC General Permit for Construction Activity. The impetus for requiring that permit is any land disturbance equal to or greater than one (1) acre, for which there may be green infrastructure requirements.

Despite limited opportunities to influence land use, throughout this project representatives from Albany County and University at Albany-SUNY fully participated in all aspects of the inventory and related discussions. Their contributions highlighted various opportunities to encourage green infrastructure within their respective organizations and related bureaucracies. The Town of Guilderland, although an original Coalition member, left the Coalition prior to the project commencing and rejoined the Coalition after the project was underway. Consequently, they did not participate in the inventory but did get involved with evaluating proposed local law language.

The attentiveness to green infrastructure is based on well-documented research regarding various water quality, energy conservation, and flood mitigation benefits. Better site design encourages a careful look at the natural conditions of a site, suggesting ways to work with natural systems to manage stormwater. By directing rooftop runoff to nearby rain gardens, stormwater is held back allowing pollutants and sediment to settle out. Evapotranspiration associated with plants also moves water up and out into the atmosphere, reducing the amount of stormwater entering the conveyance system. The alteration of street design and parking requirements can potentially reduce impervious cover, which reduces the amount of stormwater runoff. On a larger scale, stream buffers intercept sediment and pollutants in addition to stabilizing streams. Together these strategies address a variety of pollutants of concern, as well as control stormwater at its source and reduce the quantity of stormwater requiring treatment. The value of these technical considerations is the driver behind the push to utilize more green infrastructure.

### **3.0 Project Methodology**

#### **3.1 Scorecard Evaluation**

Prior to securing consultant services, Coalition members developed the Scorecard (see Appendix B). This Scorecard drew from the Center for Watershed Protection Code and Ordinance Worksheet; the Code and Ordinance Worksheet for Development Rules in New York State (developed by the NYSDEC Hudson River Estuary Program, NYS Water Resources Institute in Cooperation with the Center for Watershed Protection); and the USEPA Managing Wet Weather with Green Infrastructure Municipal Handbook – Water Quality Scorecard, October, 2009.

The purpose of the Scorecard was to evaluate existing municipal zoning ordinances, comprehensive plans, review procedures, and local laws against recognized green infrastructure practices. By doing so, members of the SW Coalition (all MS4s) simultaneously fulfilled various MS4 Permit requirements detailed in Part VII.A.5.a.iv and Part VIII.A.5.a.iv. of the MS4 Permit. The overall intent was to identify obstacles to using green infrastructures and, based on information provided within the Scorecard, to develop language to remove those obstacles. This serves to actively encourage the use of green infrastructure independent of Construction Activity Permit requirements.

The Stormwater Coalition Scorecard combined features of the various local law assessment tools, such that both developing and developed municipalities can be evaluated using one, easy to use, Scorecard, suitable for all MS4 Permit regulated members of the Coalition.

The Scorecard resulted in an overall “Green Score” given to each MS4. In addition to overall scores, the total score was broken out into sub- scores for various green infrastructure topic areas within the Scorecard, as follows:

- Reduction of Impervious Cover
- Preservation of Natural Areas and Conservation Design
- Design Elements for Stormwater Management
- Promotion of Efficient, Compact Development Patterns and Infill

MS4s were provided with both the Scorecard, and a guidance document providing insight as to how to complete the Scorecard. They were instructed to first identify all the development rules that apply in their municipality. They were instructed to then identify the local, state, and federal authorities that administer or enforce the development rules within their municipality. The final instruction provided was to answer the questions within the scorecard and to score themselves according to their answers.

Completed scorecards were provided to the Co-Chairs of GILLAC, at which point the scorecards were reviewed and resulting scores corrected, as needed (see Appendix C). The reviewer of the scorecards was Ms. Leslie Lombardo, Senior Planner for Albany County. Ms. Lombardo's experience with the local laws of Coalition members from the development review process enabled her to add to the MS4 recorded regulations and policies with comments, revisions, and explanations to better match the intent of the scorecard questions and maintain a consistency between all MS4's answers.

### *3.1.1 Scorecard Analysis Process*

Several steps were required in the effort to review and adjust the scorecards. Care was taken to ensure accurate revisions were made, and references to the corresponding local law or guidance were provided where necessary. The following outlines the detailed process Ms. Lombardo undertook to analyze the scorecards:

1. Checked, and corrected if necessary, the math on scorecard subtotals.

2. Confirmed references to municipal code, where provided, and added clarification if needed
3. Added a column to each scorecard labeled “real score if no code”, and went back through scorecards to add or remove points based on MS4 notes such as “No code” or “Handled by review process of Planning Board or staff”, etc. These indicated situations in which there was no legal underpinning upholding the requirement to adhere to green infrastructure/low impact development guidelines, which represented a gap in the local law framework
  - a. The “real score if no code” was needed so that all municipalities could be assessed on the same base level. Two MS4s, City of Cohoes and Village of Menands, proactively did not take points for policy or practices not in the written code; therefore their points were not adjusted.
4. In the notes and clarifications column on the scorecard, the MS4 explained if the issue raised by the question was already addressed by the Planning Board. It also includes information about what may be standard municipal policy or practice, even if not incorporated into code. Ms. Lombardo added clarification notes to this column as needed to assist in consultant analysis.

These revised scores, along with original scores, were provided to the Consultant Team for analysis. The Consultant Team reviewed the scorecards and discovered that there were instances in which responses were inconsistent between MS4s. For example, Question 39 of the Scorecard asks “Does the municipality provide incentives for development on previously altered sites or in designated priority growth areas?” Some

MS4s answered “Yes”, earning a point, and citing their Stormwater Local Law, which includes, by reference, the New York State Stormwater Design Manual requirements. This manual provides leniency regarding stormwater management if a project is considered redevelopment. However, all traditional MS4s, which includes all Cities, Towns, and Villages within the Coalition, have adopted this same stormwater local law but not all MS4s answered “Yes”. This led the Consultant Team to question the clarity and intent of this particular question, as well as other questions. Because of this knowledge, all scores were adjusted a final time to ensure that questions such as these were scored consistently.

Another issue identified by the Consultant Team was that some questions simply did not apply to all MS4s. In some cases, municipalities stated that the question was “Not Applicable”. Responses from SUNY and Albany, because they do not have land use control, included many “Not Applicable” designations. This required them to answer “No”, which resulted in an artificially lower overall score.

Finally, the Project Team (consisting of the consultants and the co-chairs of GILLAC) determined that some of the scorecard questions could best be addressed by additional MS4 education rather than provisions in a local law. A few examples of questions considered to be best addressed by other efforts, outside of legal language, are included below:

- Question 33: “Has the local government/other public institution identified and mapped critical natural resource areas (e.g. steep slopes, wildlife habitat, drinking water source areas including aquifer recharge areas/well head protection zone)”

- Question 72: “Does the municipality provide information to landowners about reduced tax assessment under NYS Forest Tax Law, Section 480-A of Real Property Tax Law?”
- Question 85: “Local government/other public institution provides information brochure /manual for homeowners/agencies describing acceptable rainwater harvesting techniques.”

### 3.2 Gap Analysis

The Project Team held a meeting to review the scorecard analysis and to discuss the issues identified. The Project Team decided that scoring municipalities based on questions that were not applicable to them (i.e. could not possibly be achieved) did not serve to accurately reflect the MS4’s existing support for green infrastructure. Therefore, while the overall scores were helpful in the big-picture approach it was decided that an alternative assessment of the scores was needed to address this issue of not applicable answers. Secondly, scorecard questions that the Project Team agreed would be best addressed through an effort other than a local law, such as educational outreach needs, were removed from the analysis, as they were not relevant to the project deliverable. Therefore, a further refined version of the scorecard was created, which takes into account these issues (see Appendix D).

Ultimately, the Project Team decided to use a numeric approach, based on percent of positive responses (response of “yes”), to analyze the data. With that being the chosen method of analysis, the percent data was grouped in various ways to provide a more precise illustration of the results. The Project Team did not believe that comparing all Coalition MS4’s scores to one another would provide a consistent review approach. Traditional Non-Land Use and Non-Traditional MS4s, such as the County of Albany or University at Albany-SUNY, do not experience the same issues or have the same opportunities as

other, traditional, MS4s such as the Cities, Towns, and Villages. Similarly, issues and opportunities experienced by Towns may vary from those experienced by Cities, which may significantly vary from those experienced by Villages. Therefore, the Team decided to not only provide an overall Gap Analysis incorporating all MS4s but also separate Gap Analysis for Cities, Towns, Villages, and Non-Traditional MS4s. From this, the following gap analysis spreadsheets were developed:

### *3.2.1 All MS4 Gap Analysis (Appendix E):*

Displays the percent of all Coalition MS4's who answered a question in the "positive" out of all MS4's to which the question applied. If the MS4 answered "NA" or "Not Applicable", they were not considered an MS4 to which the question applied and was therefore taken out of the calculation for that question. The reason for this is that it did not seem appropriate to hold MS4s "accountable" to questions they were simply unable to achieve a positive answer for, which occurred most frequently for SUNY and the County. There are four workbooks included, one for each scorecard category. Within each workbook is a spreadsheet that illustrates the category results, as well as a spreadsheet illustrating the results for each subcategory.

### *3.2.2 Non-Traditional/Traditional Non-Land Use Gap Analysis (Appendix F):*

Displays the percent of all Non-Traditional MS4s who answered a question in the "positive" out of all MS4's to which the question applied. If the MS4 answered "NA" or "Not Applicable", they were not considered an MS4 to which the question applied and were therefore taken out of the calculation for that question. This occurred for several questions throughout the scorecard, as many of the questions related to the development of homes, shared driveways, shopping centers, and other

municipal issues that apply to neither SUNY nor the County. There are four workbooks included, one for each category. Within each workbook is a spreadsheet that illustrates the category results, as well as a spreadsheet illustrating the results for each subcategory.

### *3.2.3 Cities Gap Analysis (Appendix G):*

Displays the percent of all Cities who answered a question in the “positive” out of all MS4’s to which the question applied. There are four workbooks included, one for each category. Within each workbook is a spreadsheet that illustrates the category results, as well as a spreadsheet illustrating the results for each subcategory.

### *3.2.4 Towns Gap Analysis (Appendix H):*

Displays the percent of all Towns who answered a question in the “positive” out of all MS4’s to which the question applied. If the MS4 answered “NA” or “Not Applicable”, they were not considered an MS4 to which the question applied and were therefore taken out of the calculation for that question. The reason for this is that it did not seem appropriate to hold MS4s “accountable” to questions they were simply unable to achieve a positive answer for. This occurred for two questions. There are four workbooks included, one for each category. Within each workbook is a spreadsheet that illustrates the category results, as well as a spreadsheet illustrating the results for each subcategory.

### *3.2.5 Villages Gap Analysis (Appendix I):*

Displays the percent of all Villages who answered a question in the “positive” out of all MS4’s to which the question applied. If the MS4 answered “NA” or “Not Applicable”, they were not considered an MS4 to which the question applied and were therefore taken out of the calculation

for that question. The reason for this is that it did not seem appropriate to hold MS4s “accountable” to questions they were simply unable to achieve a positive answer for. This occurred for only one question. There are four workbooks included, one for each category. Within each workbook is a spreadsheet that illustrates the category results, as well as a spreadsheet illustrating the results for each subcategory.

### *3.2.6 Municipal Scores by Category (Appendix J):*

Displays the scores of each MS4 based upon only those questions that were applicable. Questions that were reported as “NA” were removed from the analysis for each MS4 (this is illustrated in the yellow highlighted row named “Possible Points”). There are five workbooks included, one for each category and a master. Within each workbook is a spreadsheet that illustrates the category scores.

### 3.3 Gap Identification and Selection

The Consultant Team reviewed the gap analysis spreadsheets to identify green infrastructure local law shortcoming, or “gaps”. To provide a graphical representation, an Excel workbook titled “Sorted Final Gap Identification” (see Appendix K) was created. The spreadsheets in this workbook visually present the percentage of traditional MS4s (towns, villages, and cities) who answered positively to each question on the scorecard. Albany County and SUNY were removed from this final analysis because it was decided that, because of their unique needs, they required a separate, more customized, document as a project deliverable. On a bar chart that graphs scorecard questions against the percentage of positive results, three additional thresholds (lines) of 10%, 25%, and 50% were added to the graph to illustrate which scorecard questions were addressed by a majority (over 50%) of the MS4s. For ease of review, the questions were then sorted in ascending order in terms of percent positive response. Those scorecard questions that were already addressed by a majority

(over 50%) were determined to not be priority gaps areas for the Coalition as a whole.

The Project Team came up with 14 potential gaps, out of which only 8 would be addressed due to the project scope. The gaps were comprised of groupings of scorecard questions that the Project Team felt were similar enough to be addressed under one local law. For example, the proposed gap “Parking” included all scorecard questions related to parking lot design, shared parking, and parking ratios which was a total of 11 scorecard questions to be addressed by way of legal language related to this gap. The purpose of the Project Team paring down the scorecard was to provide a more manageable presentation to the Coalition members from which to select their final 8 gaps. Because the Project Team regularly communicated on budgetary and time constraints, it was determined this would be the most feasible way to provide opportunity for selection to the Coalition. GILLAC met to discuss the draft gap list, and to determine which of the 14 they would select for the project deliverables. All members of GILLAC determined that they wanted to consider the gaps more thoroughly and discuss them with relevant MS4 staff before committing to a set of deliverables. Once they took the necessary time to consider the set of gaps, each MS4 ranked the 14 gaps in order of 1-14 (1 being the gap they feel most relevant and 14 being the gap they feel least relevant) and provided this to the GILLAC Chairs. The GILLAC Co-Chairs compiled all of the MS4 rankings that were provided to them, and they produced a summary ranking of all gaps which they then provided to the Consultant Team. Appendix L provides the gap ranking by all MS4s, as well as a more detailed document that illustrates the content of each scorecard question included within each gap. The content of the questions within each gap would ultimately serve as the foundation for development of the final gap language by the Consultant Team. The Consultant Team was then able to determine which of the 14 gaps were the Coalition’s top 8, and those became the selected gaps. These include, in order of ranking:

1. Parking (Parking Ratios, Parking Lot Design, Shared Parking)
2. Rooftop Runoff
3. Vegetated Open Channels
4. Locating Sites in Less Sensitive Areas & Clearing and Grading
5. Open Space Management
6. Model Local Law Language/Guidance for Albany County and SUNY
7. Cul-de-Sacs
8. Sidewalks and Curbs

Because of the earlier realization that the non-traditional MS4s (County of Albany and SUNY) experienced significantly unique design and process issues related to green infrastructure and development, one of the original 14 proposed gaps was a custom model local law/guidance document for the non-traditional/traditional non-land use MS4s. This gap was ranked as number 6 in the final gap ranking process. The Consultant Team, while not originally intending to produce separate local laws or guidance geared to a specific MS4, understood the unique issues experienced by the non-traditional/traditional non-land use MS4s and agreed to produce guidance or law language to address their green infrastructure needs. In order to gain a better understanding of what each of the two non-traditional entities desired as a project deliverable, the Project Team prepared a questionnaire that was provided to each of the two MS4s. This questionnaire is included as Appendix M. Albany County included several attachments, indicating County Departments, County-owned facilities and roads, and other information they felt was pertinent to the project. Upon review of those questionnaires, the Consultant team proposed the following:

### 3.3.1 Albany County:

The Consultant Team proposed to prepare a local law for the County that clarifies the relationships between the County Departments when it comes to facility planning and provides clarity for complying with the MS4 requirements. A draft local law would include the following elements:

- Reference to the NYSDEC General Permit GP-0-10-001 (SPDES General Permit for Stormwater Discharges from Construction Activity) requirements and NYS Stormwater Management Design Manual as governing documents.
- The Local Law would state that regardless of whether a project is considered redevelopment or new development, per the definitions in the New York State Stormwater Management Design Manual, it must comply with the local law. However, projects of less than 1 acre of disturbance (clearing, grubbing, disturbing the bottom 6” of existing subbase, excavation, etc) would not be required to comply. The local law would require that applicable projects include and incorporate green infrastructure features (as identified and defined in the remaining 7 gaps, as applicable to County projects) and must include them in design and bid documents.
- This document will provide a clear path for review responsibility (Stormwater Management Officer and County Departments referenced), applicability (County-owned Facilities and Roads will be referenced and disturbance size stated), and specific green infrastructure standards resulting from the other 7 gaps, with sections not applicable being omitted by County if desired.

- We will state that this law is applicable to County Facilities and Roads (the draft lists provided by GILLAC to be incorporated as attachments).

### *3.3.2 University at Albany-SUNY:*

The SUNY deliverable was proposed to not be in the form of a law, but rather as an internal guidance/policy document, that substantively will be very similar to the County document, with only the gaps they specifically referenced in their questionnaire being included (Gaps 1,2,3,4, and 8). This document will also reference the departments under which this guidance will be relevant, and will be derived from the list provided by SUNY. Minor modifications that were suggested in the SUNY questionnaire will be addressed by the Consultant Team. This document will also reference the SPDES General Permit requirements to enhance the backbone of the document.

A meeting with the Project Team and representatives from both the County of Albany and SUNY was held to discuss the proposed deliverable. All parties agreed to the conditions identified above. Albany County, however, requested a guidance document rather than local law deliverable. They will incorporate the language as appropriate for their institution.

### *3.3.3 Gap Research and Draft Language*

With the gaps selected, the Consultant Team began to research relevant guidance, laws, and design standards throughout the state, as well as to document those that the Team has learned or developed through industry experience. In addition, the GILLAC Chairs provided documents they felt were useful and relevant to the process as well. Research was not performed for Gap 6, as that gap is the non-

traditional/traditional non-land use MS4 local guidance gap and will include the other 7 gaps. The search included, but was not limited to, the following resources:

- Cleveland Heights, OH Parking Code
- City of Boston Parking Ratio guidelines for their ZBA
- New York State Stormwater Management Design Manual
- Alexandria, VA Shared Park Fact Sheet
- LEED for Neighborhood Development
- Victoria, BC, Canada Shared Parking Code
- Stormwater Center Open Space Model Ordinance
- Zoning Ordinance, Calvert County, MD
- Land Preservation District Model Zoning, Montgomery County, PA
- Zoning Ordinance: Open Space Community, Hamburg Township, MI
- New York City Green Council Task Force proposed laws

Standards and guidance were recorded for each gap. Because of the desire for flexibility of each gap, all quantifiable measures (i.e. square feet of impervious area in a parking lot, diameter of a cul-de-sac, miles to mass transit, planting strip widths, etc) were given in terms of “model community”. MS4s were informed that the quantifiers provided were best numbers, and that they could choose to be more lenient. Additionally, each gap was written such that there was design guidance offered at three different levels of compliance. These levels were Minimum Action Level, Best Management Action Level, and Model Community Action Level. This afforded MS4s the opportunity to opt to enforce portions of each gap,

or allow developers to select those guidance sections they felt were most feasible. The Consultant Team believed this approach would satisfy a majority of the MS4 green infrastructure needs relevant to the selected gaps, and would provide a varying level of accountability appropriate for the community leaders comfort level and unique community goals.

Once the research and organization of the 7 gaps was complete, each gap was reviewed by a panel of industry professionals associated with the Project Team. The panel included:

- Environmental Scientist
- Civil Engineer
- Environmental Engineer
- Highway Engineer
- Landscape Architect
- Land Use Planners
- Town Designated Engineers

The panel of professionals included the following designations and certifications: CPESC, CPSWQ, CESSWI, LEED AP, PE, RLA, and AICP. The panel provided additional insight and recommendations based on their industry concentrations, and the draft gap language was distributed to the GILLAC Chairs.

GILLAC members were asked to review the draft gap language, in preparation for a meeting with all GILLAC members to discuss the draft language and provide feedback and commentary. Comments and questions were provided verbally during a series of two meetings, where all GILLAC representatives were asked to attend. All comments were recorded at the time of the meetings and were provided to the Consultant

Team. The Consultant Team was then tasked with reviewing and addressing the comments. During the review, the Consultant Team had several decisions to make regarding the feedback, including:

- Whether the feedback represented a want or a need;
- Whether the feedback provided substantive input that would serve to enhance the draft language;
- Whether the feedback could be addressed within the project scope and budget;
- Whether addressing the feedback would serve the majority;
- Whether anecdotal feedback was intended to be interpreted for implementation or if it was provided only for consideration if applicable;
- Whether feedback was a result of a misunderstanding of project intent or how the gap was presented;
- Whether feedback between varying members of GILLAC were in conflict, or represented conflicting goals or ideas; and
- Whether implementing design-related feedback was feasible given industry knowledge.

Throughout the review of GILLAC's comments, the Consultant Team noticed that some comments were repeated throughout the feedback process. These were related to the quantities provided for various lengths, widths, percentages, areas, etc. as well as the use of words such as "shall", "should", "must" and other words denoting a requirement. Also, some MS4s had greater sensitivity to the loftier language (i.e. model community language) and objected to such stringent guidelines. While these comments provided a clear snapshot of how

various Coalition members felt about the Project and its implications, some comments seemed to result from of an unclear understanding of the project scope. As such, these comments, while valuable and worthwhile to address, were not necessarily considered substantive to the content of the gap write-ups.

Once all comments were reviewed, the Consultant Team addressed those that remained after considering the conditions presented above. The Consultant Team provided revised gap language to GILLAC, and identified which comments were not addressed and why.

### 3.4 Drafting of Local Laws

After addressing GILLAC's comments, the Consultant Team organized the language within each local law to ensure that the tiered approach ("plug-and-play") the Team committed to at the onset were honored, and to increase customization opportunities for the Coalition members. This system of organization included separating the various requirements identified in each local law into one of three categories. The three tiers were established as part of the study analysis that included the scorecard, as well as review of the Coalition MS4's zoning ordinances, subdivision regulations and other related municipal code, and are as follows:

- *Minimum Action Level:* Language was considered minimum action level if the majority of MS4 communities incorporated, either by regulation or by unwritten policy of a local board, the topic area within the gap category.
- *Best Management Action Level:* Language fell into this category if the topic was included or considered in the review process by a few MS4s with newer code language. In this category, very few municipalities identified equivalent language in their policies and, in

several cases, the existing language could better serve green infrastructure if strengthened or added to. This level assumes that MS4s have adopted the Minimum Action Level language.

- *Model Community Action Level:* Gap language was placed in this category if the language was regarding topics that are relatively new to be incorporated to municipal code based on new information in engineering design for stormwater or more recent land use planning ideas, or if it represents ideas that have traditionally been considered incentives within zoning ordinance language. This level assumes that MS4s have adopted each of the preceding levels.

Additionally, several numbers (dimensions, ratios, percentages, etc) within the local law language are bolded. This indicates that the number represents the gold standard based on known industry principles and precedent set by progressive municipalities, and can be modified to best suit the MS4. It can be relaxed or made more stringent based on the MS4s existing code, future needs, community context and implementation feasibility.

In this way, the local law language represents a collection of codes that can be pulled from as deemed applicable, or used as a whole. Sections can be relaxed or made more stringent, and not all sections are necessary to use if not pertinent to a particular MS4. Each section represents a stand-alone suggested practice/language, and MS4s can decide which to implement. It is the goal of the project to provide user-friendly, customizable language to help provide the MS4 with the level of action they desire and can support internally. The final local law language is in Appendix N.

#### **4.0 Presentation and Implementation**

After the gap language was created, and Coalition members had the opportunity to take the language back to their governing boards, a presentation was provided to Coalition members and anyone else interested. The presentation outlined the project purpose and background, as well as the project methodology similarly to the content herein (Appendix O). Additionally, a decision matrix (Appendix P) was provided to each Coalition member to solicit feedback as to whether they intended to adopt the local law language. Appendix Q includes a list of all meetings and presentations associated with this project, as well as a list of meeting participants. As is evident from the list, GILLAC remained an active group of contributing participants from planning through implementation. As this was a collaborative effort, individuals with a wide variety of relevant professional experience and a diverse set of skills provided insight throughout the process. This served to enhance the project approach and ensure a thorough deliverable that represents a summation of the valuable input provided throughout the project duration.

**Appendix A**  
**Training Needs Survey**

**GREEN INFRASTRUCTURE  
Training Needs Survey**

**Sponsored by the  
Stormwater Coalition of Albany County**

**WHY A SURVEY....NOW?**

The Stormwater Coalition of Albany County (hereinafter, the Coalition) is an inter-municipal partnership working together to meet NYSDEC and EPA guidelines and requirements for stormwater management. The Coalition membership includes municipalities and others in the County who own and maintain a separate storm sewer system. Coalition members have passed legislation promulgating rules requiring the proper handling of storm water as well as enforcement powers. In order to effectively enforce the local legislation, municipal Boards and staff involved in the planning process need to understand the rapid mandated changes taking place in the stormwater management field.

In the most recent changes to the NY State Stormwater Management Design Manual, site planning for both new construction and redevelopment requires a reduction in runoff by applying green infrastructure techniques. Green infrastructure techniques or practices seek to either preserve “critical” green space or engineer natural means of treating or storing stormwater. Critical green spaces are those that currently treat stormwater onsite due to the presence of ideal soils and conditions. Engineered infrastructure may require installing natural elements to treat, store and/or direct water. The NYS Stormwater Design Manual includes a list of 12 green infrastructure techniques or practices.

The Coalition received a NYSDEC grant to create a model local law to be used by local municipalities and others who maintain a separate storm system in order to foster green infrastructure practices during development or redevelopment of land. The grant includes a provision for training of municipal/MS4 staff and board members. In order to develop the most useful and informative training, the Coalition developed a survey to assess the current level of understanding of the State stormwater permit and green infrastructure practices. As people on the front line of land use planning and stormwater management, your feedback is critical to developing training that adequately addresses these important issues.

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*For information about this survey, individual stormwater management programs, and the Stormwater Coalition, see below.*

<b>Coalition Members</b>	<b>Contact</b>	<b>Phone Number</b>	<b>Email (Survey Info)</b>
Albany County	Margaret Della Rocco/Leslie Lombardo	765-2786/447-5644	llombardo@albanycounty.com
City of Albany	Justin Schievelbein/Doug Melnick	434-5304/434-2532	melnickd@ci.albany.ny.us
T. of Bethlehem	Brian Kise/Jeffrey Lipnicky	439-4955	jlipnicky@townofbethlehem.org
City of Cohoes	Garry Nathan/Melissa Ashline-Heil	233-2131	mashline-heil@ci.cohoes.ny.us
T. of Colonie	John Dzialo/Mike Lyons	783-6292/783-2741	lyonsm@colonie.org
V. of Colonie	Carl Fleshman	869-0312	DPW@colonievillage.org
V. of Green Island	Sean Ward	273-2201	seanw@villageofgreenisland.com
T. of Guilderland	Rodger E. Stone, II	356-1980 ext 1066	stoner@townofguilderland.org
V. of Menands	Paul Reuss	434-2922	villageofmenands@hotmail.com
T. of New Scotland	Paul Cantlin	439-1215	pcantlin@townofnewscotland.com
V. of Voorheesville	Gerald Gordinier	765-2698	gordinier@nycap.rr.com
City of Watervliet	David Dressel/Rosemary Nichols	785-7082/270-3800	rosemary@watervliet.com
SUNY Albany	William Dosch	442-3436	wdosch@uamail.albany.edu
Stormwater Coalition	Nancy Heinzen	447-5645	nheinzen@albanycounty.com



**GREEN INFRASTRUCTURE**  
**Training Needs Survey**

1. Municipal/MS4 name: \_\_\_\_\_
2. What is your position in the municipality/MS4?  
Planning Board member \_\_\_\_\_  
Zoning Board member \_\_\_\_\_  
Legislative Board \_\_\_\_\_  
Staff \_\_\_\_\_ Title/Department \_\_\_\_\_  
Consultant \_\_\_\_\_  
TDE \_\_\_\_\_  
Other \_\_\_\_\_
3. Are you familiar with the requirements for stormwater management that your community must follow under the NYS DEC Municipal Separate Storm Sewer System (MS4) permit? Yes \_\_\_\_ or No \_\_\_\_.

If Yes, are you familiar with stormwater management issues?  
Yes \_\_\_\_\_ or No \_\_\_\_\_.

4. Read the list of green infrastructure practices/methods below (from NYS Stormwater Design Manual):
- \_\_\_(a) Conservation of natural areas
  - \_\_\_(b) Sheetflow to riparian buffers or filter strips
  - \_\_\_(c) Vegetated open swales
  - \_\_\_(d) Tree planting/tree boxes
  - \_\_\_(e) Downspout disconnection (of rooftop runoff)
  - \_\_\_(f) Stream daylighting
  - \_\_\_(g) Rain garden
  - \_\_\_(h) Green roof
  - \_\_\_(i) Stormwater planters
  - \_\_\_(j) Rain barrels/cisterns
  - \_\_\_(k) Porous pavement
  - \_\_\_(l) Standard Stormwater Management Practices:
    - Infiltration-Trench, Basin, Dry Well
    - Bioretention
    - Dry swale (open channel)

Which of these practices/methods have you heard of? Please check off.

Are you familiar with the benefits of each practice/method and how they are used? If so, list the corresponding letter(s) to the practice you are familiar with here \_\_\_\_\_

5. Which of these green infrastructure practices would you like to learn more about in order to help you assess project reviews? For information about each practice, see Question #5 Handout. Please check off as many as apply.

- \_\_\_(a) Conservation of natural areas
- \_\_\_(b) Sheetflow to riparian buffers or filter strips
- \_\_\_(c) Vegetated open swales
- \_\_\_(d) Tree planting/tree boxes
- \_\_\_(e) Downspout disconnection (of rooftop runoff)
- \_\_\_(f) Stream daylighting
- \_\_\_(g) Rain garden
- \_\_\_(h) Green roof
- \_\_\_(i) Stormwater planters
- \_\_\_(j) Rain barrels/cisterns
- \_\_\_(k) Porous pavement
- \_\_\_(l) Standard Stormwater Management Practices
  - Infiltration-Trench, Basin, Dry Well
  - Bioretention
  - Dry swale (open channel)

6. In your opinion what is the biggest roadblock to green infrastructure (GI) applications or use in your community?

Developers don't include GI in their plans \_\_\_\_\_  
Zoning Code and site plan review procedure does not specify  
GI \_\_\_\_\_  
Not sure \_\_\_\_\_

7. Have you ever been presented with, or approved a project that included green infrastructure practices? Yes \_\_\_ or No \_\_\_.

8. Which design elements (landscaping, traffic, drainage, lighting, etc.) do you look at when reviewing a project?

\_\_\_\_\_

9. Have you been provided with any training in stormwater management regulations or water quality issues? Yes \_\_\_ or No \_\_\_\_\_.

If yes, were green infrastructure practices included in the training session?  
Yes\_\_\_ or No\_\_\_.  
Who sponsored the training? \_\_\_\_\_

10. Does stormwater drainage from your municipality impact another municipality downstream? Yes \_\_\_or No\_\_\_. If yes, do you know which one? \_\_\_\_\_  
\_\_\_\_\_

11. Are you aware of the concept of a stream watershed? Yes \_\_\_ or No\_\_\_\_\_

12. What natural resources are you most concerned about in your community?  
Open space, drinking water, farmland, other?  
\_\_\_\_\_

13. Are there any specific training topics you would like to attend?  
\_\_\_\_\_  
\_\_\_\_\_

PLEASE RETURN SURVEY TO \_\_\_\_\_BY \_\_\_\_\_.

**THANK YOU!**

**Stormwater Coalition of Albany County**

Albany County, City of Albany, Town of Bethlehem, City of Cohoes, Town of Colonie,  
Village of Colonie, Town of Guilderland, Village of Green Island, Village of Menands,  
Town of New Scotland, City of Watervliet, Village of Voorheesville, SUNY Albany



# Green Infrastructure Practices/Methods

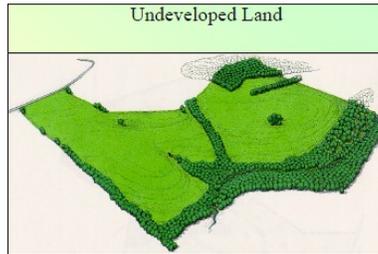
Listed in the NYSDEC Design Manual 2010

Handout for Survey Question #5

## a. Conservation of Natural Areas

### OPEN SPACE DESIGN (Example)

(Also called clustering and conservation design)



SOURCE: Arendt, Randall, Conservation Design for Subdivisions

### NATURAL AREAS To Restore Or Permanently Conserve

#### Tree, Canopy, and Woody Areas



Stream Buffers

#### Pocket Wetlands



Vegetated Buffers

#### Images

1) NYS DEC "Going Green" powerpoint

2) NYS SW Design Manual 2010

3) CWP Webcast Better Site Design Gets Better

#### SPECIFIC PRACTICES (Chapter 3, Table 3.1)

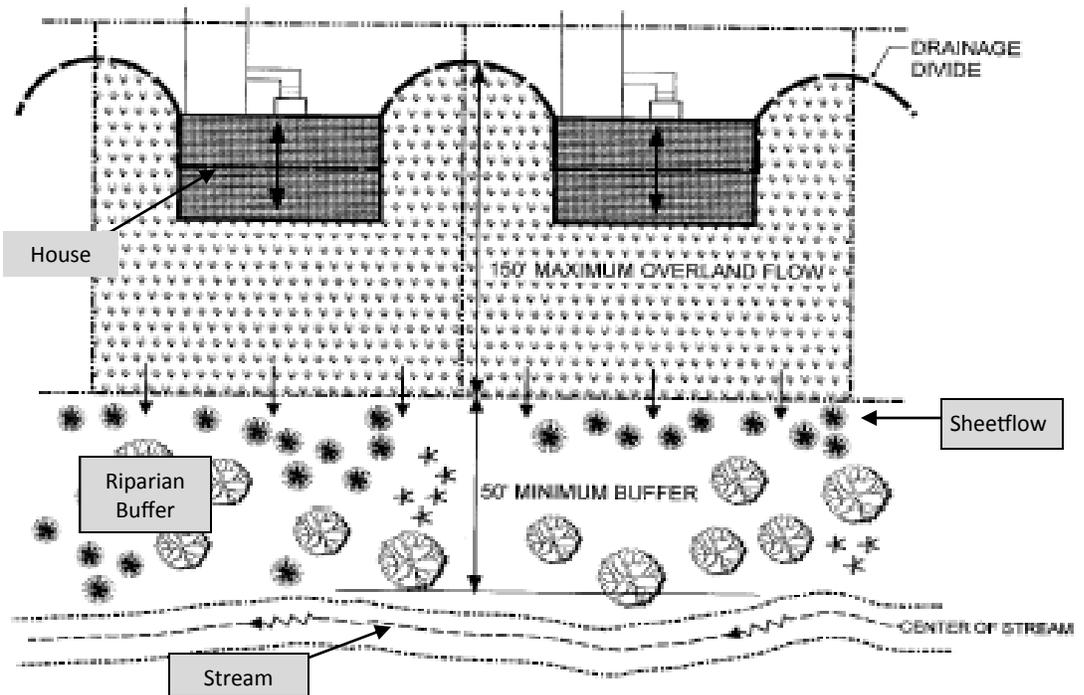
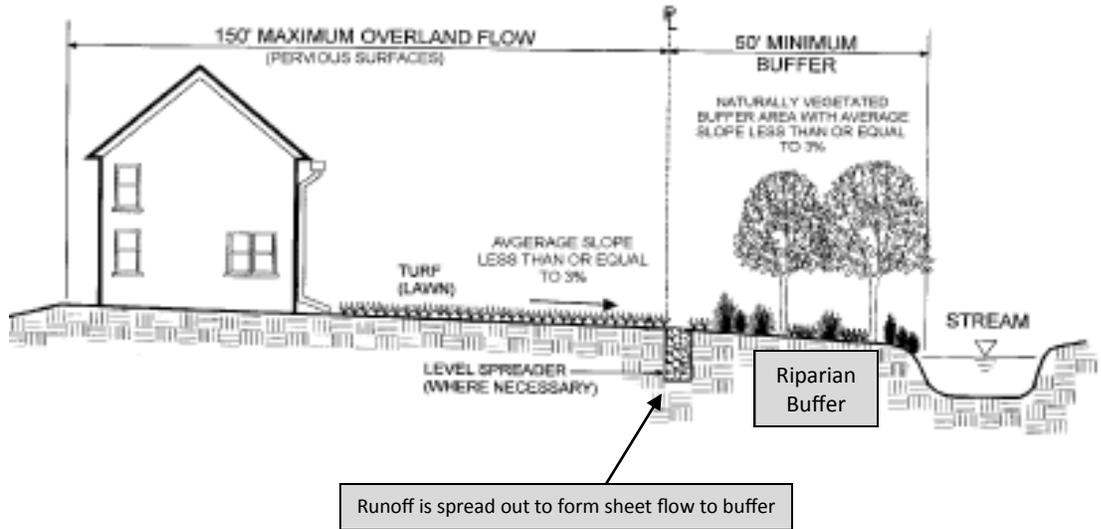
- Preservation of Undisturbed Areas
- Preservation of Buffers
- Reduction of Clearing and Grading
- Locate Development in Less Sensitive Areas
- Open Space Design
- Soil Restoration

# Green Infrastructure Practices/Methods

Listed in the NYSDEC Design Manual 2010  
Handout for Survey Question #5 (cont'd)

b.  
Sheetflow to  
Riparian Buffers  
or Filter Strips

## CROSS SECTION



## PLAN VIEW

Image  
NYS SW Design  
Manual 2010

# Green Infrastructure Practice/Methods

Listed in the NYSDEC Design Manual 2010  
Handout for Survey Question #5 (cont'd)

## c. Vegetated open swales

### Images

- 1) NYS DEC "Going Green" powerpoint
- 2) [www.bfenvironmental.com/pdfs/veggieSwale.pdf](http://www.bfenvironmental.com/pdfs/veggieSwale.pdf)



## d. Tree Planting/ Tree Boxes

### Images

- 1) NYS DEC "Going Green" powerpoint
- 2) <http://greenvalues.cnt.org/national/>



## e. Downspout Disconnection

### Images

- 1) NYS DEC "Going Green" powerpoint
- 2) NYS SW Design Manual 2010



# Green Infrastructure Practice/Methods

Listed in the NYSDEC Design Manual 2010  
Handout for Survey Question #5 (cont'd)

## f. Stream Daylighting



Source: Dekalb County Parks Department

Figure 1: Stream channel daylighting – Before (a) and After (b)

Images  
Center For Watershed Protection;  
Urban SW Restoration Manual 4, p. 167

## g. Rain Garden



Images  
NYS DEC "Going Green" powerpoint

## h. Green Roof



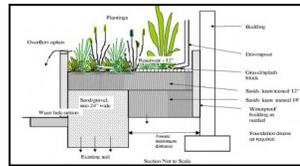
Images  
1) NYS DEC "Going Green" powerpoint  
2) [www.dec.ny.gov/docs/water\\_pdf/swdm2010entire.pdf](http://www.dec.ny.gov/docs/water_pdf/swdm2010entire.pdf)

# Green Infrastructure Practice/Methods

Listed in the NYSDEC Design Manual 2010

Handout for Survey Question #5 (cont'd)

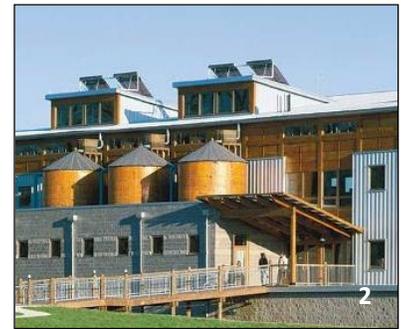
## i. Stormwater Planters



**Images**

- 1) NYS DEC "Going Green" powerpoint
- 2) [www.dec.ny.gov/docs/water\\_pdf/swdm2010entire.pdf](http://www.dec.ny.gov/docs/water_pdf/swdm2010entire.pdf)

## J. Rain Barrels/ Cisterns



**Images**

- 1) [www.rainbarrelguide.com/](http://www.rainbarrelguide.com/)
- 2) NYS DEC "Going Green" powerpoint

## k. Porous Pavement



**Images**

- NYS DEC "Going Green" powerpoint

# Green Infrastructure Practice/Methods

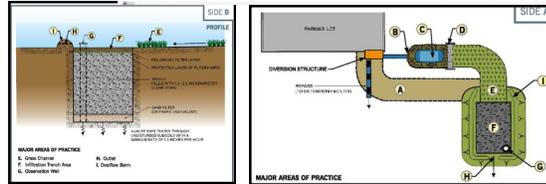
Listed in the NYSDEC Design Manual 2010

Handout for Survey Question #5

## I. Standard Stormwater Management Practices

### Infiltration (Trenches, Basins, Dry Wells)

Trench



Basin

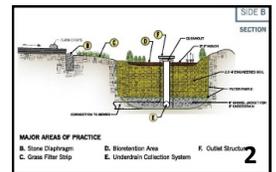


Images

- 1) NYSDEC Design Manual & Coalition Maintenance Cards
- 2) Stormwater Program Town of Colonie

## I. Standard Stormwater Management Practices

### Bioretention

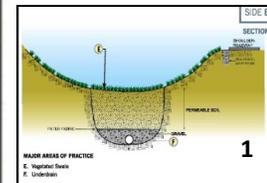


Images

- 1) NYS DEC "Going Green" powerpoint
- 2) NYSDEC Design Manual –Coalition Maintenance Cards

## I. Standard Stormwater Management Practices

### Dry swale (open channel)



Image

- 1) NYSDEC Design Manual & Coalition Maintenance Cards

Municipality	Distribution By Respondant Type						All Respondants		
	Elected Officials (County Leg., Common Council, Town Board, Village Board)	Planning Board	Zoning Board	Conservation Committee	Staff	Appointed-Other	Total Distributed	# of Surveys Collected	% Collected by MS4
Albany County	2	7			9		18	15	83%
Albany_City	17	5	7		2		31	4	13%
Bethlehem_Town	6	6	6		15		33	18	55%
Cohoes_City	7	6	6		7		26	20	77%
Colonie_Town	7	2	9	7	2		27	22	81%
Colonie_Village	5	8	5		3	8	29	29	100%
Green Is_Town	7	5	5						
Green Is_Village	7				11		18	12	67%
Guilderland_Town	5	9	10	7			31	14	45%
Menands_Village	5				1		6	5	83%
New Scot_Town	5	7	6		2		20	15	75%
Voorheesville_Village	5	7	5	5	2		24	17	71%
Watervliet_City	3	5	9		5		22	10	45%
SUNY-Albany							15	8	53%
<b>TOTAL</b>	81	67	68	19	59		300	189	63%

**Green Infrastructure Needs Survey:**  
**Summary of Survey Information by Board Type by Question**  
**July 14, 2011**

***Question 4a. Green Infrastructure practices that are not well known:***

Planning Board- stream daylighting, sheetflow to riparian buffers, stormwater planters, downspout disconnect

Zoning Board of Appeals- rain barrels/cisterns, tree plantings/boxes, conservation of natural areas

Legislative Board- stream daylighting, sheetflow to riparian buffers, stormwater planters

Staff to municipality- stream daylighting, sheetflow to riparian buffers, stormwater planters

CAC (Conservation Advisory Board)- stream daylighting, sheetflow to riparian buffers, stormwater planters, vegetated open swales, SSWMP

***Question 5. Green Infrastructure practices that they want to learn more about:***

Planning Board- stream daylighting, sheetflow to riparian buffers, stormwater planters, rain garden, porous pavement, green roofs, SSWMP

Zoning Board of Appeals- stream daylighting, vegetated open swales, stormwater planters, downspout disconnect

Legislative Board- rain garden, stream daylighting, sheetflow to riparian buffers, porous pavement, SSWMP

Staff to municipality- stream daylighting, stormwater planters, porous pavement, rain garden, conservation of natural areas, SSWMP

CAC (Conservation Advisory Board)- conservation of natural areas, sheetflow to riparian buffers, SSWMP

***Question 6. Roadblock to GI applications or use in your community:***

Planning Board- not included in the plans

Zoning Board of Appeals- not sure

Legislative Board- not sure

Staff to municipality- not sure

CAC (Conservation Advisory Board)- not sure

***Question 8. What design elements do you look at when reviewing a project? (Listed here in order of most votes)***

Planning Board- all, traffic, drainage, lighting

Zoning Board of Appeals- drainage, landscaping, lighting, traffic,

Legislative Board- traffic, all, drainage,

Staff to municipality- all, drainage, traffic, landscaping, lighting

CAC (Conservation Advisory Board)- landscaping , drainage, wetlands

***Question 10a. Does stormwater drainage from your municipality impact another municipality downstream?***

Planning Board- 76% yes

Zoning Board of Appeals- 62% yes

Legislative Board- 59% yes

Staff to municipality- 75% yes

CAC (Conservation Advisory Board)- 72% yes

***Question 10b. Do you know which municipality you drain too?***

Planning Board- listed adjacent municipalities, but not all adjacent municipalities to their community, also listed were specific creeks, Hudson, Mohawk Rivers, one said other counties, some don't know

Zoning Board of Appeals- listed adjacent municipalities, but not all adjacent municipalities to their community, some don't know, one Hudson River

Legislative Board- listed adjacent municipalities, but not all adjacent municipalities to their community, also listed were specific creeks, some don't know

Staff to municipality- listed adjacent municipalities, but not all adjacent municipalities to their community, Hudson River, one listed DOT, and Thruway, some don't know

CAC (Conservation Advisory Board)- listed adjacent municipalities, but not all adjacent municipalities to their community,

***Question 11. Are you aware of the concept of a stream watershed?***

Planning Board- 56% yes

Zoning Board of Appeals- 35% yes

Legislative Board- 56% yes

Staff to municipality- 60% yes

CAC (Conservation Advisory Board)- 45%

***Question 12. What natural resources are you concerned about?  
(Listed here in order of most votes)***

Planning Board- drinking water, open space, all, wetlands and air quality

Zoning Board of Appeals- drinking water, open space, drainage

Legislative Board- drinking water, open space, drainage/flooding, farmland

Staff to municipality- drinking water, open space, farmland, all natural resources

CAC (Conservation Advisory Board)- drinking water, open space, all, rivers

***Question 13. What specific training topics would you like to attend?  
(Listed here in order of most votes)***

Planning Board- updated stormwater regulations, green infrastructure (practices and procedures), no responses

Zoning Board of Appeals- green infrastructure, updated stormwater regulations, anything, no response

Legislative Board- no responses, green infrastructure, anything

Staff to municipality- green infrastructure (practices and procedures), updated stormwater regulations, anything/all, no responses

CAC (Conservation Advisory Board)- all topics, native planting/landscaping

*Footnote: Not every MS4 municipality is included in this summary due to lack of information.*

**Appendix B**  
**Stormwater Coalition Scorecard**

## Introduction

### **Stormwater Coalition Scorecard - Inventory of Municipal Codes for Green Infrastructure Practices (September 2011)**

The Stormwater Coalition Scorecard allows an in-depth review of the standards, local laws, ordinances, and codes (i.e., the development rules) that shape how development occurs in your municipality. You are guided through a systematic comparison of your local development rules against recognized green infrastructure practices. Institutional frameworks, regulatory structures and incentive programs are included in this review. A combination of documents were used including the Center for Watershed Protection Code and Ordinance Worksheet; the Code and Ordinance Worksheet for Development Rules in New York State (a document developed by NYS Department of Environmental Conservation Hudson River Estuary Program, NYS Water Resources Institute in Cooperation with the Center For Watershed Protection); and the U.S. EPA Managing Wet Weather with Green Infrastructure Municipal Handbook-Water Quality Scorecard. The scorecard consists of a series of questions organized into four categories. Points are assigned based on how well the current development rules agree with suggested development principles that support green infrastructure. Green infrastructure practices are included within the NYSDEC MS4 Permit and the NYSDEC Stormwater Management Design Manual (August, 2010).

#### **PREPARING TO COMPLETE THE COALITION SCORECARD**

Two tasks need to be performed before you begin the scorecard. First, you must identify all the development rules that apply in your municipality. Second, you must identify the local, state, and federal authorities that actually administer or enforce the development rules within your municipality. Both tasks require a large investment of time. The development process is usually shaped by a complex labyrinth of regulations, criteria, and authorities. A team approach may be helpful. You may wish to enlist the help of a local plan reviewer, land planner, land use attorney, or civil engineer. Their real-world experience with the development process is often very useful in completing the worksheet.

#### **Identify the Development Rules**

Gather the key documents that contain the development rules in your municipality. A list of potential documents to look for is provided in Table 1. Keep in mind that the information you may want on a particular development rule is not always found in code or regulation, and may be hidden in supporting design manuals, review checklists, guidance documents or construction specifications. In most cases, this will require an extensive search. Few communities include all of their rules in a single document. Be prepared to contact state, federal, or local agencies to obtain copies of the needed documents.

**Table 1: Key Local Documents that will be needed to complete the Coalition Scorecard**

- Comprehensive Plan
- Zoning Ordinance or Local Law
- Zoning Overlay District Regulations (such as a Conservation Overlay District enacted after the Zoning Law)
- Subdivision Regulations
- Site Plan Review Regulations
- Highway Specifications, Street Standards or Road Design Manual
- Parking Requirements
- Building and Fire Regulations/Standards
- Flood Damage Prevention Regulations
- Wetland and/or Watercourse Ordinance or Local Law
- Grading Ordinance or Local Law
- Erosion and Sediment Control Ordinance or Local Law
- Stormwater Management Local Law or Drainage Criteria
- Tree Protection or Landscaping Ordinance or Local Law
- Steep Slopes Ordinance
- Emergency Response Master Plans

#### **Identify Development Authorities**

Once the development rules are located, it is relatively easy to determine which local agencies or authorities are actually responsible for administering and enforcing the rules. Completing this step will provide you with a better understanding of the intricacies of the development review process. Table 2 provides a simple framework for identifying the agencies that influence development in your municipality. As you will see, space is provided not only for local agencies, but for state and federal agencies as well. In some cases, state and federal agencies may also exercise some authority over the local development process (e.g., wetlands, some road design, and stormwater).

#### **USING THE SCORECARD: HOW DO YOUR RULES STACK UP TO THE SUGGESTED DEVELOPMENT PRINCIPLES THAT SUPPORT GREEN INFRASTRUCTURE PRACTICES?**

##### **Completing the Scorecard**

Once you have located the documents that outline your development rules and identified the authorities responsible for development in your municipality, you are ready for the next step. You can now use the Scorecard. The questions require either a yes or no response or specific numeric criteria. You are awarded points if the development rule supports green infrastructure practices.

## Calculating Your Score

The Scorecard is subdivided into **FOUR** categories:

1. Reduction of Impervious Cover (Questions No. 1-32)
2. Preservation of Natural Features and Conservation Design (Questions No. 33-74)
3. Design Elements for Stormwater Management (Questions No. 75-86)
4. Promotion of efficient, compact development patterns and infill (Questions No. 87-94)

For each category, you are asked to subtotal your score. This "Time to Assess" allows you to consider which development rules are potential candidates for change.

The total number of points possible is 100. The overall score provides a general indication of how well a municipality incorporates the concepts that support green infrastructure as outlined in the combination of documents used including the Center for Watershed Protection Code and Ordinance Worksheet; the Code and Ordinance Worksheet for Development Rules in New York State; and the U.S. EPA Managing Wet Weather with Green Infrastructure Municipal Handbook-Water Quality Scorecard. As a general rule, if the overall score is lower than 80, then it may be advisable to review the local development rules for updating purposes. Once you have completed the Scorecard, go back and review your responses. Determine if there are specific areas that need improvement (e.g., development rules that govern parking standards). This review is key to understanding where there are gaps in your current laws and developing a strategy for addressing which laws and procedures to change. The intent of this assessment and the stormwater regulations in general is to protect water quality within your municipality.

### References:

1. "Managing Wet Weather with Green Infrastructure Municipal Handbook-Water Quality Scorecard", U.S. EPA, website:  
<http://cfpub.epa.gov/npdes/greeninfrastructure/munichandbook.cfm>
2. "Code and Ordinance Worksheet", Center for Watershed Protection, website:  
[http://www.cwp.org/documents/cat\\_view/76-stormwater-management-publications/90-managing-stormwater-in-your-community-a-guide-for-building-an-effective-post-construction-program.html](http://www.cwp.org/documents/cat_view/76-stormwater-management-publications/90-managing-stormwater-in-your-community-a-guide-for-building-an-effective-post-construction-program.html)
3. "Code and Ordinance Worksheet for Development Rules in New York State", NYS Department of Environmental Conservation Hudson River Estuary Program, NYS Water Resources Institute in Cooperation with the Center for Watershed Protection. Website link is no longer available.

**Table 2: Local, State, and Federal Authorities Responsible for Development in Your Municipality**

Development Responsibility	State/Federal	County	City, Village or Town
Sets road standards	Agency:		
	Contact Name:		
	Phone No.:		
Review/approves subdivision plans	Agency:		
	Contact Name:		
	Phone No.:		
Establishes zoning ordinances	Agency:		
	Contact Name:		
	Phone No.:		
Establishes subdivision ordinances	Agency:		
	Contact Name:		
	Phone No.:		
Reviews/establishes stormwater management or drainage criteria	Agency:		
	Contact Name:		
	Phone No.:		
Provides fire protection and fire protection code enforcement	Agency:		
	Contact Name:		
	Phone No.:		
Oversees stream buffer ordinance	Agency:		
	Contact Name:		
	Phone No.:		
Oversees wetland protection	Agency:		
	Contact Name:		
	Phone No.:		
Establishes grading requirements or oversees erosion and sediment control program	Agency:		
	Contact Name:		
	Phone No.:		
Reviews/approves septic systems	Agency:		
	Contact Name:		
	Phone No.:		
Review/approves utility plans (e.g., water and sewer)	Agency:		
	Contact Name:		
	Phone No.:		
Reviews/approves forest conservation/ tree protection plans	Agency:		
	Contact Name:		
	Phone No.:		
Oversees rare species and habitat protection	Agency:		
	Contact Name:		
	Phone No.:		

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Category I: Reduction of Impervious Cover</b>					
<b>Street width and length:</b>					
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)? <i>If your answer is <b>between 18-22 feet</b>, give yourself 1 point</i>					
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)? <i>If your answer is <b>YES</b>, give yourself 1 point</i>					
3. Do street standards promote the most efficient street layouts that reduce overall street length? <i>If your answer is <b>YES</b>, give yourself 1 point</i>					
<b>Right-of-Way Width:</b>					
4. What is the minimum right of way (ROW) width for a residential street? <i>If your answer is <b>less than 55 feet</b>, give yourself 1 point</i>					
5. Does the code allow utilities to be placed under the paved section of the ROW? <i>If your answer is <b>YES</b>, give yourself 1 point</i>					
<b>Cul-de-Sacs:</b>					
6. What is the minimum radius allowed for cul-de-sacs? <i>If your answer is <b>less than 35 feet</b>, give yourself 1 point</i> <i>If your answer is <b>36 feet to 45 feet</b>, give yourself .5 point</i>					
7. Can a landscaped island be created within the cul-de-sac? <i>If your answer is <b>YES</b>, give yourself 1 point</i>					
8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments? <i>If your answer is <b>YES</b>, give yourself 1 point</i>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b><i>Sidewalks and Curbs</i></b>					
<p>9. What is the minimum sidewalk width allowed in the municipality? _____ feet</p> <p>If your answer is <b>4 feet or less</b>, give yourself 1 point.</p>					
<p>10. Are sidewalks always required on both sides of residential streets?</p> <p>If your answer is NO, give yourself 1 point.</p>					
<p>11. Are sidewalks allowed to be sloped to drain to the front yard instead of the street?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>12. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<b><i>Driveways</i></b>					
<p>13. What is the minimum driveway width specified in the municipality? _____ feet</p> <p>If your answer is <b>9 feet or less (one lane) or 18 feet (two lanes)</b>, give yourself 1 point.</p>					
<p>14. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc)?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>15. Can a "two track" design be used at single family driveways? (grass in between)</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>16. Are shared driveways permitted in residential developments?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>17. Are driveways allowed to be sloped to drain to yard areas instead of the street?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Parking Ratios</b>					
<p>18. What is the minimum parking ratio for a professional office building (per 1000 ft2 of gross floor area)?</p> <p>_____ spaces</p> <p>If your answer is <b>less than 3.0 spaces</b>, give yourself 1 point.</p>					
<p>19. What is the minimum required parking ratio for shopping centers (per 1,000 ft2 gross floor area)?</p> <p>_____ spaces</p> <p>If your answer is <b>4.5 spaces or less</b>, give yourself 1 point.</p>					
<p>20. What is the minimum required parking ratio for single family homes (per home)?</p> <p>_____ spaces</p> <p>If your answer is <b>less than or equal to 2.0 spaces</b>, give yourself 1 point</p>					
<p>21. Are your parking requirements set as maximum or median (rather than minimum) requirements?</p> <p>If your answer is YES, give yourself 1 point</p>					
<b>Shared Parking</b>					
<p>22. Is the use of shared parking arrangements promoted?</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>23. Are model shared parking agreements provided?</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>24. Are parking ratios reduced if shared parking arrangements are in place?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>25. If mass transit is provided nearby, is the parking ratio reduced?</p> <p>If your answer is YES, give yourself 1 point</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Parking Lot Design Standards</b>					
<p>26. What is the minimum stall width for a standard parking space? _____ feet If your answer is <b>9 feet or less</b>, give yourself 1 point.</p>					
<p>27. What is the minimum stall length for a standard parking space? _____ feet If your answer is <b>18 feet or less</b>, give yourself 1 point</p>					
<p>28. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars? If your answer is YES, give yourself 1 point</p>					
<p>29. Can pervious materials be used for spillover parking areas? If your answer is YES, give yourself 1 point</p>					
<p>30. Is a minimum percentage of a parking lot required to be landscaped? If your answer is YES, give yourself 1 point</p>					
<p>31. Is the use of bioretention areas and other stormwater practices within landscaped areas or setbacks allowed? If your answer is YES, give yourself 1 point</p>					
<p>32. Are there any incentives to developers to provide parking within garages rather than surface parking lots? If your answer is YES, give yourself 1 point</p>					
<b>Subtotal</b>					
<p><b>Time to Assess: Category I</b> Questions 1 through 32 focused on the laws, ordinances and standards that determine the size, shape, and construction of roads, driveways, parking lots and building lots. There were a total of <b>32</b> points available. What was your total score?</p> <p>Subtotal Page 1 ____ + Subtotal Page 2 ____ + Subtotal Page 3 ____ + Subtotal Page 4 ____ = _____</p> <p>Within Category I which question areas earned the most points? Which sections of the codes and ordinances are potential impediments to better development (<b>did not earn points</b>)?</p>				<p><u>Put notes here for Time to Assess:</u></p>	

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Category II: Preservation of Natural Features and Conservation Design</b>					
<b>Community Planning for Natural Areas</b>					
<p>33. Has the local government/other public institution identified and mapped critical natural resource areas (e.g. steep slopes, wildlife habitat, drinking water source areas including aquifer recharge areas/well head protection zone)</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>34. In addition to or instead of mapping; does the municipality/other public institution have a natural resource inventory (NRI) or open space inventory (OSI) that is used in plan review?</p> <p>If your answer is YES, give yourself .5 point for each of the following included in the NRI for a possible total of 6 points (NRI may be paper-based or digital (GIS)).</p> <p><input type="checkbox"/> Surface water-streams, rivers, ponds, lakes</p>					
<p><input type="checkbox"/> Floodplains and Flood Hazard Areas</p>					
<p><input type="checkbox"/> NYS Regulated Wetlands</p>					
<p><input type="checkbox"/> National Wetland Inventory</p>					
<p><input type="checkbox"/> Groundwater/aquifers</p>					
<p><input type="checkbox"/> Surficial and bedrock geology</p>					
<p><input type="checkbox"/> Topography</p>					
<p><input type="checkbox"/> USDA Soil Survey</p>					
<p><input type="checkbox"/> Land cover</p>					
<p><input type="checkbox"/> Maps of significant habitat or natural areas</p>					
<p>NY Natural Heritage Program information:</p>					
<p><input type="checkbox"/> Rare plants</p>					
<p><input type="checkbox"/> Rare animals</p>					
<p>35. Does the local or institutional comprehensive plan contain a natural resource protection element with goals calling for preservation of identified critical natural resource areas? (steep slopes, wildlife habitat, drinking water source areas including aquifer recharge areas)</p> <p>If your answer is YES, give yourself 1 point</p>					

<b>QUESTIONS</b>	<b>Yes</b>	<b>No</b>	<b>Score</b>	<b>Local Law ID reference: code name/section/page #</b>	<b>Clarification notes</b>
<b><i>Locating Sites in Less Sensitive Areas</i></b>					
<p><b>36.</b> Does the municipality have a floodplain management ordinance or local law that prevents new building and filling in the 100-year floodplain (i.e. more stringent than a Flood Damage Prevention Law, commonly adopted to meet minimum requirements for participation in the FEMA flood insurance program)?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>37.</b> Does the municipality have a steep slope, grading, or erosion and sediment control law that requires avoidance of development on steep slope areas and minimizes grading and flattening of hills and ridges?</p> <p>If your answer is YES, give yourself 1 point.</p> <p>Are steep slopes defined with angle of repose ____or percentage of slope____?</p>					
<p><b>38.</b> Does the municipality require avoidance and protection of highly erodible soils through a steep slope, grading, or erosion and sediment control law?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>39.</b> Does the municipality provide incentives for development on previously altered sites or in designated priority growth areas?</p> <p>If your answer is YES, give yourself .5 point.</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b><i>Preservation of Undisturbed Areas</i></b>					
<p><b>40.</b> Does the municipality require that natural conservation areas are delineated and defined before site layout and design are conducted?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>41.</b> Does the municipality require that conservation areas and native vegetation be protected in an undisturbed state during the design, construction and occupancy stages?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<b><i>Stream and Wetland Buffers</i></b>					
<p><b>42.</b> Does the municipality have a stream buffer ordinance or local law?</p> <p>If yes, and it is for all streams give yourself 1 point.</p> <p>If yes, but it is only for some streams give yourself .5 points.</p>					
<p><b>43.</b> If so, what is the minimum buffer width? _____ feet</p> <p>If your answer is <b>100 feet or more</b>, give yourself 2 points.</p> <p>If your answer is <b>between 50-100 feet</b>, give yourself 1 point.</p>					
<p><b>44.</b> Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>45.</b> Does the ordinance also regulate intermittent streams?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>46.</b> Does the municipality have a local wetland buffer ordinance or local law?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>47.</b> In the wetland ordinance, what is the minimum regulated wetland size?</p> <p>If you answer is all wetlands regardless of size give yourself 1 point.</p> <p>If your answer is between 0-5 acres, give yourself .5 point</p>					
<p><b>48.</b> What is the minimum buffer width for wetlands?</p> <p>_____ feet</p> <p>If your answer is <b>100 feet or more</b>, give yourself 2 points.</p> <p>If your answer is <b>between 50-100 feet</b>, give yourself 1 point.</p>					

<b>QUESTIONS</b>	<b>Yes</b>	<b>No</b>	<b>Score</b>	<b>Local Law ID reference: code name/section/page #</b>	<b>Clarification notes</b>
<b><i>Stream and Wetland Buffer Uses and Enforcement</i></b>					
<p><b>49.</b> Do the stream and wetland ordinances specify low impact uses in the buffer that are compatible with conservation such as passive recreation?</p> <p>If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.</p>					
<p><b>50.</b> Do the ordinances/local laws specify enforcement and education mechanisms?</p> <p>If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.</p>					
<p><b>51.</b> Do stream and wetland buffer ordinances/local laws specify that at least part of the buffer be maintained with native vegetation?</p> <p>If your answer is YES, give yourself <b>.5 point for wetland buffers</b> and <b>.5 point for stream buffers</b> for a possible total of 1 point.</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Open Space and Flexible Design</b>					
<p><b>52.</b> Does the municipality/other public institution have open space design, conservation subdivision or cluster development provisions in local zoning or subdivision laws or construction policies?</p> <p>If your answer is YES, give yourself 1 point.</p> <p>If your answer is NO, skip to question under <i>open space management</i>.</p>					
<p><b>53.</b> Is land conservation or impervious cover reduction a major goal or objective of the open space, conservation subdivision or cluster development ordinance/policy?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>54.</b> Are the submittal or review requirements for open space, conservation subdivision or cluster development greater than those for conventional development?</p> <p>If your answer is NO, give yourself 1 point.</p>					
<p><b>55.</b> Does the open space or cluster subdivision ordinance provide density bonuses when a certain percentage of open space is preserved (incentive zoning)?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>56.</b> Does the open space or cluster subdivision ordinance require that open space areas associated with development be connected or consolidated into larger units?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>57.</b> Are flexible site design criteria available for developers that utilize open space or cluster design options (e.g., smaller setbacks, road widths, lot sizes)?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>58.</b> Are irregular lot shapes (e.g., pie-shaped, flag lots) allowed in the municipality to allow for flexibility in protecting important habitats and open space?</p> <p>If your answer is YES, give yourself .5 point.</p>					
<p><b>59.</b> Are critical natural resource areas deducted from the total acreage count that is used to calculate density? (e.g. on a 50 acre site with 10 acres of natural resources; such as wetlands, forests, only 40 acres can be used to calculate density under zoning district regulations, and only those 40 acres can be developed).</p> <p>If your answer is YES, give yourself 1 point.</p>					
<b>Subtotal</b>					

<b>QUESTIONS</b>	<b>Yes</b>	<b>No</b>	<b>Score</b>	<b>Local Law ID reference: code name/section/page #</b>	<b>Clarification notes</b>
<b><i>Open Space Management</i></b>					
<p><b>60.</b> Does the municipality have enforceable requirements to establish agreements that can effectively manage open space? If your answer is YES, give yourself 1 point.</p>					
<p><b>61.</b> Does a minimum percentage of open space have to be managed in a natural condition? If your answer is YES, give yourself 1 point.</p>					
<p><b>62.</b> Are allowable and unallowable uses for open space in residential developments defined? If your answer is YES, give yourself 1 point.</p>					
<p><b>63.</b> Can open space be managed by a third party using land trusts or conservation easements? If your answer is YES, give yourself 1 point.</p>					
<b><i>Clearing and Grading</i></b>					
<p><b>64.</b> Is there an ordinance or local law that requires erosion and sediment control on development sites using the design criteria in, "New York Standards and Specifications for Erosion and Sediment Control"? If your answer is YES, give yourself 1 point.</p>					
<p><b>65.</b> Is there an ordinance that requires buffer zones be maintained between development and land preservation areas? If your answer is YES, give yourself 1 point.</p>					
<p><b>66.</b> Do reserve septic field areas need to be cleared of trees at the time of development? If your answer is NO, give yourself 1 point.</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b><i>Tree and Forest Conservation</i></b>					
<p>67. If forests are present at residential development sites, do stands have to be preserved?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>68. Are the limits of disturbance shown on construction plans adequate for preventing clearing of trees and natural vegetative cover during construction?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p>69. Is there an ordinance or local law that requires forestry best management practices for timber harvesting and tree cutting?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<b><i>Conservation Incentives-financial</i></b>					
<p>70. Does the municipality have a local open space fund through bonding, real estate transfer tax, or other funding mechanism to encourage open space protection?</p> <p>If your answer is Yes give yourself 1 point.</p>					
<p>71. Does the municipality use local, county, state, federal or private open space funding for purchase or transfer of development rights programs?</p> <p>If your answer is Yes give yourself 1 point.</p>					
<p>72. Does the municipality provide information to landowners about reduced tax assessment under NYS Forest Tax Law, Section 480-A of Real Property Tax Law?</p> <p>If your answer is Yes give yourself 1 point.</p>					
<p>73. Does the municipality provide information to landowners about reduced tax assessment under NYS Agricultural District Law?</p> <p>If your answer is Yes give yourself 1 point.</p>					
<p>74. Does the municipality provide information to landowners about reduced local tax assessment for wetlands regulated under the NYS Freshwater Wetlands Act, Section 24-0905 of the Act (Tax Abatement)?</p> <p>If your answer is Yes give yourself 1 point.</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<p><b>Time to Assess: Category II</b> Questions 33-74 focused on the local laws, ordinances and procedures that promote (or impede) protection of existing natural areas and incorporation of open spaces into new development. There were a total of 48 points available. What was your total score?</p> <p>Subtotal Page 6 ____ + Subtotal Page 8 ____ + Subtotal Page 9 ____ + Subtotal Page 10 ____ + Subtotal page 11 ____ = _____</p> <p>Within Category II which question areas earned the most points? Which sections of the codes and ordinances are potential impediments to better development (<b>did not earn points</b>)?</p>				<p><u>Put notes here for Time to Assess:</u></p>	
<p><b>Category III: Design Elements for Stormwater Management</b></p>					
<p><b>Vegetated Open Channels</b></p>					
<p><b>75.</b> Are curb and gutters required for most residential street sections?</p> <p>If your answer is NO, give yourself 1 point</p>					
<p><b>76.</b> Are there established design criteria for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?</p> <p>If your answer is yes, give yourself 1 point.</p>					
<p><b>Rooftop Runoff</b></p>					
<p><b>77.</b> Can rooftop runoff be discharged to yard areas?</p> <p>If your answer is YES, give yourself 1 point.</p>					
<p><b>78.</b> Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops?</p> <p>If your answer is YES, give yourself 1 point.</p>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Infiltration</b>					
<p>79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous &amp; permeable pavement, rain barrels and cisterns, tree boxes, downspout disconnect; and vegetated open swales.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>82. Local government/ other public institution encourages/requires a pre-site plan meeting with developers to discuss stormwater management and green infrastructure approaches.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>83. Local agencies/ other public institution have the authority to enforce maintenance requirements.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>84. The local government/ other public institution sponsors demonstration projects for green infrastructure management best practices.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>85. Local government/ other public institution provides information brochure/manual for homeowners/agencies describing acceptable rainwater harvesting techniques.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p>86. Is the local government/ other public institution cooperating in developing regional approaches to stormwater management and watershed protection?</p> <p>If your answer is YES, give yourself 1 point</p>					
<b>Subtotal</b>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<p><b>Time to Assess:</b> <i>Category III</i> Questions 75-86 focused on the local laws, ordinances and procedures related to stormwater management, specifically those encouraging green infrastructure practices. There were a total of 12 points available. What was your total score?</p> <p>Subtotal Page 13 = _____</p> <p>Within Category III which question areas earned the most points? Which sections of the codes and ordinances are potential impediments to better development (<b>did not earn points</b>)?</p>				<p><u>Put notes here for Time to Assess:</u></p>	
<p><b>Category IV: Promotion of efficient, compact development patterns and infill</b></p>					
<p><b>87.</b> Areas of the municipality or institutional property have been identified for higher density development based on existing infrastructure capacity, cost for providing new services and access.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p><b>88.</b> Local sewer and water capital improvement plans follow development policies established in local comprehensive plans or institutional policy and target areas with existing development/infrastructure.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p><b>89.</b> A wide variety of housing types and sizes are allowed within infill areas as well as reduced minimum lot sizes and accessory dwelling units to increase density.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p><b>90.</b> Local stormwater management regulations provide a requirement that reduces on-site management requirements for projects that decrease total imperviousness on previously developed sites.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p><b>91.</b> Local government/other public institution plans (could be plans other than Comprehensive Plan) identify potential brownfield and greyfield sites and support their redevelopment.</p> <p>If your answer is YES, give yourself 1 point</p>					
<p><b>92.</b> Capital improvement plans include infrastructure improvements (water, sewer, road, sidewalk upgrades) for identified brownfield and greyfield sites.</p> <p>If your answer is YES, give yourself 1 point</p>					

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<p>93. Streamlined permitting procedures facilitate infill and brownfield sites. If your answer is YES, give yourself 1 point</p>					
<p>94. The local code/institutional policy differentiates between Greenfield, adaptive reuse, and infill sites. If your answer is YES, give yourself 1 point</p>					
<b>Subtotal</b>					
<p><b>Time to Assess:</b> <i>Category IV</i> Questions 87-94 focused on the local laws, ordinances and procedures that encourage land conservation and smart growth by allowing higher density in developed areas and brownfield sites. There were a total of 8.0 points. What was your total score?</p> <p>Subtotal Page 15 = _____</p> <p>Within Category IV which question areas earned the most points? Which sections of the codes and ordinances are potential impediments to better development (<b>did not earn points</b>)?</p>				<p><u>Put notes here for Time to Assess:</u></p>	
<p><b>To determine Final Score</b>, add up Subtotal from each Time to Assess</p>					
<p>Category I. Reduction of Impervious Cover: Questions 1-32</p>					
<p>Category II. Preservation of Natural Features and Conservation Design: Questions 33-74</p>					
<p>Category III. Design Elements for Stormwater Management: Questions 75-86</p>					
<p>Category IV. Promotion of efficient, compact development patterns and infill: Questions 87-94</p>					
<b>Final Score</b>					

# **Stormwater Coalition Scorecard**

## **Inventory of Municipal Codes for Green Infrastructure Practices**

### **(September 2011)**

#### **SCORING (A total of 100 points are available):**

A variety of design concepts that support green infrastructure practices are described in detail in the Scorecard. Green infrastructure practices are included within the NYSDEC MS4 Permit and the NYSDEC Stormwater Management Design Manual (August, 2010), a manual used by developers when designing stormwater management practices. This manual is also referenced in the NYSDEC Construction Activity Permit and municipal stormwater management laws.

The scoring system provides a base-line number that a municipality can use to evaluate their existing land use laws and procedures against recognized land use regulations and procedures that support green infrastructure practices.

The intent of the scoring system below is to make municipalities aware that updating local regulations and procedures to incorporate design concepts that support mandated State and Federal regulations for water quality and stormwater management will provide a more inclusive and concise development review process.

#### **Municipality's Score:**

**90- 100** Congratulations, your municipality's development rules and land use policies include design concepts that support green infrastructure practices put forward in the NY State Stormwater Management Design Manual 2010 and listed in the MS4 permit as post construction non-structural stormwater management practices.

**80 - 89** Your local development rules are good because they include some of the principles put forward in the NY State Stormwater Management Design Manual 2010 and MS4 permit. However, updating development regulations to reflect the ideas behind newly mandated green infrastructure practices would be useful (see practices listed within the NY State Stormwater Management Design Manual 2010 and MS4 permit).

**70 - 79** Significant opportunities exist to improve your development rules to reflect the ideas put forward in recent years for preservation of natural resources, stormwater management and planning for efficient, compact growth patterns. Consider updating development regulations to reflect the ideas behind newly mandated green infrastructure practices listed within the NY State Stormwater Management Design Manual 2010 and MS4 permit.

**60 - 69** It is recommended that your development regulations be reassessed in order to better protect natural resources and provide for a development review process that incorporates principles of design that support stormwater management practices regulated by NY State. Newly mandated green infrastructure practices are listed within the NY State Stormwater Management Design Manual 2010 and MS4 permit.

**Less than 60** Reform of the development regulations and guidelines is recommended in order to modernize the review process to incorporate a variety of water resource protection strategies. Newly mandated green infrastructure practices are listed within the NY State Stormwater Management Design Manual 2010 and MS4 permit. By providing updated local regulations that are in line with State and Federal regulations the development review process will be more inclusive and concise.

## **Appendix C**

### **Completed Scorecard-Sample Correction**

QUESTIONS	Yes	No	Score	Real score if no code	Local Law ID reference: code name/section/page #	Clarification notes
<b>Category I: Reduction of Impervious Cover</b>						
<b>Street width and length:</b>						
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)? <i>If your answer is <b>between 18-22 feet</b>, give yourself 1 point</i>		28'			Sub. Div. Regs. 603-6-b LL#3 of 2011, D	However, Planning Commission has the authority to modify the plans.
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)? <i>If your answer is YES, give yourself 1 point</i>	Yes		1	0	Z.L. Art. 19	At the discretion of the Planning Commission not specifically stated in code
3. Do street standards promote the most efficient street layouts that reduce overall street length? <i>If your answer is YES, give yourself 1 point</i>	Yes		1	0	Z.L. Art. 19	At the discretion of the Planning Commission not specifically stated in code
<b>Right-of-Way Width:</b>						
4. What is the minimum right of way (ROW) width for a residential street? <i>If your answer is <b>less than 55 feet</b>, give yourself 1 point</i>		50'	1		Subdiv. Regs. Sec.603 & Z.L. Art. 19	However, Planning Commission has the authority to modify the plans.
5. Does the code allow utilities to be placed under the paved section of the ROW? <i>If your answer is YES, give yourself 1 point</i>		No			Subdiv. Regs. Sec.603.4.d.1	However, Planning Commission has the authority to modify the plans.
<b>Cul-de-Sacs:</b>						
6. What is the minimum radius allowed for cul-de-sacs? <i>If your answer is <b>less than 35 feet</b>, give yourself 1 point</i> <i>If your answer is <b>36 feet to 45 feet</b>, give yourself .5 point</i>		80'			Z.L. Art. 19 LL # 3 of 2011	Note: Planning Commission has the right to modify. Need DPW and Emergency Services Input before reducing minimum radius
7. Can a landscaped island be created within the cul-de-sac? <i>If your answer is YES, give yourself 1 point</i>	Yes		1	0	not in code	At the discretion of the Planning Commission Need input from DPW.
8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments? <i>If your answer is YES, give yourself 1 point</i>	Yes		1	0		At the discretion of the Planning Commission not in code
<b>Subtotal</b>			5	1		

**Appendix D**  
**Final Scorecard Summary Data**

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (cso)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cty
<b>Category I: Reduction of Impervious Cover</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
<b>Street width and length:</b>														
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)? <i>If your answer is between 18-22 feet, give yourself 1 point</i>	0	0	0	0	0	0	0	0	0	0	0	0%	0	1
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)? <i>If your answer is YES, give yourself 1 point</i>	0	0	0	0	0	0	0	1	0	0	1	10%	NA	NA
3. Do street standards promote the most efficient street layouts that reduce overall street length? <i>If your answer is YES, give yourself 1 point</i>	0	0	1	0	1	0	0	0	0	0	2	20%	NA	NA
<b>Possible Points By Sub Category</b>	3	3	3	3	3	3	3	3	3	3			1	1
<b>Points Achieved</b>	0	0	1	0	1	0	0	1	0	0			0	1
<b>Score (%)</b>	0%	0%	33%	0%	33%	0%	0%	33%	0%	0%			0%	100%
<b>Right-of-Way Width:</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
4. What is the minimum right of way (ROW) width for a residential street? <i>If your answer is less than 55 feet, give yourself 1 point</i>	0	0	0	1	1	1	1	1	1	0	6	60%	0	1
5. Does the code allow utilities to be placed under the paved section of the ROW? <i>If your answer is YES, give yourself 1 point</i>	0	0	1	1	1	1	0	1	1	0	6	60%	1	1
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	2
<b>Points Achieved</b>	0	0	1	2	2	2	1	2	2	0			1	2
<b>Score (%)</b>	0%	0%	50%	100%	100%	100%	50%	100%	100%	0%			50%	100%
<b>Cul-de-Sacs:</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
6. What is the minimum radius allowed for cul-de-sacs? <i>If your answer is less than 35 feet, give yourself 1 point</i> <i>If your answer is 36 feet to 45 feet, give yourself .5 point</i>	0	0	0	0	0	0	0	0.5	0	0	0.5	5%	0	NA
7. Can a landscaped island be created within the cul-de-sac? <i>If your answer is YES, give yourself 1 point</i>	0	0.5	0	0	0	1	0	1	1	0	3.5	35%	1	NA
8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments? <i>If your answer is YES, give yourself 1 point</i>	0	0	0	0	0	0	0	0	0	1	1	10%	NA	NA
<b>Possible Points By Sub Category</b>	3	3	3	3	3	3	3	3	3	3			2	0
<b>Points Achieved</b>	0	0.5	0	0	0	1	0	1.5	1	1			1	0
<b>Score (%)</b>	0%	17%	0%	0%	0%	33%	0%	50%	33%	33%			50%	#DIV/0!

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cty
<b>Sidewalks and Curbs</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
9. What is the minimum sidewalk width allowed in the municipality? _____ feet If your answer is <b>4 feet or less</b> , give yourself 1 point.	0	0	0	0	1	0	0	0	0	0	1	10%	0	0
10. Are sidewalks always required on both sides of residential streets? If your answer is NO, give yourself 1 point.	1	0	0	1	0	0	1	1	1	0	5	50%	1	1
11. Are sidewalks allowed to be sloped to drain to the front yard instead of the street? If your answer is YES, give yourself 1 point.	1	0	0	0	0	0	0	1	0	0	2	20%	1	1
12. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)? If your answer is YES, give yourself 1 point.	0	0	0	0	0	0	0	0	0	0	0	0%	0	0
<b>Possible Points By Sub Category</b>	4	4	4	4	4	4	4	4	4	4			4	4
<b>Points Achieved</b>	2	0	0	1	1	0	1	2	1	0			2	2
<b>Score (%)</b>	50%	0%	0%	25%	25%	0%	25%	50%	25%	0%			50%	50%
<b>Driveways</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
13. What is the minimum driveway width specified in the municipality? _____ feet If your answer is <b>9 feet or less (one lane) or 18 feet (two lanes)</b> , give yourself 1 point.	0	0	0	1	0	0	0	1	0	0	2	20%	NA	0
14. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc)? If your answer is YES, give yourself 1 point.	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
15. Can a "two track" design be used at single family driveways? (grass in between) If your answer is YES, give yourself 1 point.	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
16. Are shared driveways permitted in residential developments? If your answer is YES, give yourself 1 point.	0	0	0	0	0	0	0	1	0	0	1	10%	NA	1
17. Are driveways allowed to be sloped to drain to yard areas instead of the street? If your answer is YES, give yourself 1 point.	0	0	0	1	0	0	0	0	0	0	1	10%	NA	1
<b>Possible Points By Sub Category</b>	5	5	5	5	5	5	5	5	5	5			0	3
<b>Points Achieved</b>	0	0	0	2	0	0	0	2	0	0			0	2
<b>Score (%)</b>	0%	0%	0%	40%	0%	0%	0%	40%	0%	0%			#DIV/0!	67%

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Parking Ratios</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
18. What is the minimum parking ratio for a professional office building (per 1000 ft2 of gross floor area)? _____ spaces If your answer is <b>less than 3.0 spaces</b> , give yourself 1 point.	0	0	0	0	0	0	0	0	0	0	0	0%	0	NA
19. What is the minimum required parking ratio for shopping centers (per 1,000 ft2 gross floor area)? _____ spaces If your answer is <b>4.5 spaces or less</b> , give yourself 1 point.	0	1	0	0	1	0	0	1	1	0	4	40%	NA	NA
20. What is the minimum required parking ratio for single family homes (per home)? _____ spaces If your answer is <b>less than or equal to 2.0 spaces</b> , give yourself 1 point	1	1	1	1	0	1	1	1	1	1	9	90%	NA	NA
<b>Possible Points By Sub Category</b>	3	3	3	3	3	3	3	3	3	3			1	0
<b>Points Achieved</b>	1	2	1	1	1	1	1	2	2	1			0	0
<b>Score (%)</b>	33%	67%	33%	33%	33%	33%	33%	67%	67%	33%			0%	#DIV/0!
<b>Shared Parking</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
22. Is the use of shared parking arrangements promoted? If your answer is YES, give yourself 1 point	1	1	0	1	1	0	1	0	1	0	6	60%	NA	NA
23. Are model shared parking agreements provided? If your answer is YES, give yourself 1 point	0	0	0	0	0	0	0	0	0	0	0	0%	0	NA
24. Are parking ratios reduced if shared parking arrangements are in place? If your answer is YES, give yourself 1 point.	1	1	0	0	0	0	0	0	1	0	3	30%	NA	NA
25. If mass transit is provided nearby, is the parking ratio reduced? If your answer is YES, give yourself 1 point	1	0	0	0	0	0	0	0	0	0	1	10%	NA	NA
<b>Possible Points By Sub Category</b>	4	4	4	4	4	4	4	4	4	4			1	0
<b>Points Achieved</b>	3	2	0	1	1	0	1	0	2	0			0	0
<b>Score (%)</b>	75%	50%	0%	25%	25%	0%	25%	0%	50%	0%			0%	#DIV/0!

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cty
<b>Parking Lot Design Standards</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
26. What is the minimum stall width for a standard parking space? _____ feet If your answer is <b>9 feet or less</b> , give yourself 1 point.	1	1	0	1	0	1	1	1	1	1	8	80%	1	NA
27. What is the minimum stall length for a standard parking space? _____ feet If your answer is <b>18 feet or less</b> , give yourself 1 point	1	0	0	1	0	0	1	0	1	0	4	40%	1	NA
28. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars? If your answer is YES, give yourself 1 point	0	0	0	0	0	0	0	0	0	0	0	0%	0	NA
29. Can pervious materials be used for spillover parking areas? If your answer is YES, give yourself 1 point	0	0	0	0	0	0	1	0	0	0	1	10%	1	NA
30. Is a minimum percentage of a parking lot required to be landscaped? If your answer is YES, give yourself 1 point	1	0	0	1	0	0	0	1	1	1	5	50%	0	NA
31. Is the use of bioretention areas and other stormwater practices within landscaped areas or setbacks allowed? If your answer is YES, give yourself 1 point	0	0	0	1	0	0	1	1	0	0	3	30%	1	NA
32. Are there any incentives to developers to provide parking within garages rather than surface parking lots? If your answer is YES, give yourself 1 point	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
<b>Possible Points By Sub Category</b>	7	7	7	7	7	7	7	7	7	7			6	0
<b>Points Achieved</b>	3	1	0	4	0	1	4	3	3	2			4	0
<b>Score (%)</b>	43%	14%	0%	57%	0%	14%	57%	43%	43%	29%			67%	#DIV/0!
<b>Time to Assess:</b> Category I Questions 1 through 32 focused on the laws, ordinances and standards that determine the size, shape, and construction of roads, driveways, parking lots and building lots. There were a total of 32 points available. What was your total score?														
<b>Total Possible Points</b>	31	31	31	31	31	31	31	31	31	31			17	10
<b>Total Points Achieved</b>	9	5.5	3	11	6	5	8	13.5	11	4			8	7
<b>Total Overall Category I Score</b>	29%	18%	10%	35%	19%	16%	26%	44%	35%	13%			47%	70%
<b>Category II: Preservation of Natural Features and Conservation Design</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
<b>Community Planning for Natural Areas</b>														
35. Does the local or institutional comprehensive plan contain a natural resource protection element with goals calling for preservation of identified critical natural resource areas? (steep slopes, wildlife habitat, drinking water source areas including aquifer recharge areas) If your answer is YES, give yourself 1 point	1	0	1	0	0	0	1	0	1	1	5	50%	0	0
<b>Possible Points By Sub Category</b>	1	1	1	1	1	1	1	1	1	1			1	1
<b>Points Achieved</b>	1	0	1	0	0	0	1	0	1	1			0	0
<b>Score (%)</b>	100%	0%	100%	0%	0%	0%	100%	0%	100%	100%			0%	0%

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cty
<b>Locating Sites in Less Sensitive Areas</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
36. Does the municipality have a floodplain management ordinance or local law that prevents new building and filling in the 100-year floodplain (i.e. more stringent than a Flood Damage Prevention Law, commonly adopted to meet minimum requirements for participation in the FEMA flood insurance program)?	1	0	0	0	0	0	1	0	1	1	4	40%	1	0
If your answer is YES, give yourself 1 point.														
37. Does the municipality have a steep slope, grading, or erosion and sediment control law that requires avoidance of development on steep slope areas and minimizes grading and flattening of hills and ridges?	1	1	0	0	0	0	1	0	1	1	5	50%	0	0
If your answer is YES, give yourself 1 point.														
Are steep slopes defined with angle of repose ____or percentage of slope____?														
38. Does the municipality require avoidance and protection of highly erodible soils through a steep slope, grading, or erosion and sediment control law?	0	1	0	0	0	0	1	0	0	0	2	20%	1	0
If your answer is YES, give yourself 1 point.														
39. Does the municipality provide incentives for development on previously altered sites or in designated priority growth areas?	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
If your answer is YES, give yourself .5 point.														
<b>Possible Points By Sub Category</b>	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5			3	3
<b>Points Achieved</b>	2	2	0	0	0	0	3	0	2	2			2	0
<b>Score (%)</b>	57%	57%	0%	0%	0%	0%	86%	0%	57%	57%			67%	0%
<b>Preservation of Undisturbed Areas</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
40. Does the municipality require that natural conservation areas are delineated and defined before site layout and design are conducted?	0	1	0	0	0	1	1	0	1	0	4	40%	1	NA
If your answer is YES, give yourself 1 point.														
41. Does the municipality require that conservation areas and native vegetation be protected in an undisturbed state during the design, construction and occupancy stages?	1	1	0	0	0	0	1	1	1	0	5	50%	1	1
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	1
<b>Points Achieved</b>	1	2	0	0	0	1	2	1	2	0			2	1
<b>Score (%)</b>	50%	100%	0%	0%	0%	50%	100%	50%	100%	0%			100%	100%

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Stream and Wetland Buffers</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
42. Does the municipality have a stream buffer ordinance or local law?	0	0	0	0.5	0	0	0	0	0.5	0	1	10%	0	0
If yes, and it is for all streams give yourself 1 point.														
If yes, but it is only for some streams give yourself .5 points.														
43. If so, what is the minimum buffer width? _____ feet	0	1	0	0	0	0	0	0	2	0	3	30%	NA	NA
If your answer is <b>100 feet or more</b> , give yourself 2 points.														
If your answer is <b>between 50-100 feet</b> , give yourself 1 point.														
44. Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required?	0	0	0	0	0	0	0	0	0	0	0	0%	1	NA
If your answer is YES, give yourself 1 point.														
45. Does the ordinance also regulate intermittent streams?	0	1	0	0	0	0	0	0	0	0	1	10%	NA	NA
If your answer is YES, give yourself 1 point.														
46. Does the municipality have a local wetland buffer ordinance or local law?	0	0	0	1	0	0	0	0	0	0	1	10%	1	NA
If your answer is YES, give yourself 1 point.														
47. In the wetland ordinance, what is the minimum regulated wetland size?	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
If you answer is all wetlands regardless of size give yourself 1 point.														
If your answer is between 0-5 acres, give yourself .5 point														
48. What is the minimum buffer width for wetlands?	0	2	0	0	0	0	0	0	0	0	2	20%	NA	NA
_____ feet														
If your answer is <b>100 feet or more</b> , give yourself 2 points.														
If your answer is <b>between 50-100 feet</b> , give yourself 1 point.														
<b>Possible Points By Sub Category</b>	7	7	7	7	7	7	7	7	7	7			6	0
<b>Points Achieved</b>	0	4	0	1	0	0	0	0	2	0			2	0
<b>Score (%)</b>	0%	57%	0%	14%	0%	0%	0%	0%	29%	0%			33%	#DIV/0!
<b>Stream and Wetland Buffer Uses and Enforcement</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
49. Do the stream and wetland ordinances specify low impact uses in the buffer that are compatible with conservation such as passive recreation?	0	0	0	0	0	0	0	0	0.5	0	0.5	5%	NA	NA
If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.														
50. Do the ordinances/local laws specify enforcement and education mechanisms?	0	0	0	0	0	0	0	0	0.5	0	0.5	5%	NA	NA
If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.														
51. Do stream and wetland buffer ordinances/local laws specify that at least part of the buffer be maintained with native vegetation?	0	0	0	1	0	0	0	0	0.5	0	1.5	15%	NA	NA
If your answer is YES, give yourself .5 point for wetland buffers and .5 point for stream buffers for a possible total of 1 point.														
<b>Possible Points By Sub Category</b>	3	3	3	3	3	3	3	3	3	3			0	0
<b>Points Achieved</b>	0	0	0	1	0	0	0	0	1.5	0			0	0
<b>Score (%)</b>	0%	0%	0%	33%	0%	0%	0%	0%	50%	0%			#DIV/0!	#DIV/0!

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Open Space and Flexible Design</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
52. Does the municipality/other public institution have open space design, conservation subdivision or cluster development provisions in local zoning or subdivision laws or construction policies?	1	1	0	1	0	0	1	1	1	1	7	70%	0	NA
If your answer is YES, give yourself 1 point.														
If your answer is NO, skip to question under <i>open space management</i> .														
59. Are critical natural resource areas deducted from the total acreage count that is used to calculate density? (e.g. on a 50 acre site with 10 acres of natural resources; such as wetlands, forests, only 40 acres can be used to calculate density under zoning district regulations, and only those 40 acres can be developed).	1	0	0	0	0	0	1	0	1	1	4	40%	0	NA
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	0
<b>Points Achieved</b>	2	1	0	1	0	0	2	1	2	2			0	0
<b>Score (%)</b>	100%	50%	0%	50%	0%	0%	100%	50%	100%	100%			0%	#DIV/0!
<b>Open Space Management</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
60. Does the municipality have enforceable requirements to establish agreements that can effectively manage open space?	0	0	0	0	0	0	1	1	1	1	4	40%	NA	NA
If your answer is YES, give yourself 1 point.														
61. Does a minimum percentage of open space have to be managed in a natural condition?	0	0	0	0	0	0	1	0	1	0	2	20%	0	NA
If your answer is YES, give yourself 1 point.														
62. Are allowable and unallowable uses for open space in residential developments defined?	0	0	0	0	0	0	0	1	1	0	2	20%	NA	NA
If your answer is YES, give yourself 1 point.														
63. Can open space be managed by a third party using land trusts or conservation easements?	0	0	0	0	0	0	1	1	1	0	3	30%	NA	NA
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	4	4	4	4	4	4	4	4	4	4			0	0
<b>Points Achieved</b>	0	0	0	0	0	0	3	3	4	1			0	0
<b>Score (%)</b>	0%	0%	0%	0%	0%	0%	75%	75%	100%	25%			#DIV/0!	#DIV/0!
<b>Clearing and Grading</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
64. Is there an ordinance or local law that requires erosion and sediment control on development sites using the design criteria in, "New York Standards and Specifications for Erosion and Sediment Control"?	1	1	1	0	0	1	1	1	1	1	8	80%	1	0
If your answer is YES, give yourself 1 point.														
65. Is there an ordinance that requires buffer zones be maintained between development and land preservation areas?	0	0	0	0	0	0	0	0	0	0	0	0%	1	NA
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	1
<b>Points Achieved</b>	1	1	1	0	0	1	1	1	1	1			2	0
<b>Score (%)</b>	50%	50%	50%	0%	0%	50%	50%	50%	50%	50%			100%	0%

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Tree and Forest Conservation</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
67. If forests are present at residential development sites, do stands have to be preserved?	0	1	0	0	0	0	0	0	0	0	1	10%	NA	NA
If your answer is YES, give yourself 1 point.														
68. Are the limits of disturbance shown on construction plans adequate for preventing clearing of trees and natural vegetative cover during construction?	0	0	0	1	0	0	1	1	1	0	4	40%	1	1
If your answer is YES, give yourself 1 point.														
69. Is there an ordinance or local law that requires forestry best management practices for timber harvesting and tree cutting?	0	0	0	0	0	0	0	0	0	0	0	0%	NA	0
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	3	3	3	3	3	3	3	3	3	3			2	3
<b>Points Achieved</b>	0	1	0	1	0	0	1	1	1	0			1	1
<b>Score (%)</b>	0%	33%	0%	33%	0%	0%	33%	33%	33%	0%			50%	33%
<b>Conservation Incentives-financial</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
70. Does the municipality have a local open space fund through bonding, real estate transfer tax, or other funding mechanism to encourage open space protection?	0	0	0	0	0	0	0	0	1	0	1	10%	NA	NA
If your answer is Yes give yourself 1 point.														
71. Does the municipality use local, county, state, federal or private open space funding for purchase or transfer of development rights programs?	0	0	0	0	0	0	0	0	0	0	0	0%	NA	NA
If your answer is Yes give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			0	0
<b>Points Achieved</b>	0	0	0	0	0	0	0	0	1	0			0	0
<b>Score (%)</b>	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%			#DIV/0!	#DIV/0!
<b>Total Possible Points</b>	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5			18	9
<b>Total Points Achieved</b>	7	11	2	4	0	2	13	7	17.5	7			9	2
<b>Total Overall Category II Score</b>	24%	37%	7%	14%	0%	7%	44%	24%	59%	24%			50%	22%

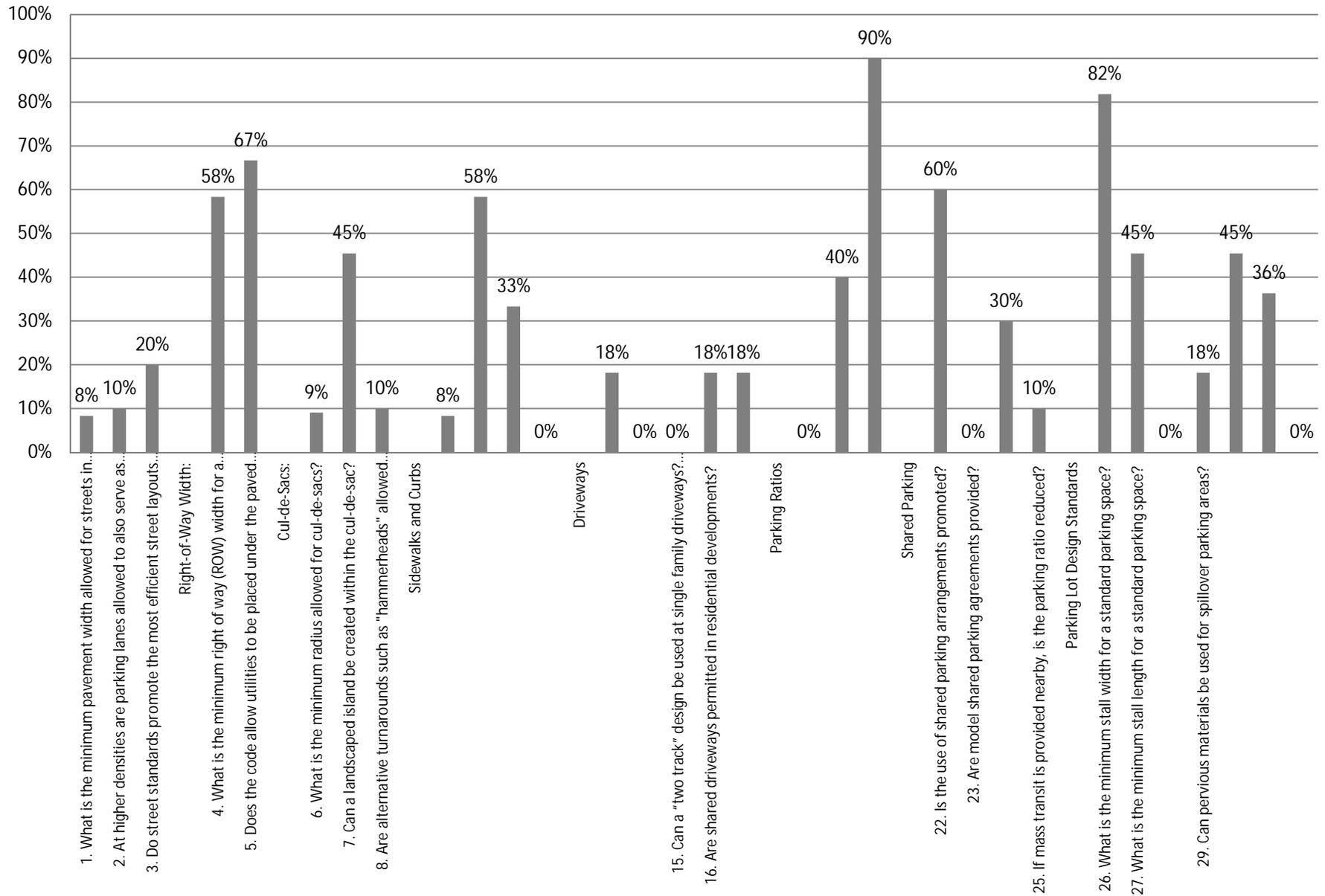
QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (cSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cty
<b>Category III: Design Elements for Stormwater Management</b>														
<b>Vegetated Open Channels</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
75. Are curb and gutters required for most residential street sections?	0	0	1	1	0	1	1	1	0	0	5	50%	0	1
If your answer is NO, give yourself 1 point														
76. Are there established design criteria for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?	0	1	0	0	0	0	1	0	1	1	4	40%	1	0
If your answer is yes, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	2
<b>Points Achieved</b>	0	1	1	1	0	1	2	1	1	1			1	1
<b>Score (%)</b>	0%	50%	50%	50%	0%	50%	100%	50%	50%	50%			50%	50%
<b>Rooftop Runoff</b>														
77. Can rooftop runoff be discharged to yard areas?	0	0	0	0	0	0	1	0	0	0	1	10%	1	1
If your answer is YES, give yourself 1 point.														
78. Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops?	0	0	0	0	0	0	1	1	0	0	2	20%	0	1
If your answer is YES, give yourself 1 point.														
<b>Possible Points By Sub Category</b>	2	2	2	2	2	2	2	2	2	2			2	2
<b>Points Achieved</b>	0	0	0	0	0	0	2	1	0	0			1	2
<b>Score (%)</b>	0%	0%	0%	0%	0%	0%	100%	50%	0%	0%			50%	100%

QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (cSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Infiltration</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns, tree boxes, downspout disconnect; and vegetated open swales.	0	0	0	0	0	0	1	0	1	0	2	20%	1	NA
If your answer is YES, give yourself 1 point														
80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.	0	1	0	0	0	1	1	0	0	0	3	30%	NA	NA
If your answer is YES, give yourself 1 point														
81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.	1	1	0	NA	1	NA	NA	NA	NA	NA	3	30%	NA	NA
If your answer is YES, give yourself 1 point														
<b>Possible Points By Sub Category</b>	3	3	3	2	3	2	2	2	2	2			1	0
<b>Points Achieved</b>	1	2	0	0	1	1	2	0	1	0			1	0
<b>Score (%)</b>	33%	67%	0%	0%	33%	50%	100%	0%	50%	0%			100%	#DIV/0!
<b>Time to Assess:</b> Category III Questions 75-86 focused on the local laws, ordinances and procedures related to stormwater management, specifically those encouraging green infrastructure practices. There were a total of 12 points available. What was your total score?														
<b>Total Possible Points</b>	7	7	7	6	7	6	6	6	6	6			5	4
<b>Total Points Achieved</b>	1	3	1	1	1	2	6	2	2	1			3	3
<b>Total Overall Category III Score</b>	14%	43%	14%	17%	14%	33%	100%	33%	33%	17%			60%	75%

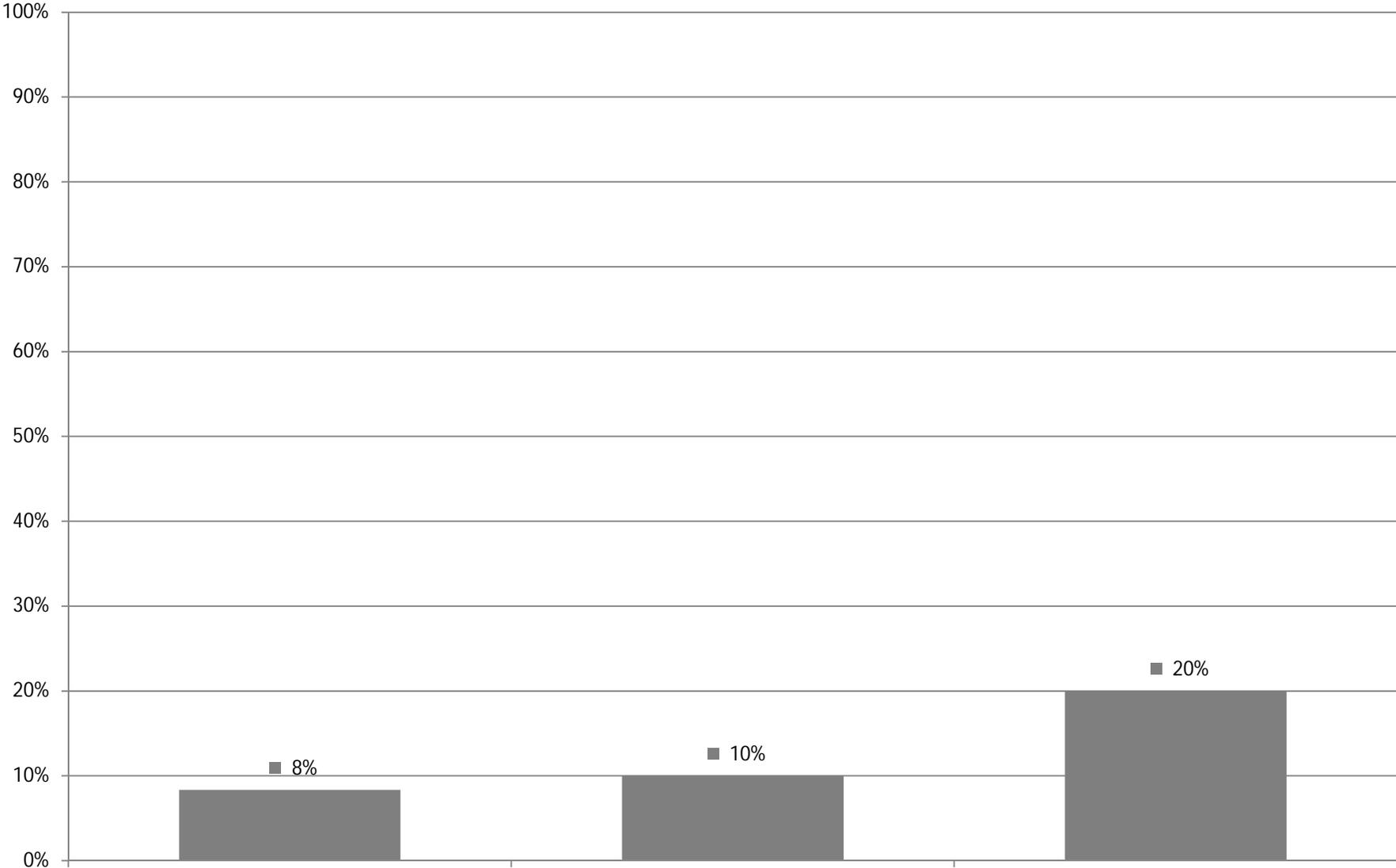
QUESTIONS	C/Alb (CSO)	C/Coh (CSO)	C/Wvliet (CSO)	V/Col	V/GI (CSO)	V/Men	V/Voor	T/Beth	T/Col	T/New S	TOTAL POINTS (By Question)	% Attained of 10 Possible Points (10 MS4s-C/V/T)	SUNY A	Alb Cnty
<b>Category IV: Promotion of efficient, compact development patterns and infill</b>	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor	Cor			Cor	Cor
87. Areas of the municipality or institutional property have been identified for higher density development based on existing infrastructure capacity, cost for providing new services and access. If your answer is YES, give yourself 1 point	0.5	0	1	0	1	0	1	1	0	0	4.5	45%	NA	NA
88. Local sewer and water capital improvement plans follow development policies established in local comprehensive plans or institutional policy and target areas with existing development/infrastructure. If your answer is YES, give yourself 1 point	1	0	1	1	1	0	0	1	0	0	5	50%	1	NA
89. A wide variety of housing types and sizes are allowed within infill areas as well as reduced minimum lot sizes and accessory dwelling units to increase density. If your answer is YES, give yourself 1 point	1	0	1	0	1	1	1	0	0	0	5	50%	NA	NA
90. Local stormwater management regulations provide a requirement that reduces on-site management requirements for projects that decrease total imperviousness on previously developed sites. If your answer is YES, give yourself 1 point	1	0	0	0	0	1	0	0	0	0	2	20%	NA	NA
91. Local government/other public institution plans (could be plans other than Comprehensive Plan) identify potential brownfield and greyfield sites and support their redevelopment. If your answer is YES, give yourself 1 point	1	0	0	1	1	0	0	0	1	0	4	40%	NA	NA
93. Streamlined permitting procedures facilitate infill and brownfield sites. If your answer is YES, give yourself 1 point	0	0	0	0	0	0	0	0	1	0	1	10%	NA	NA
94. The local code/institutional policy differentiates between Greenfield, adaptive reuse, and infill sites. If your answer is YES, give yourself 1 point	0	0	0	0	0	0	0	0	1	0	1	10%	NA	NA
<b>Possible Points By Sub Category</b>	7	7	7	7	7	7	7	7	7	7			1	0
<b>Points Achieved</b>	4.5	0	3	2	4	2	2	2	3	0			1	0
<b>Score (%)</b>	64%	0%	43%	29%	57%	29%	29%	29%	43%	0%			100%	#DIV/0!
<i>Time to Assess: Category IV Questions 87-94 focused on the local laws, ordinances and procedures that encourage land conservation and smart growth by allowing higher density in developed areas and brownfield sites. There were a total of 8.0 points. What was your total score?</i>														
<b>Total Possible Points</b>	7	7	7	7	7	7	7	7	7	7			1	0
<b>Total Points Achieved</b>	4.5	0	3	2	4	2	2	2	3	0			1	0
<b>Total Overall Category IV Score</b>	64%	0%	43%	29%	57%	29%	29%	29%	43%	0%			100%	#DIV/0!
<b>Total Possible Points - All Categories</b>	74.5	74.5	74.5	73.5	74.5	73.5	73.5	73.5	73.5	73.5			41	23
<b>Total Points Achieved - All Categories</b>	21.5	19.5	9	18	11	11	29	24.5	33.5	12			21	12
<b>Total Overall Scorecard Score</b>	29%	26%	12%	24%	15%	15%	39%	33%	46%	16%			51%	52%

**Appendix E**  
**All MS4 Gap Analysis**

## Category I: Reduction of Impervious Cover



# Street width and length:

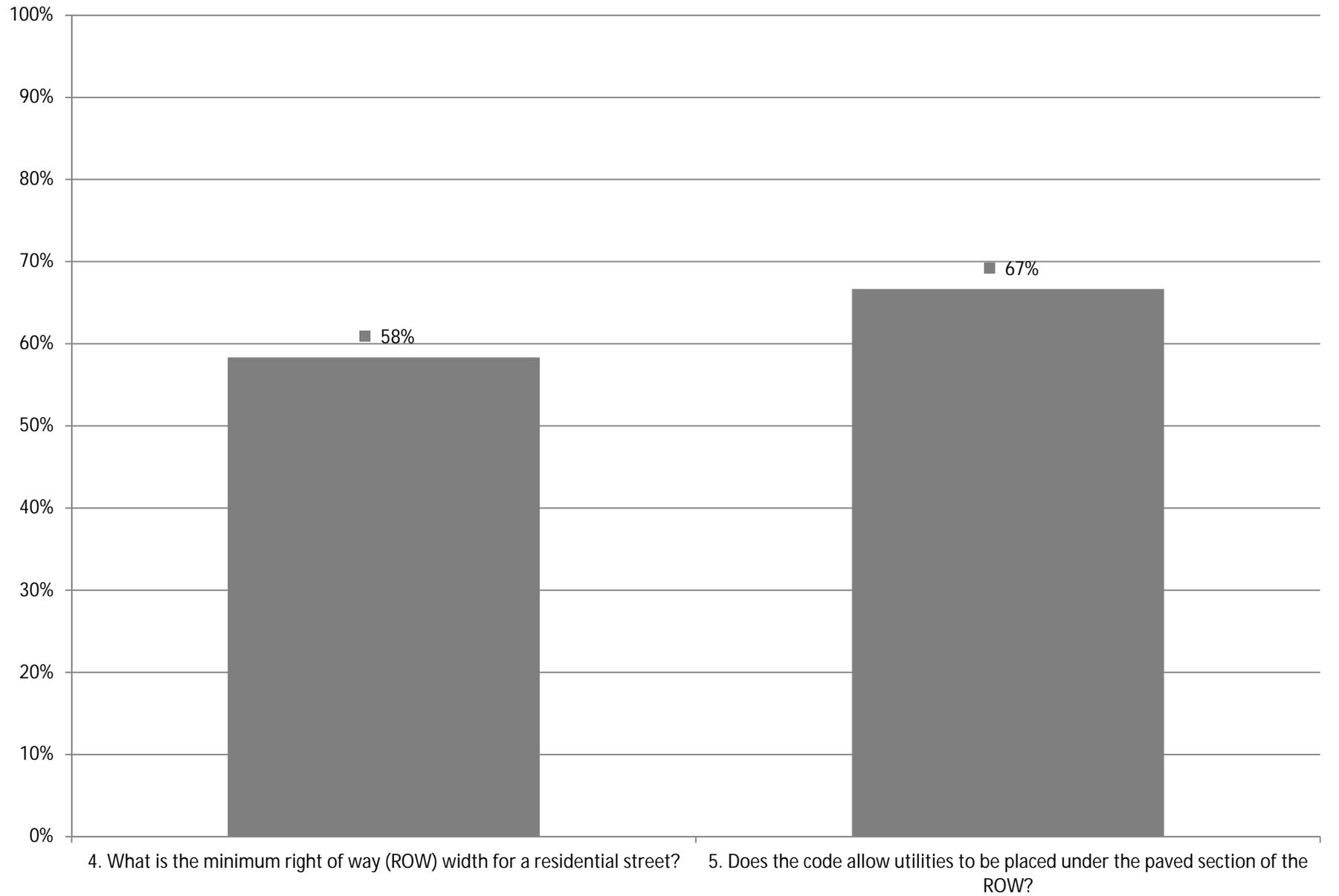


1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)?

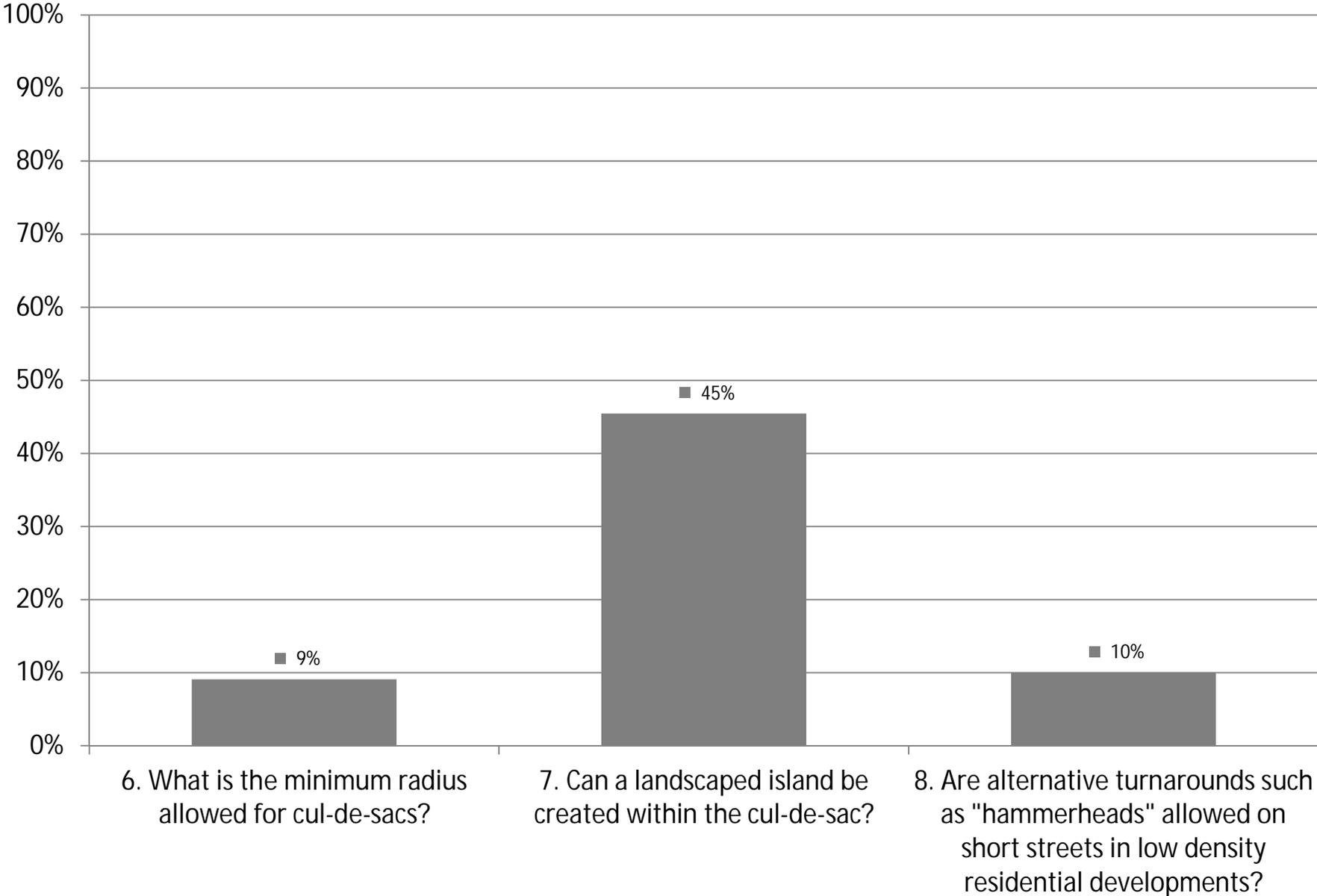
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?

3. Do street standards promote the most efficient street layouts that reduce overall street length?

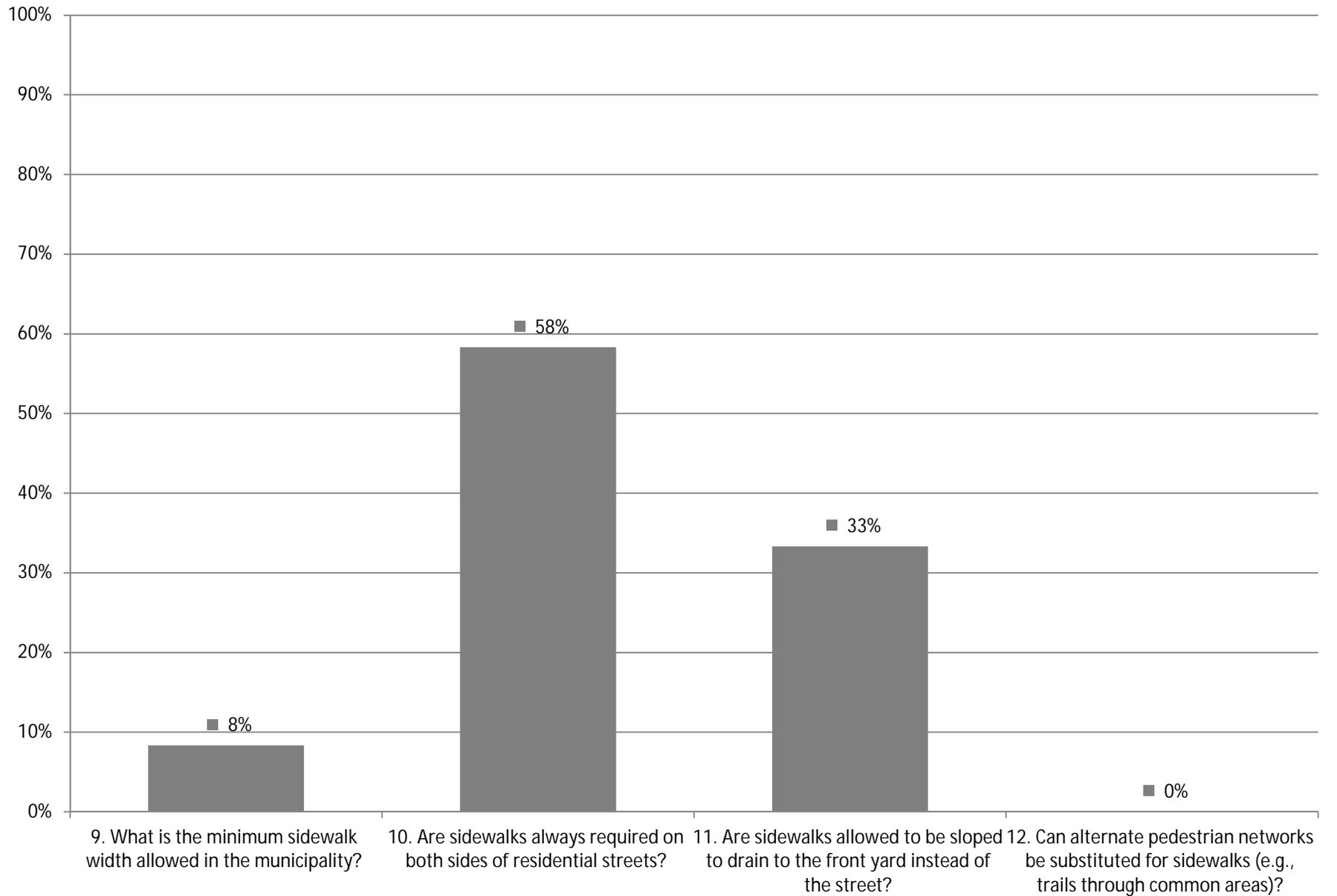
## Right-of-Way Width:



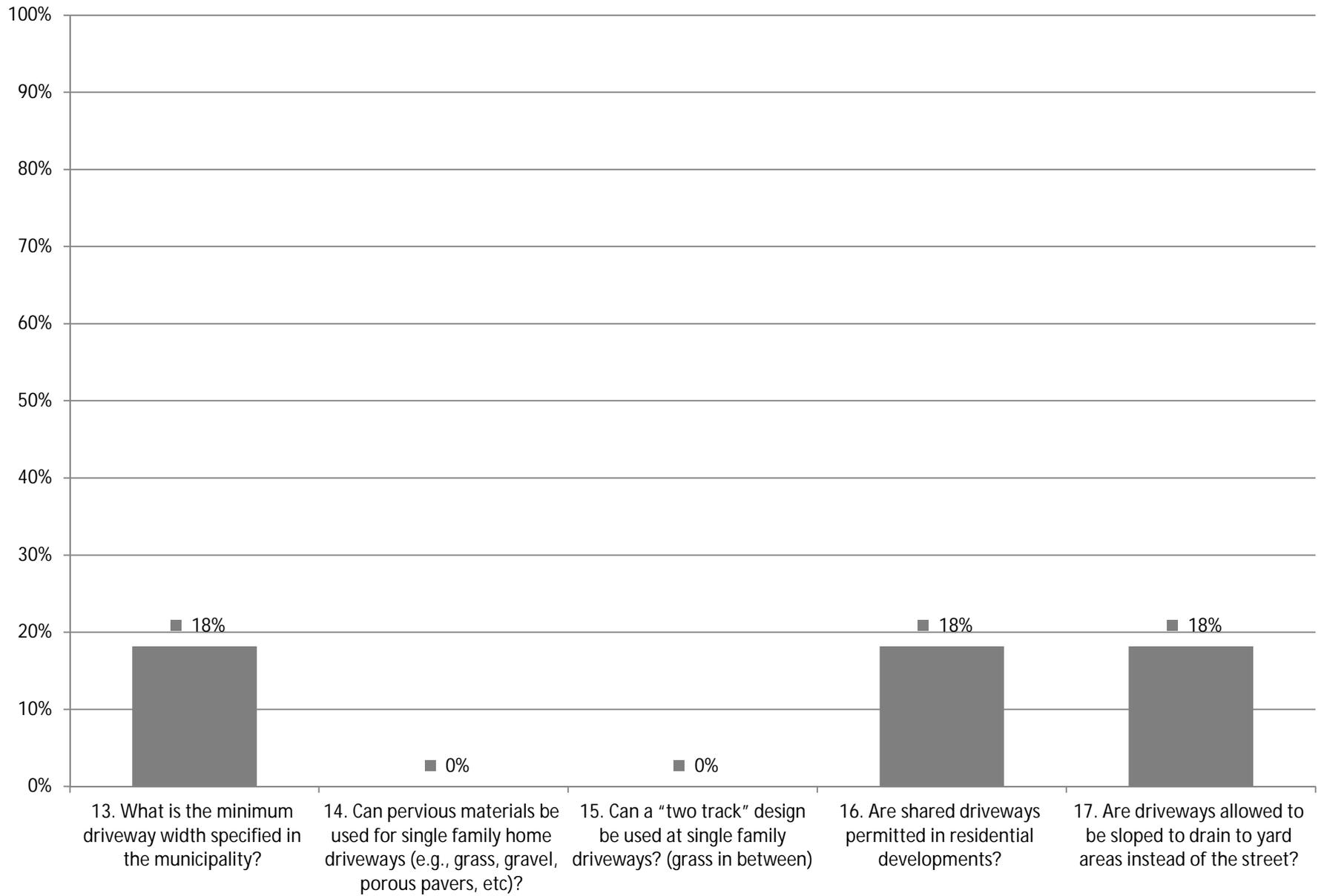
### Cul-de-Sacs:



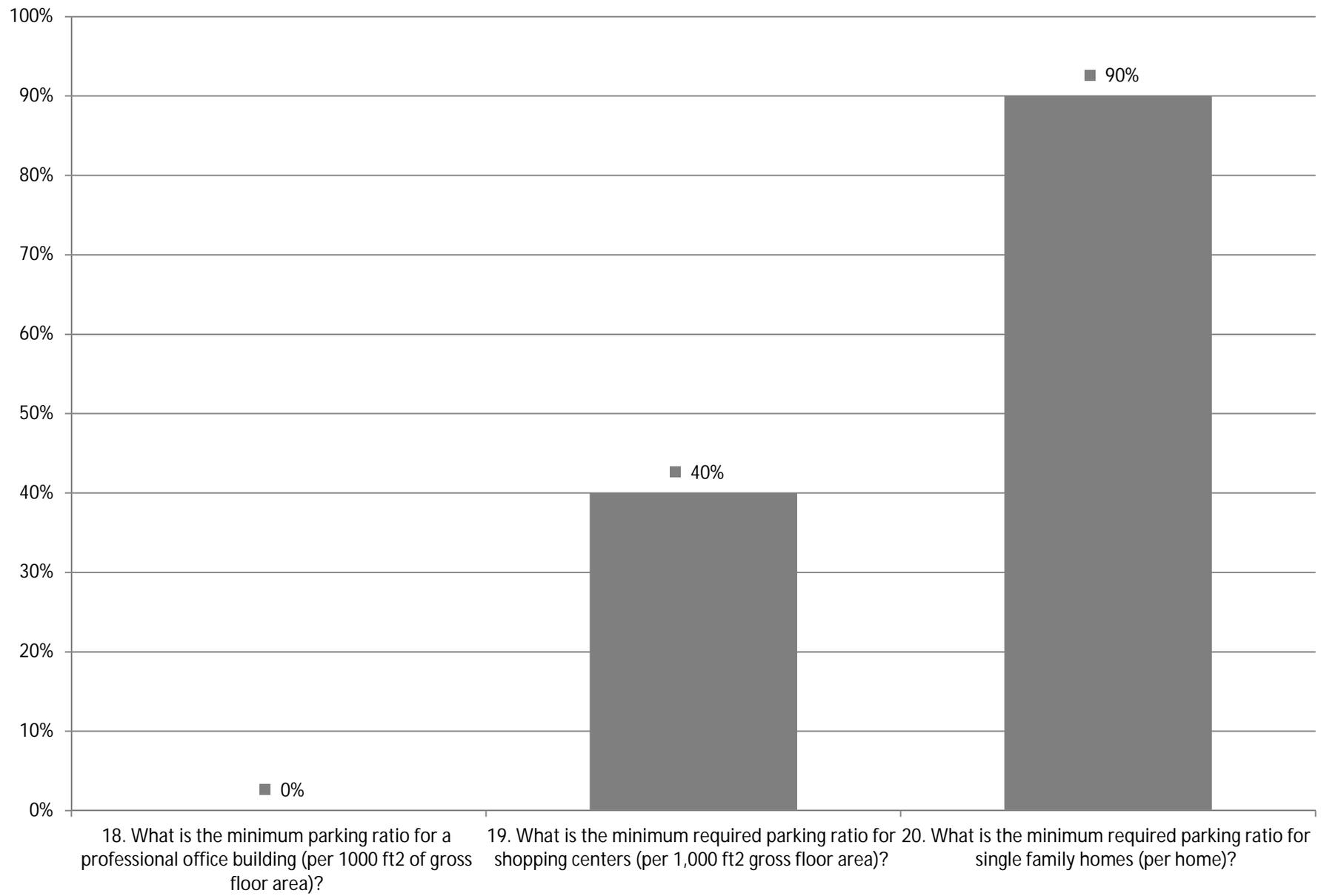
## Sidewalks and Curbs



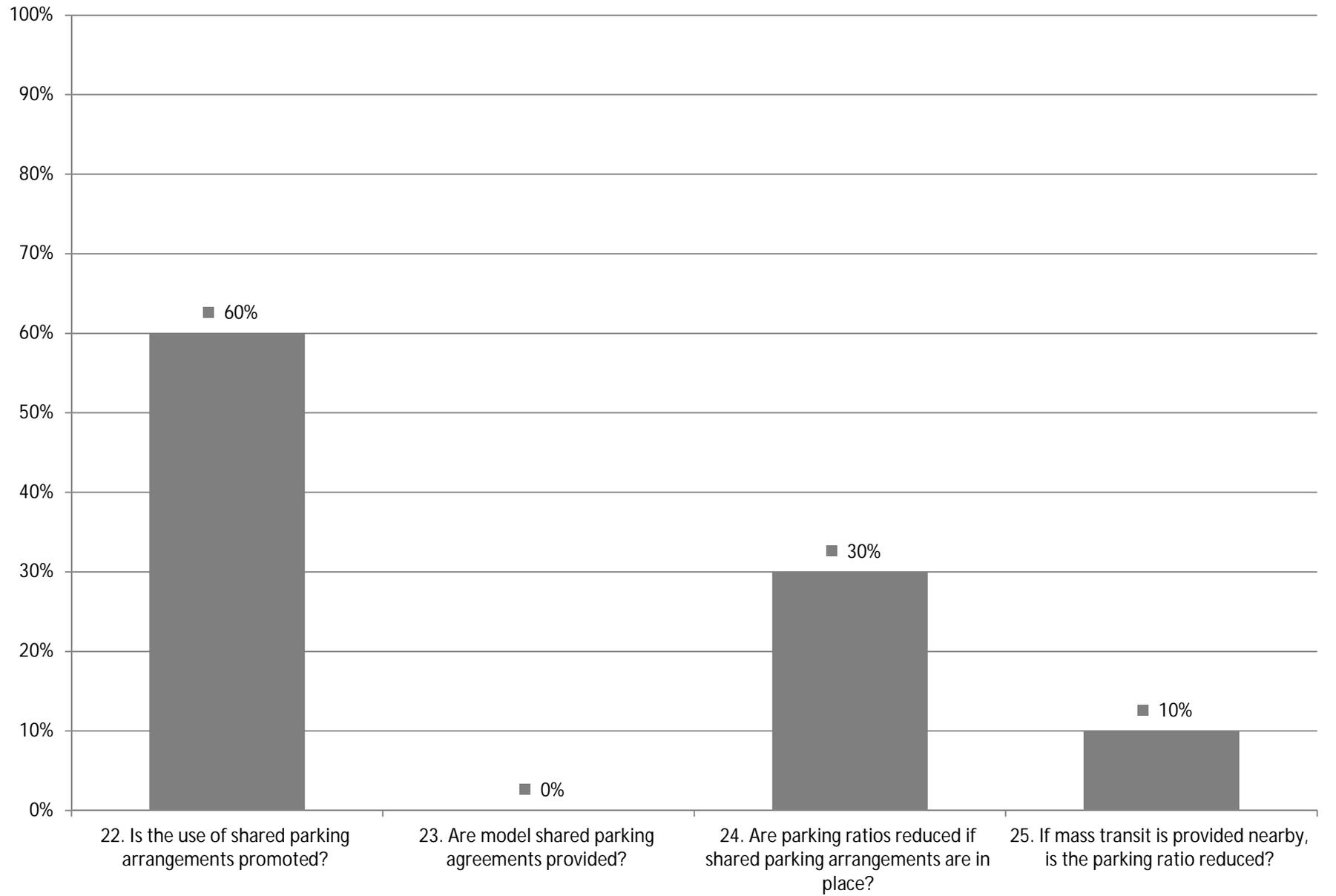
# Driveways



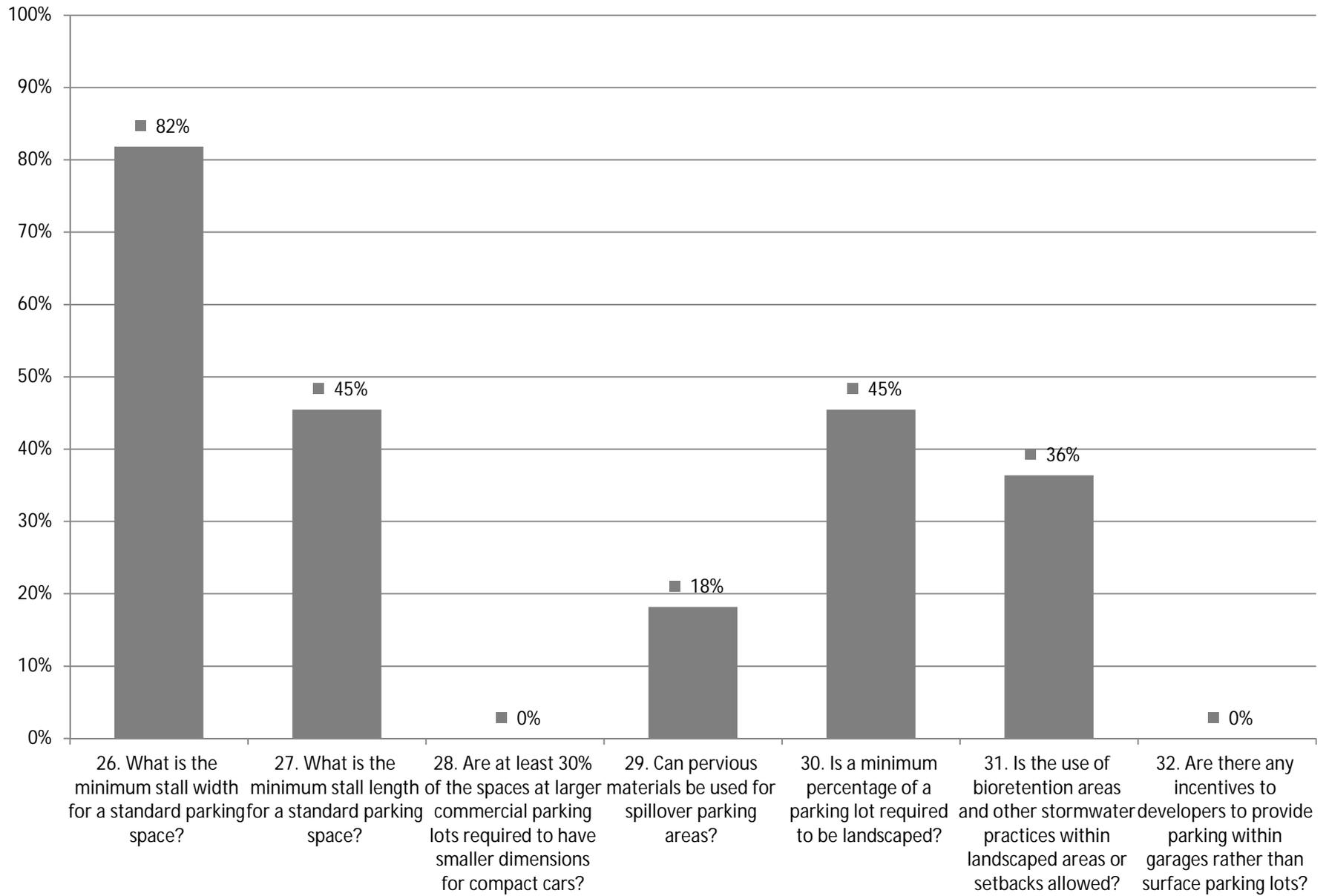
# Parking Ratios



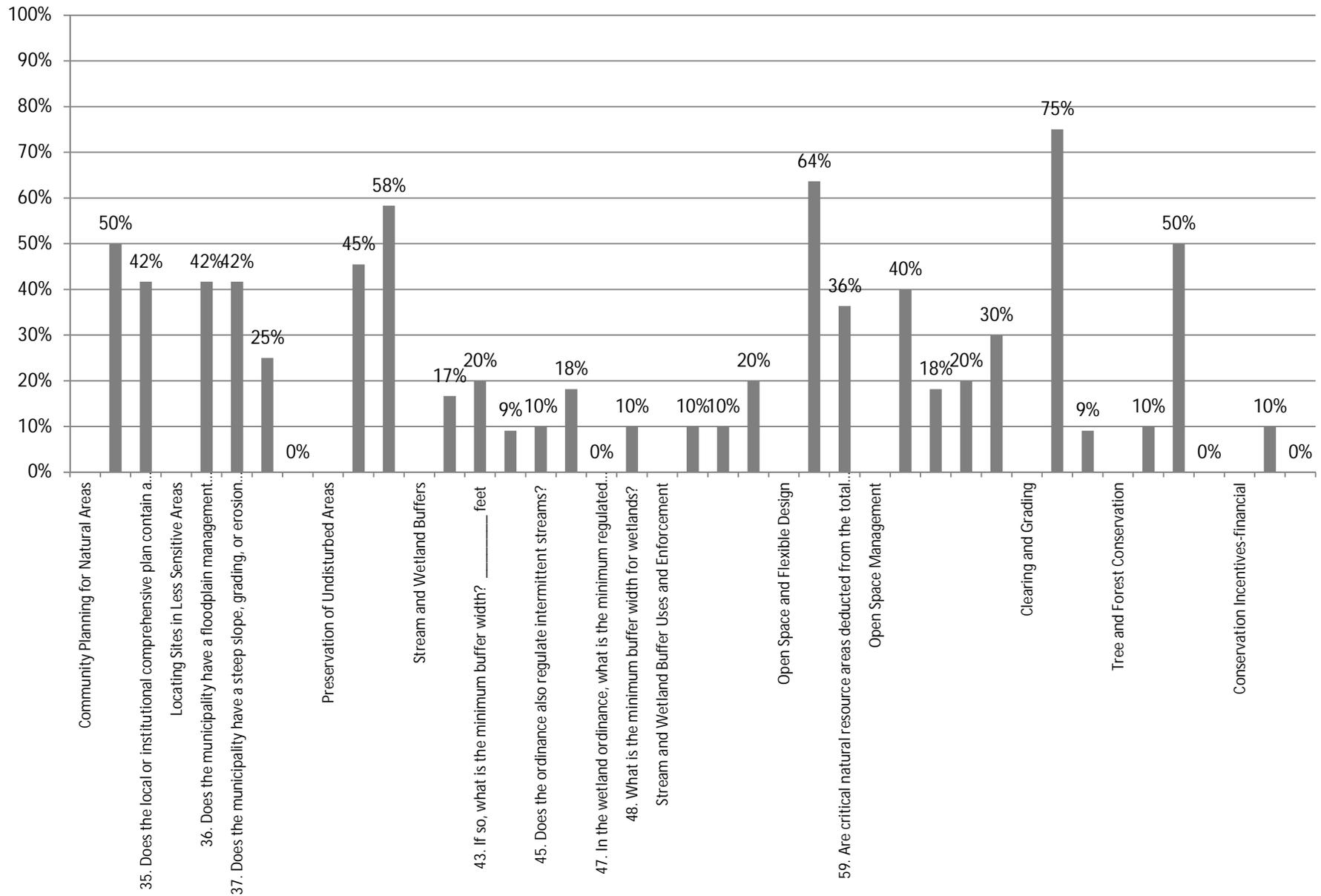
# Shared Parking



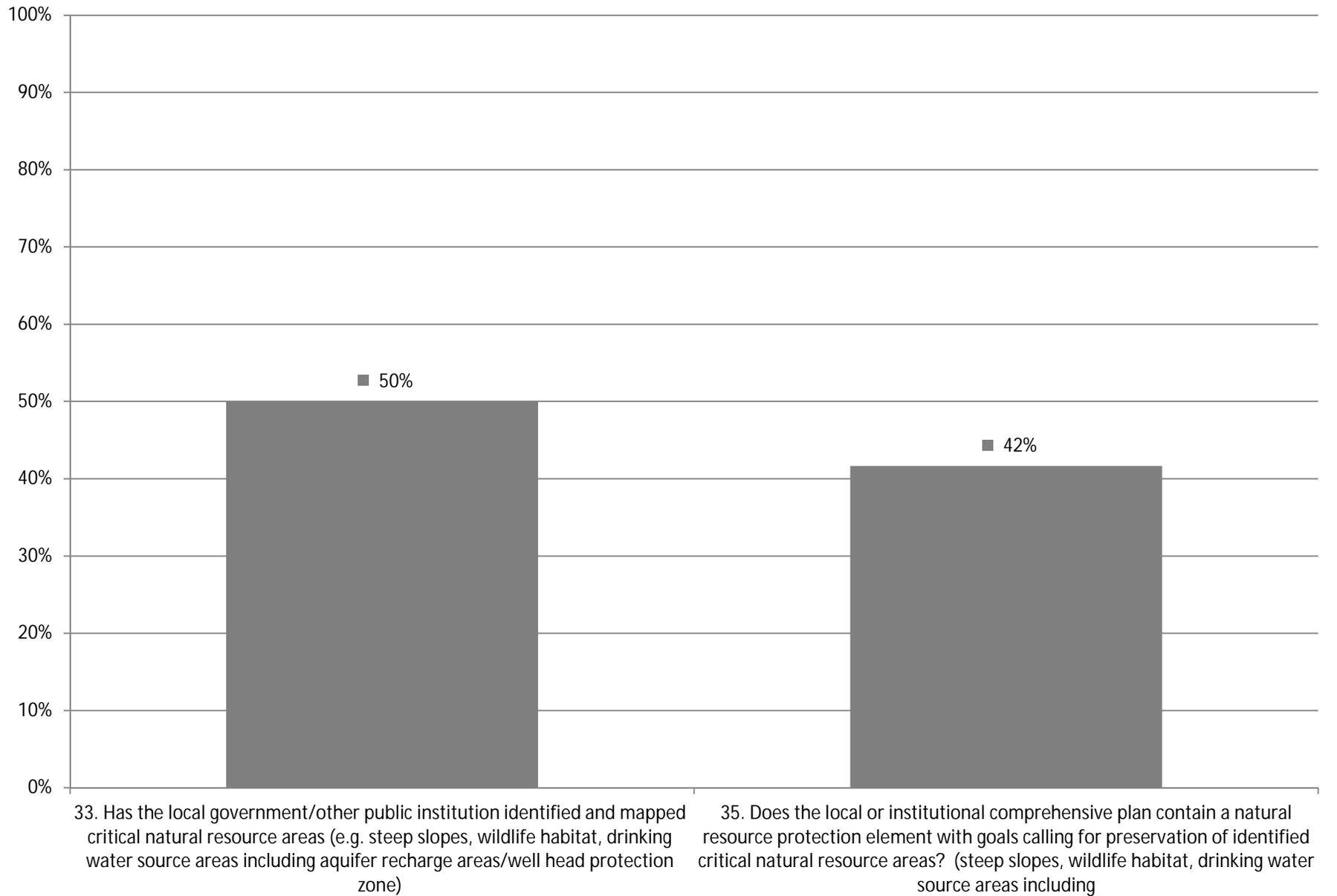
## Parking Lot Design Standards



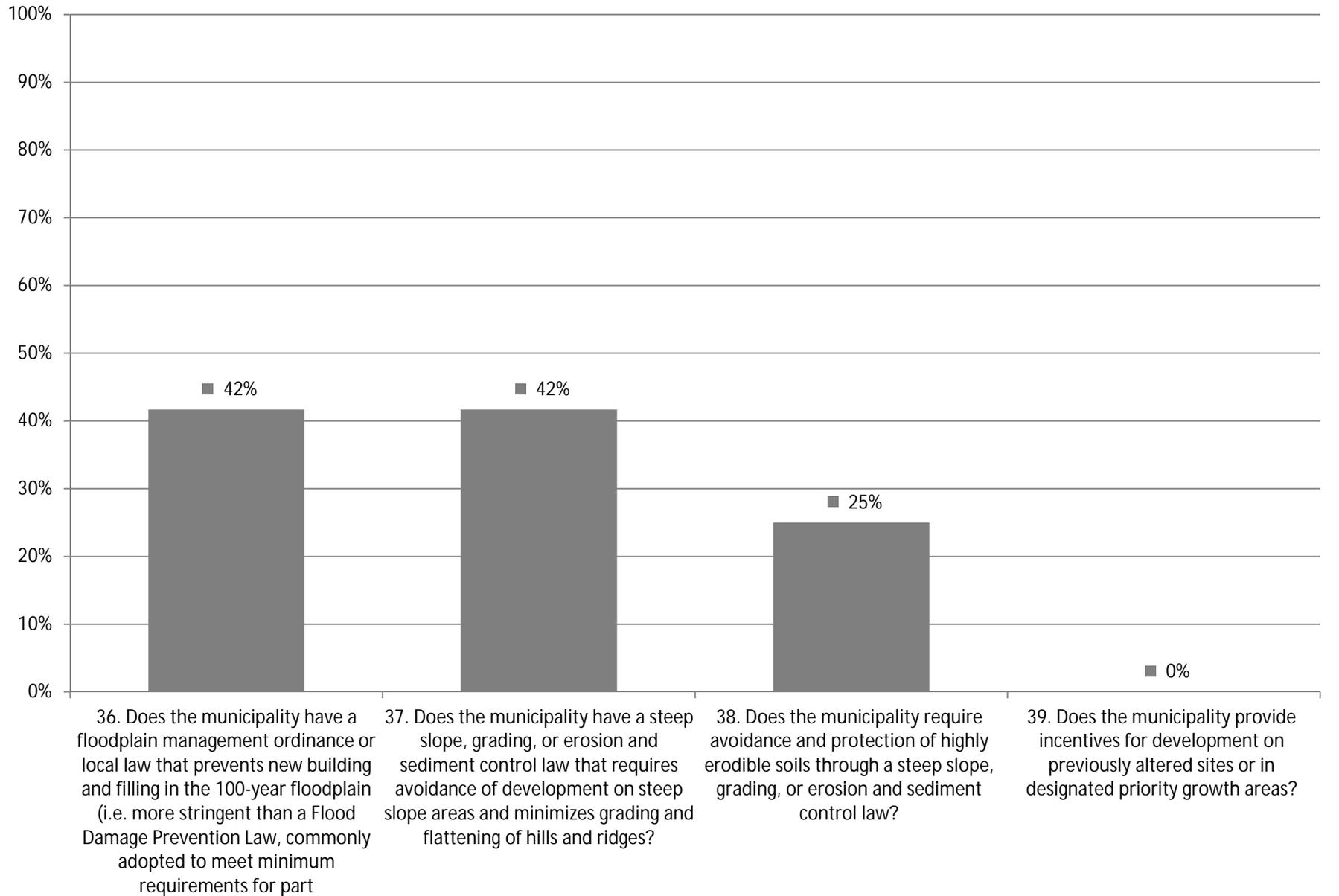
## Category II: Preservation of Natural Features and Conservation Design



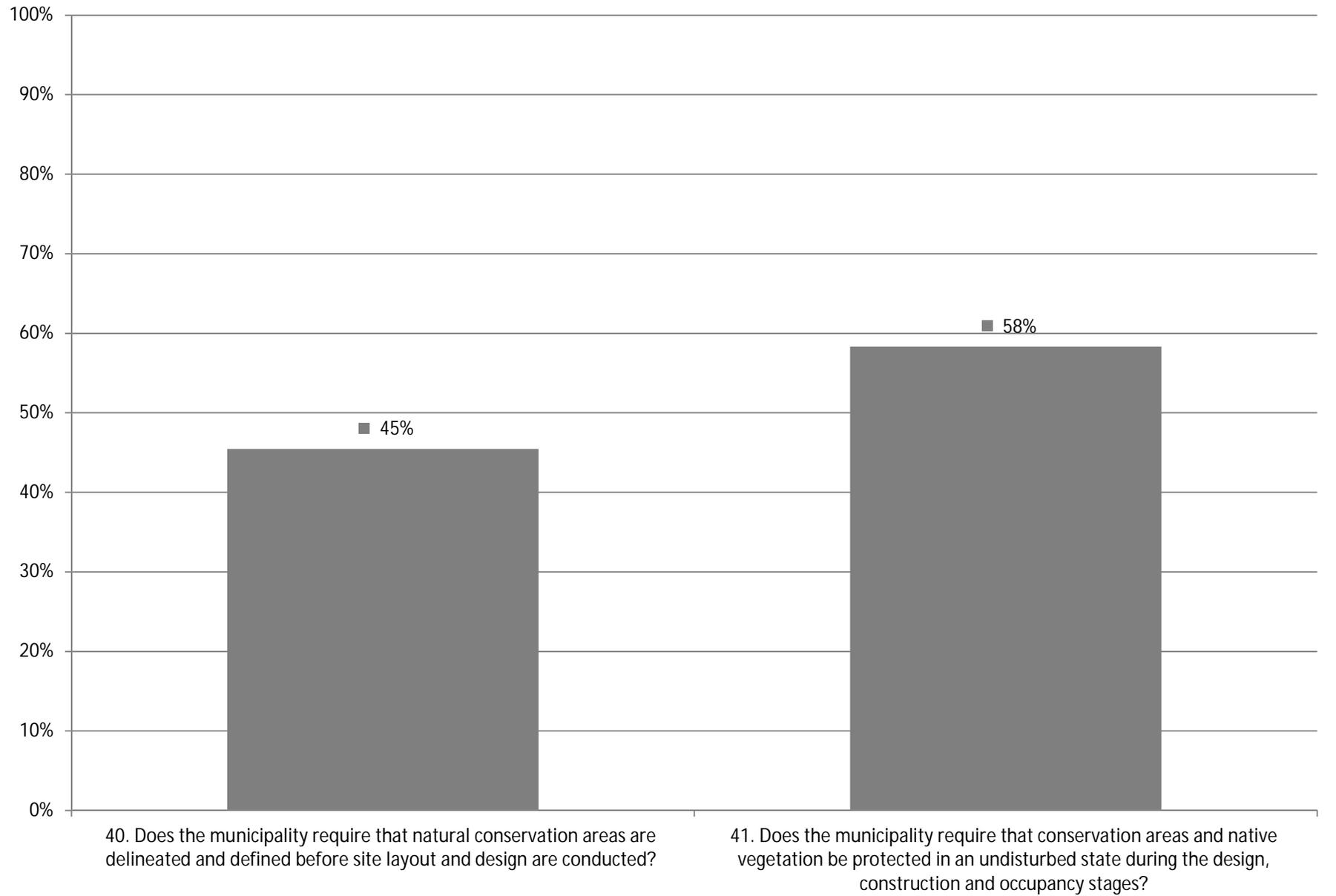
## Community Planning for Natural Areas



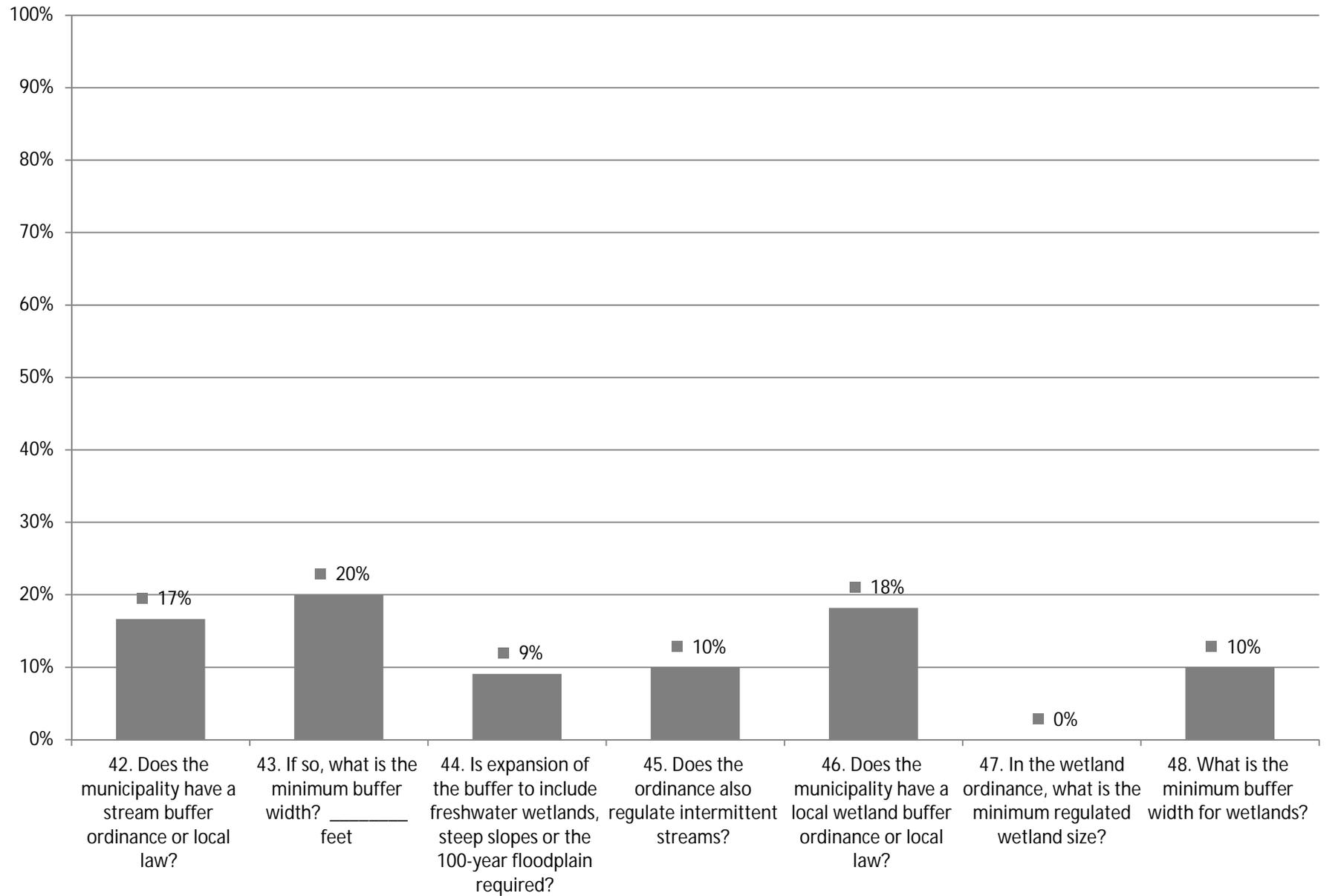
## Locating Sites in Less Sensitive Areas



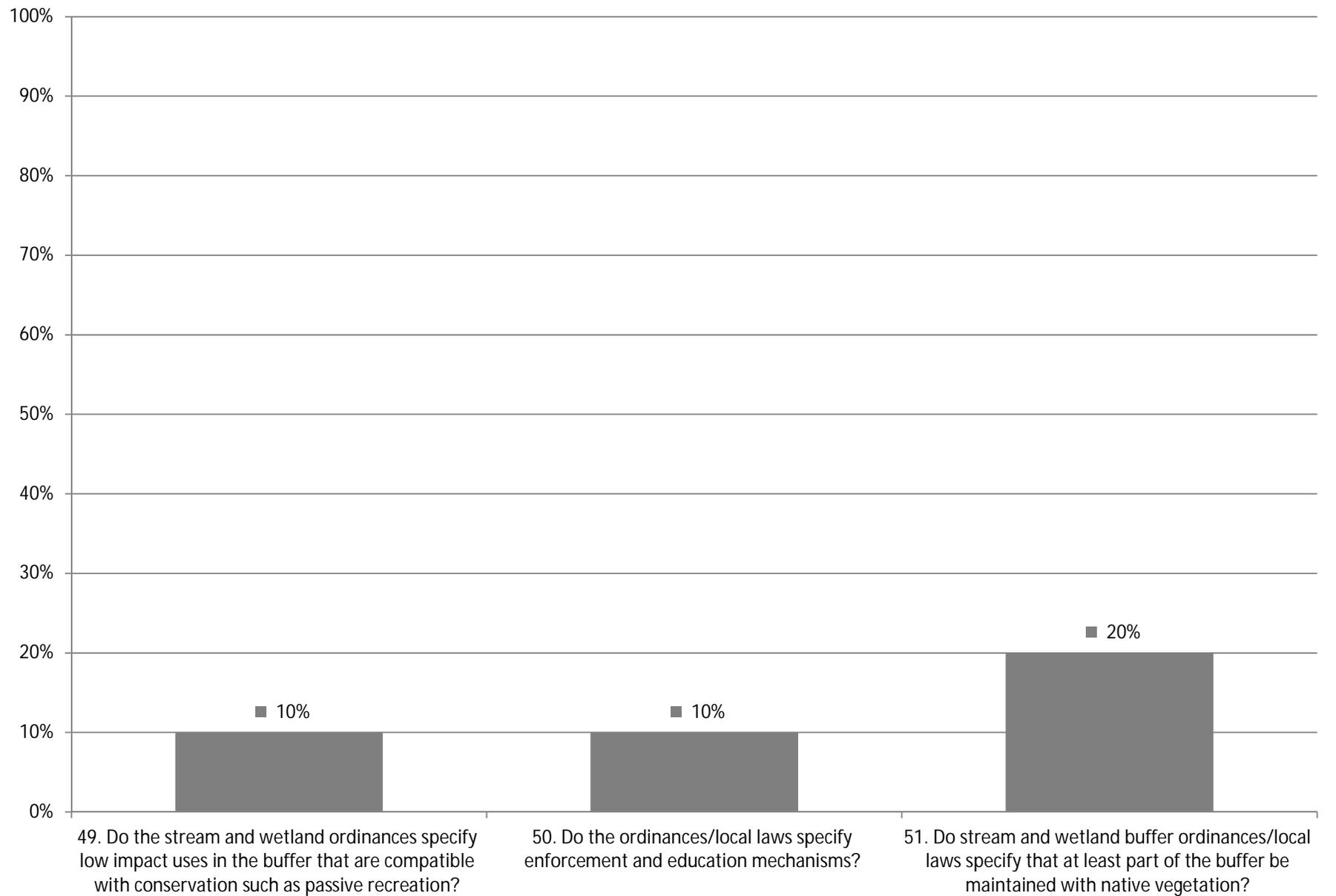
## Preservation of Undisturbed Areas



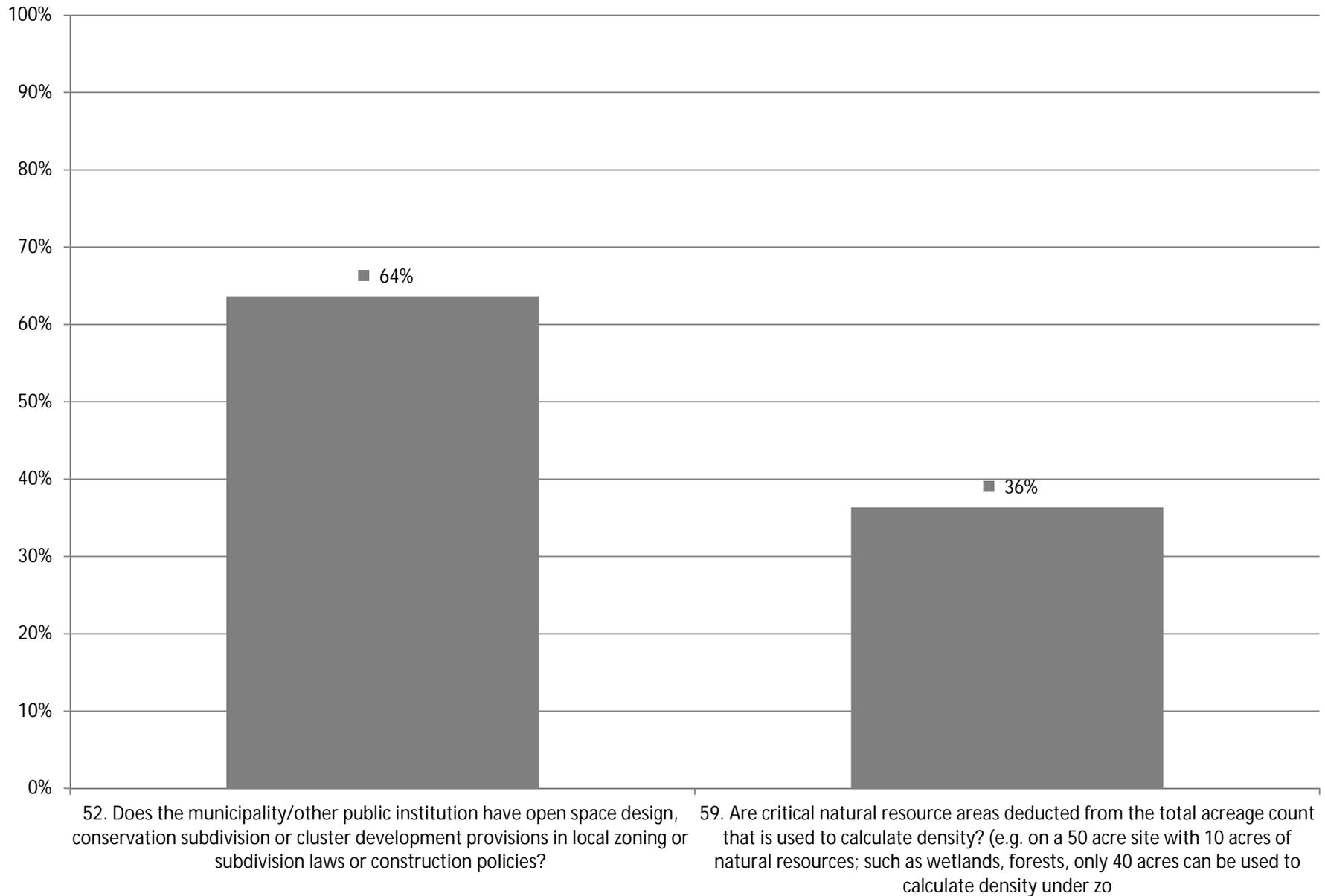
## Stream and Wetland Buffers



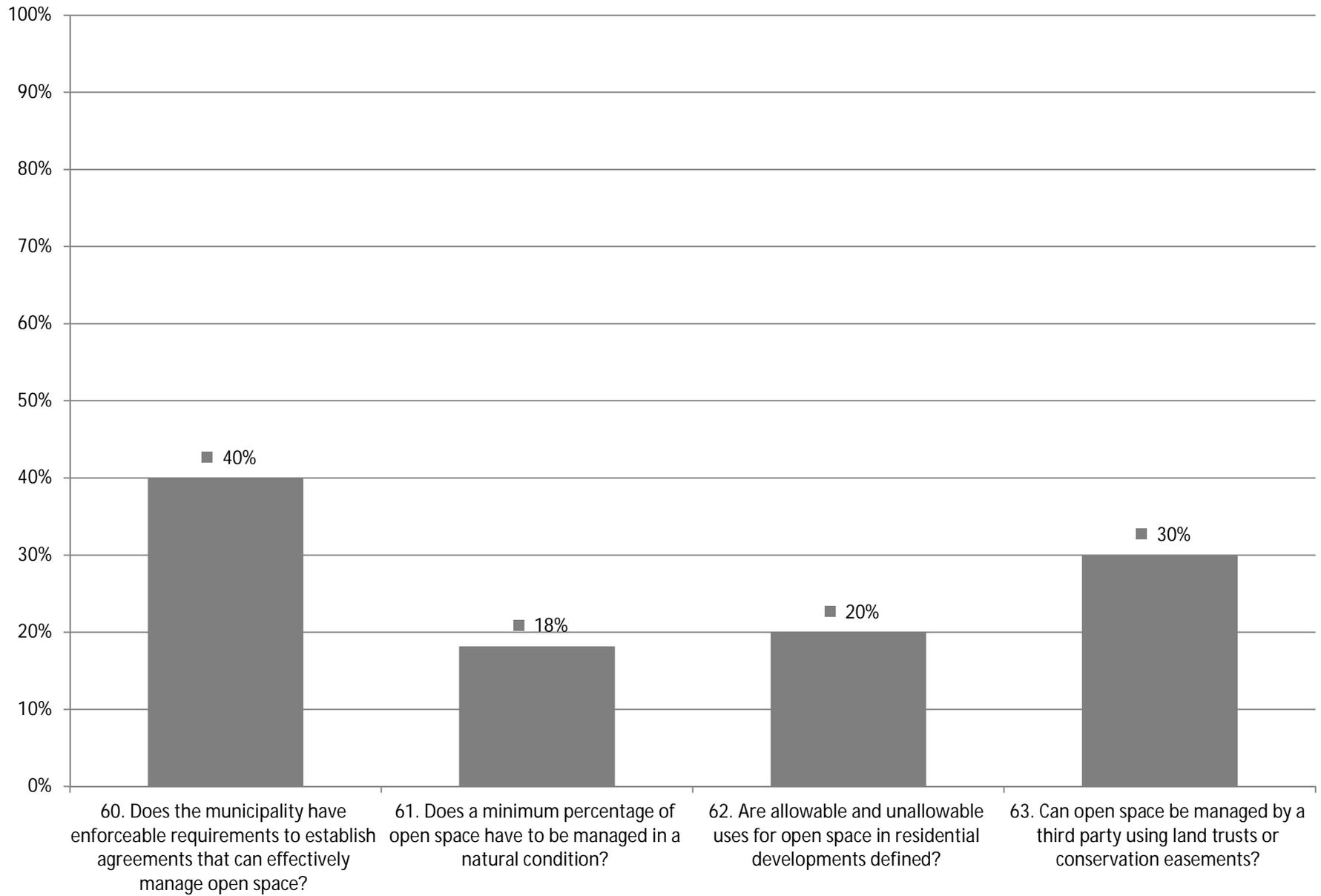
## Stream and Wetland Buffer Uses and Enforcement



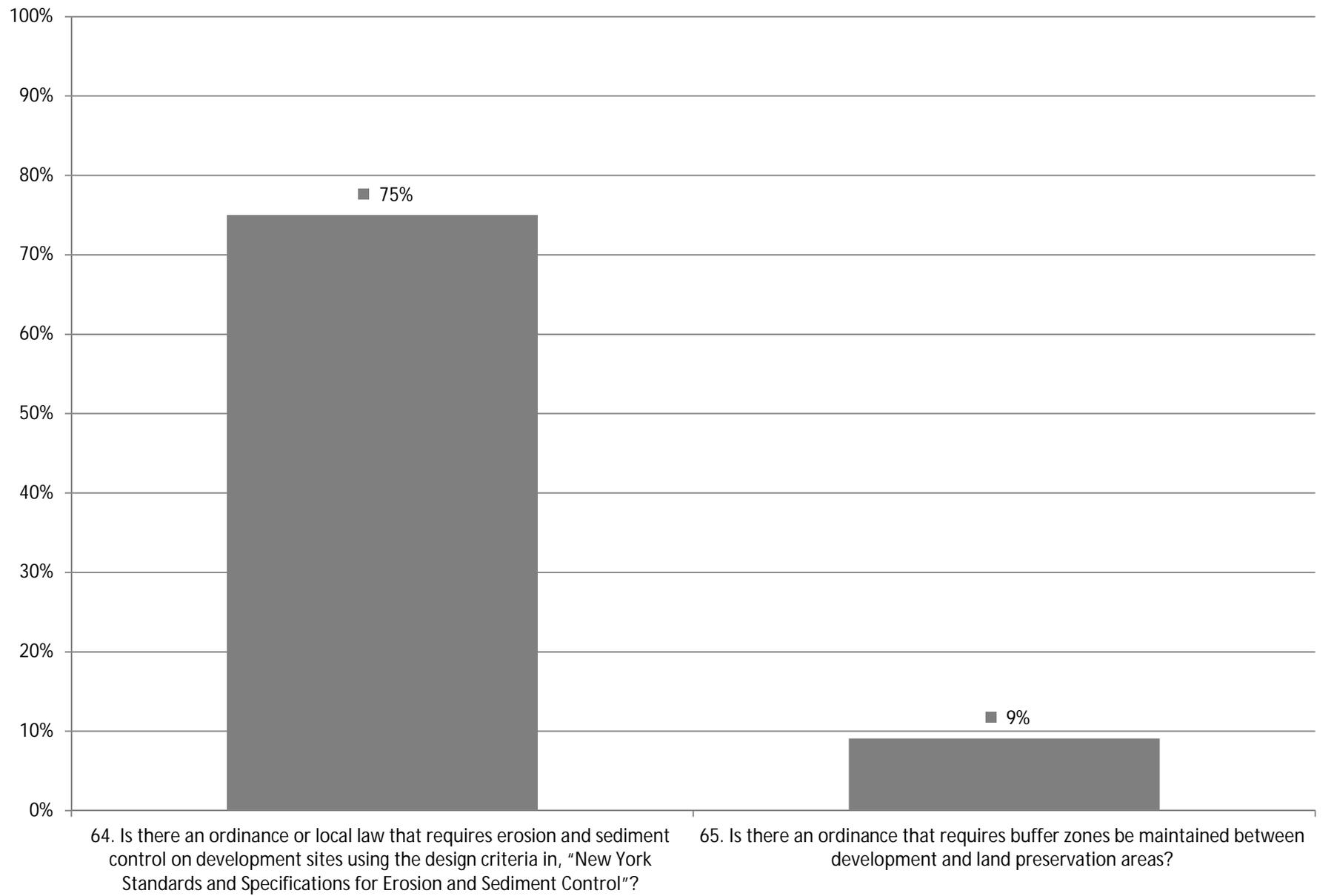
## Open Space and Flexible Design



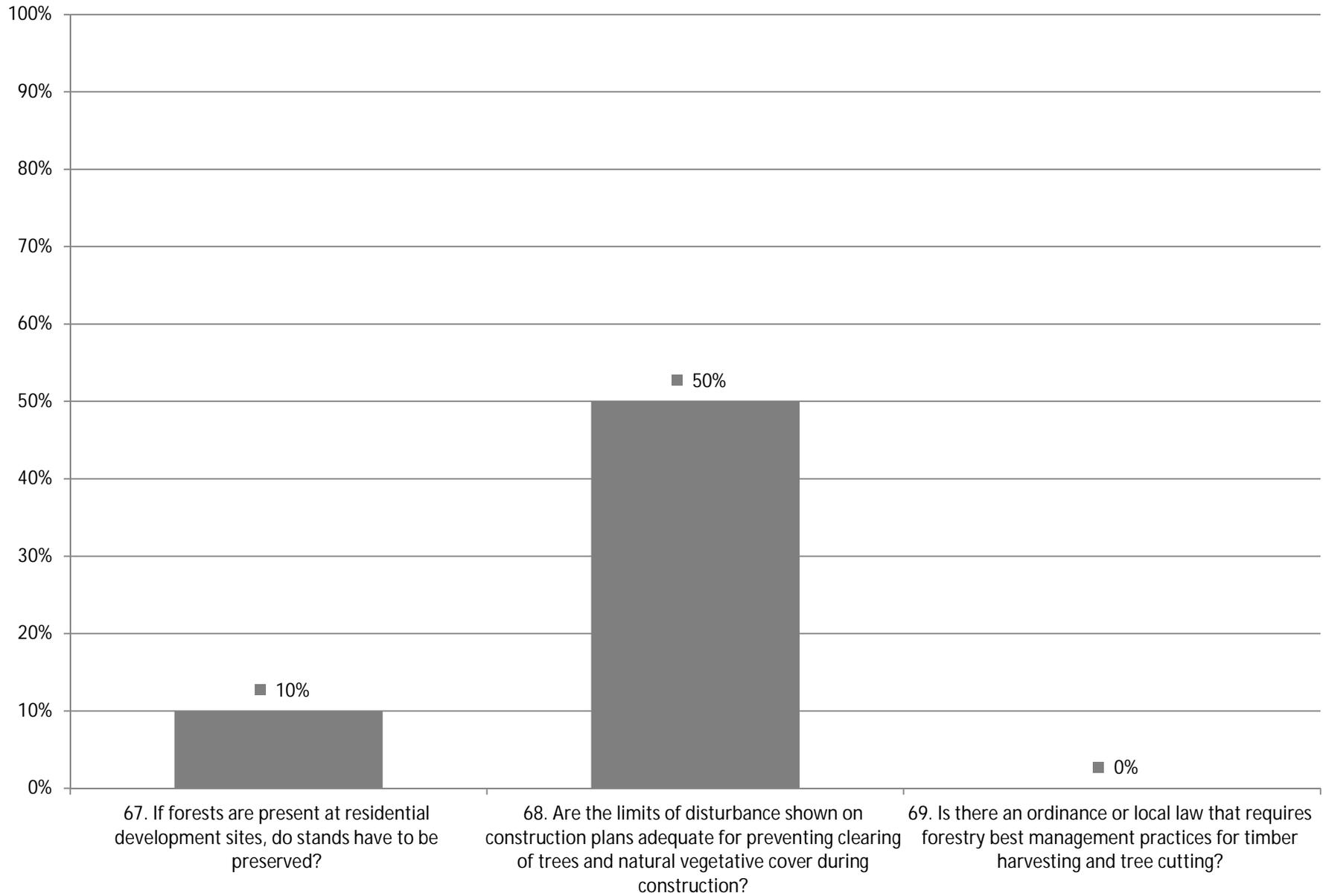
# Open Space Management



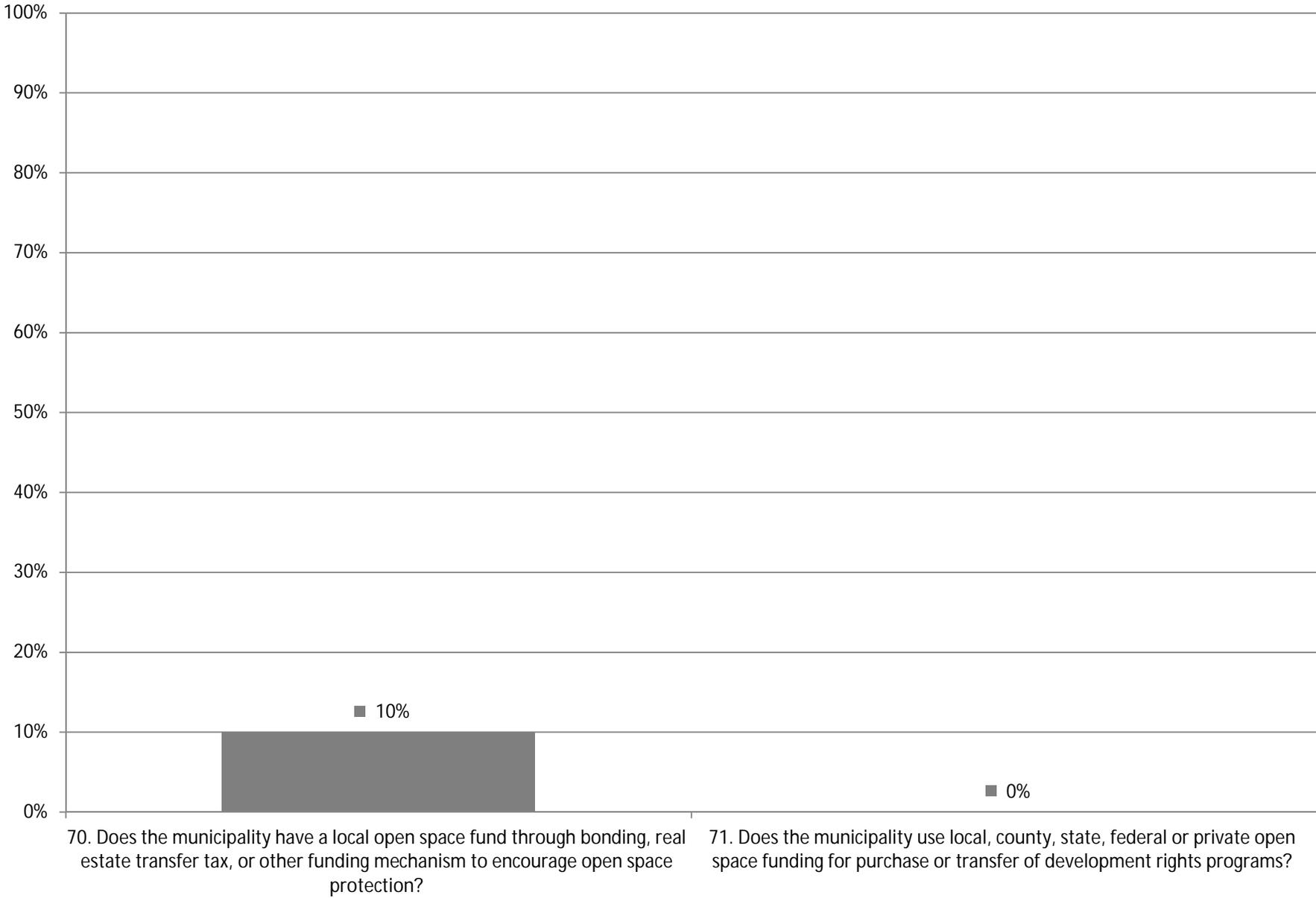
## Clearing and Grading



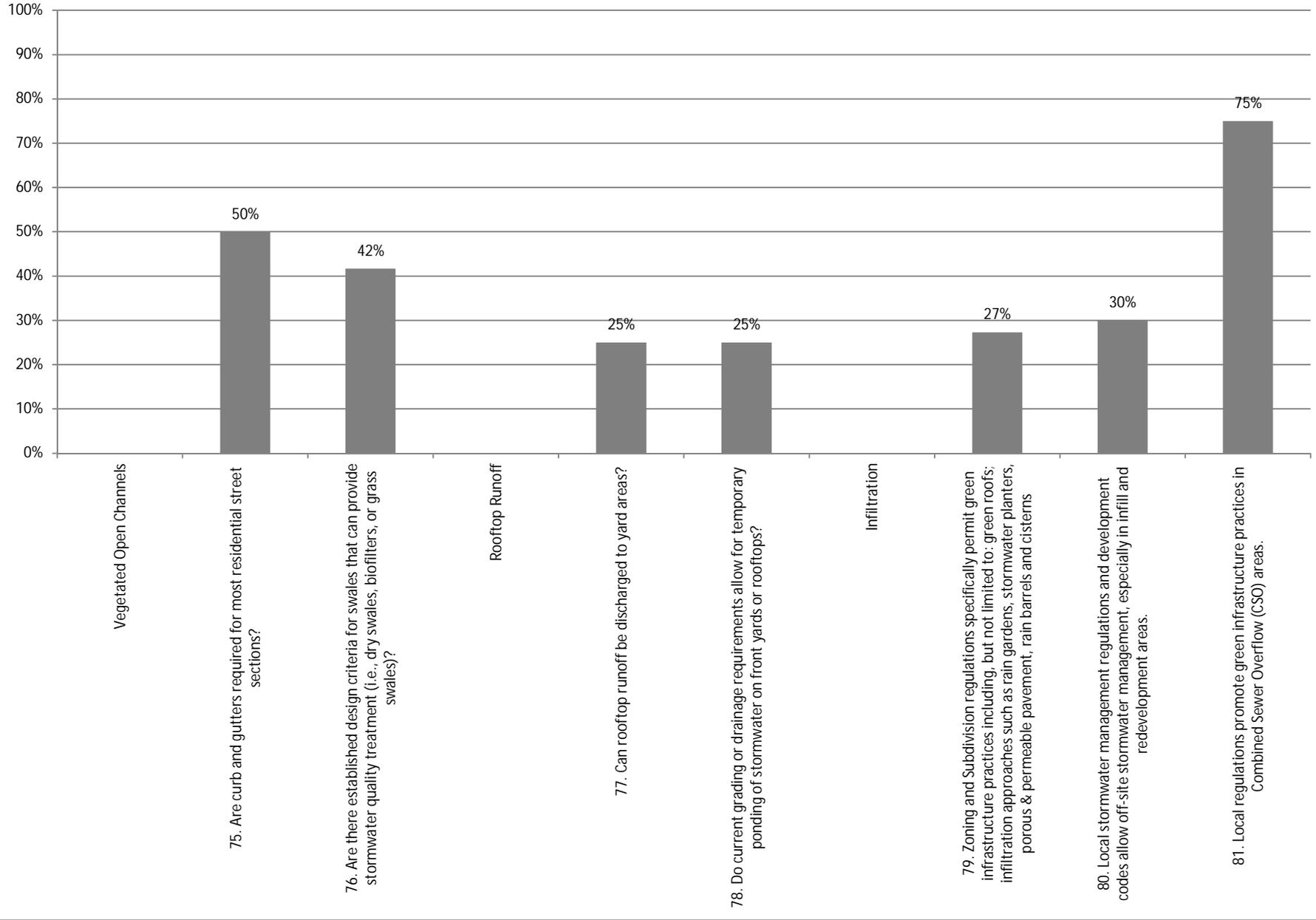
# Tree and Forest Conservation



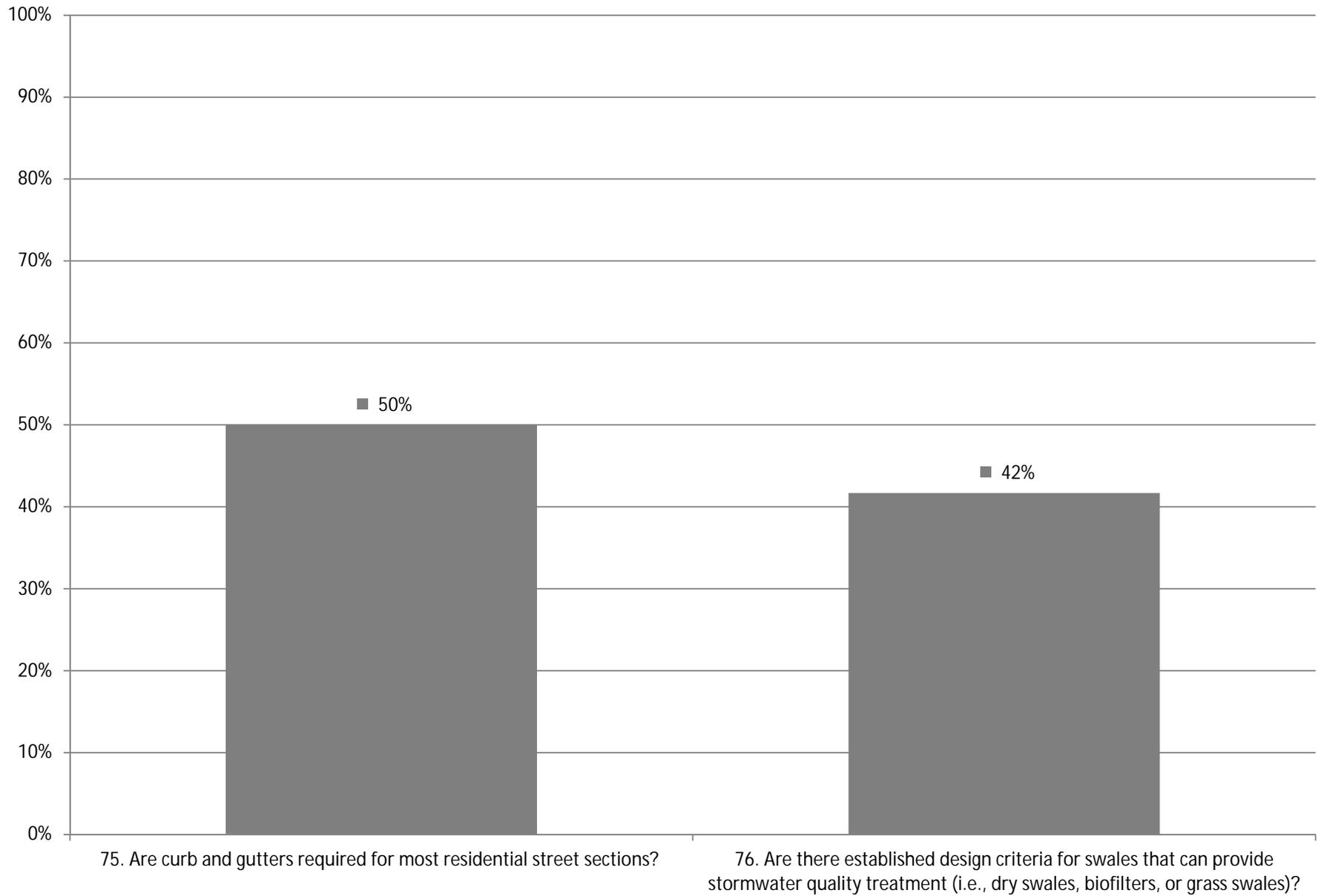
# Conservation Incentives-financial



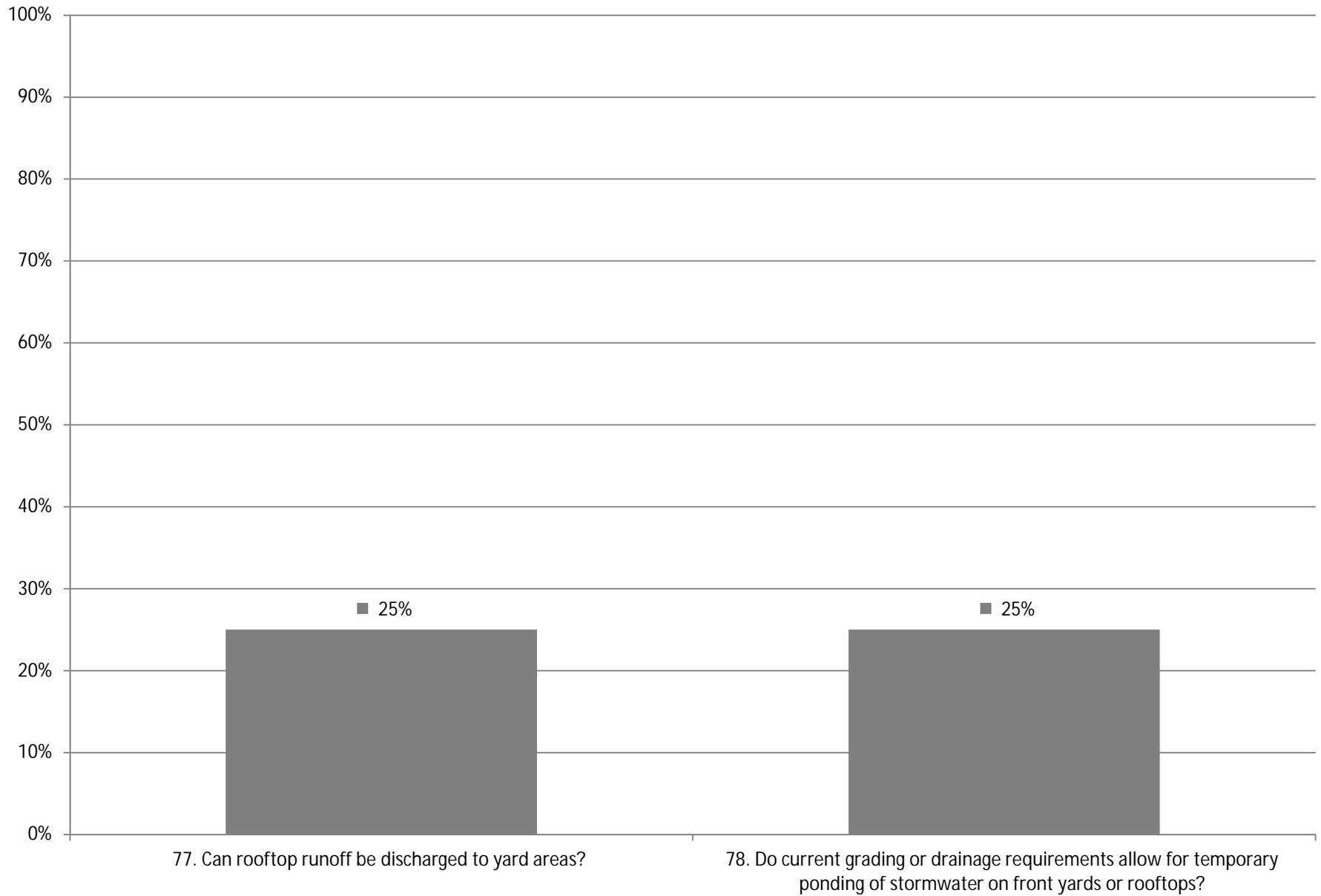
### Category III: Design Elements for Stormwater Management



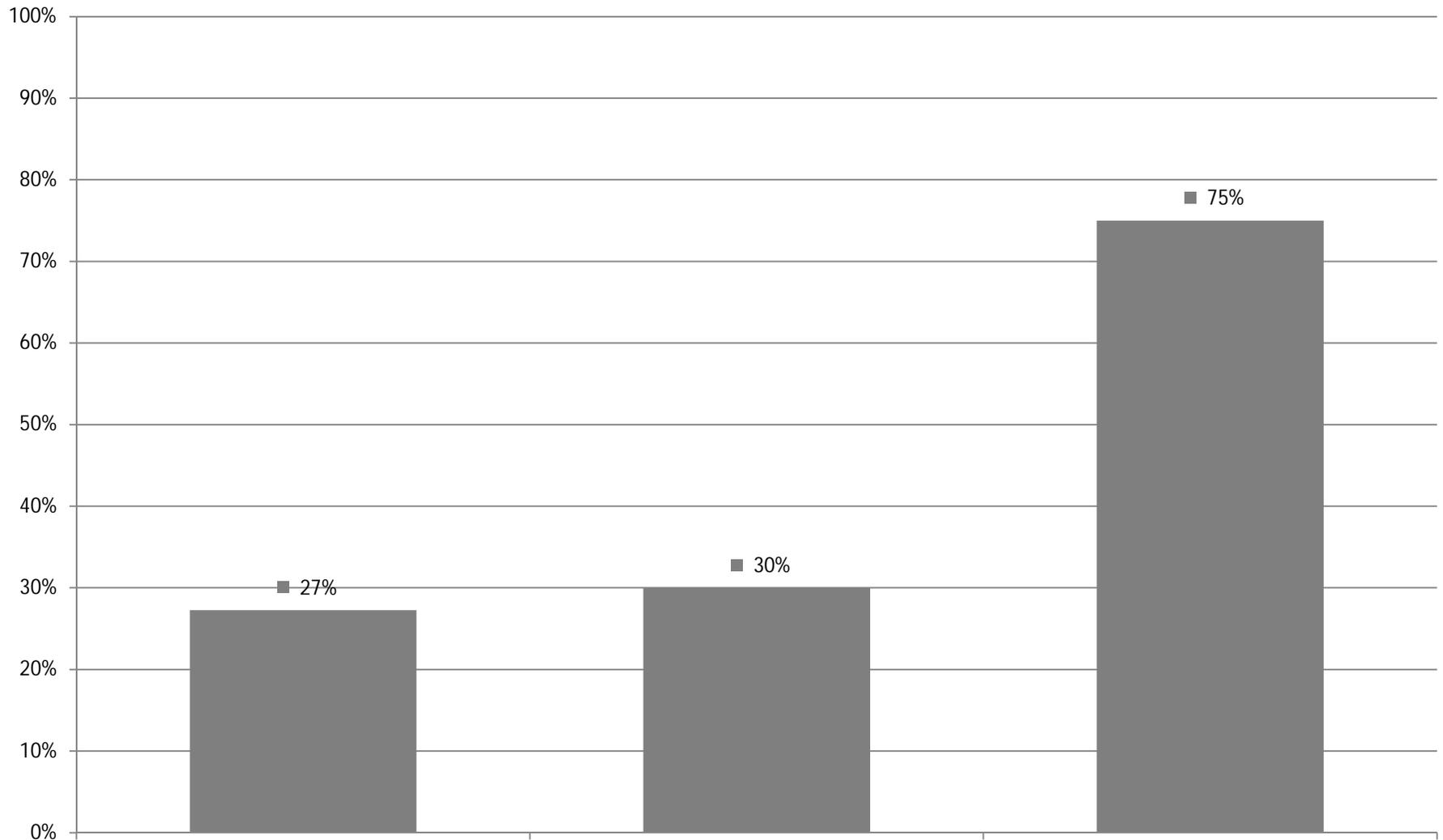
# Vegetated Open Channels



# Rooftop Runoff



# Infiltration

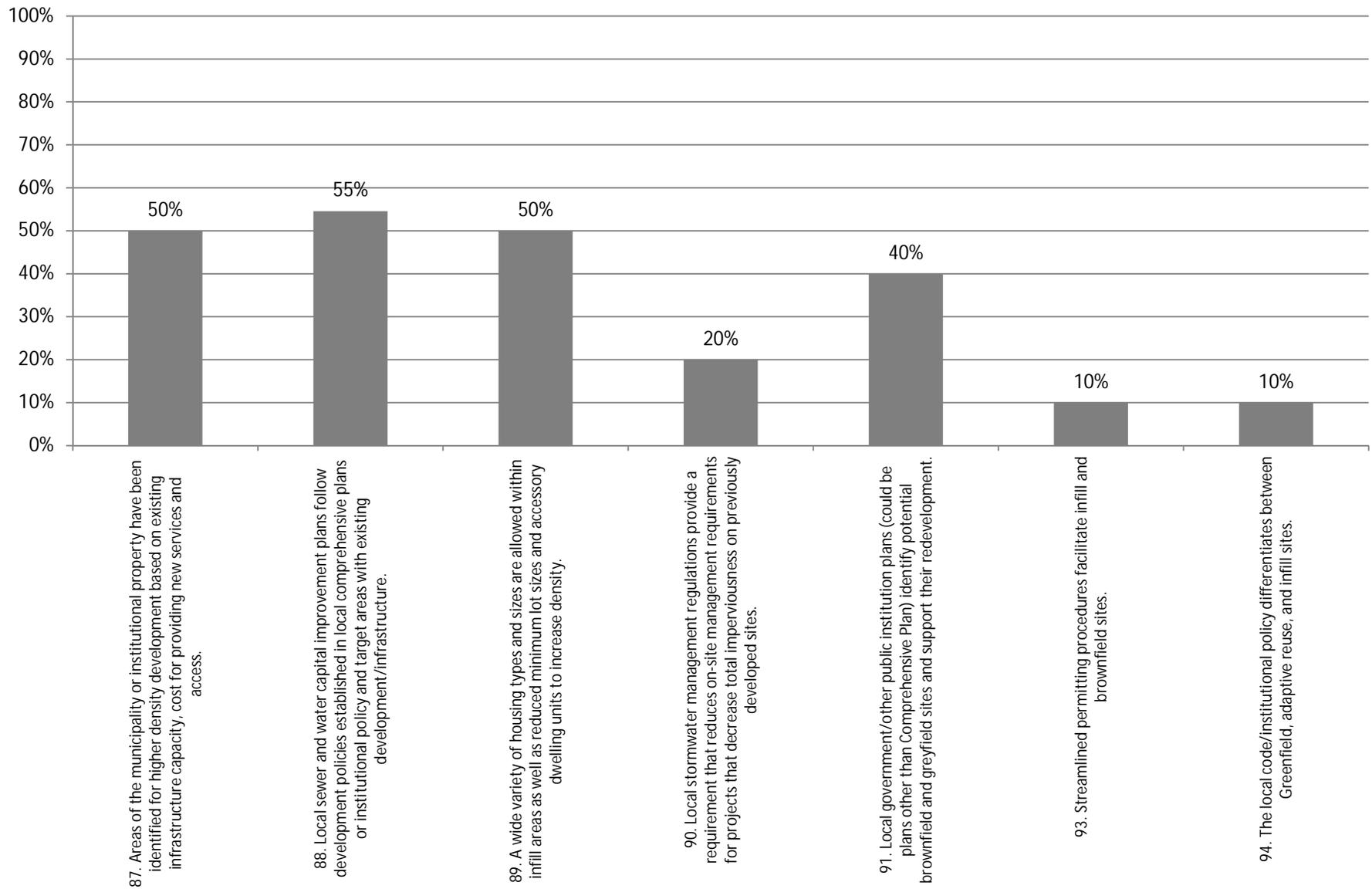


79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns

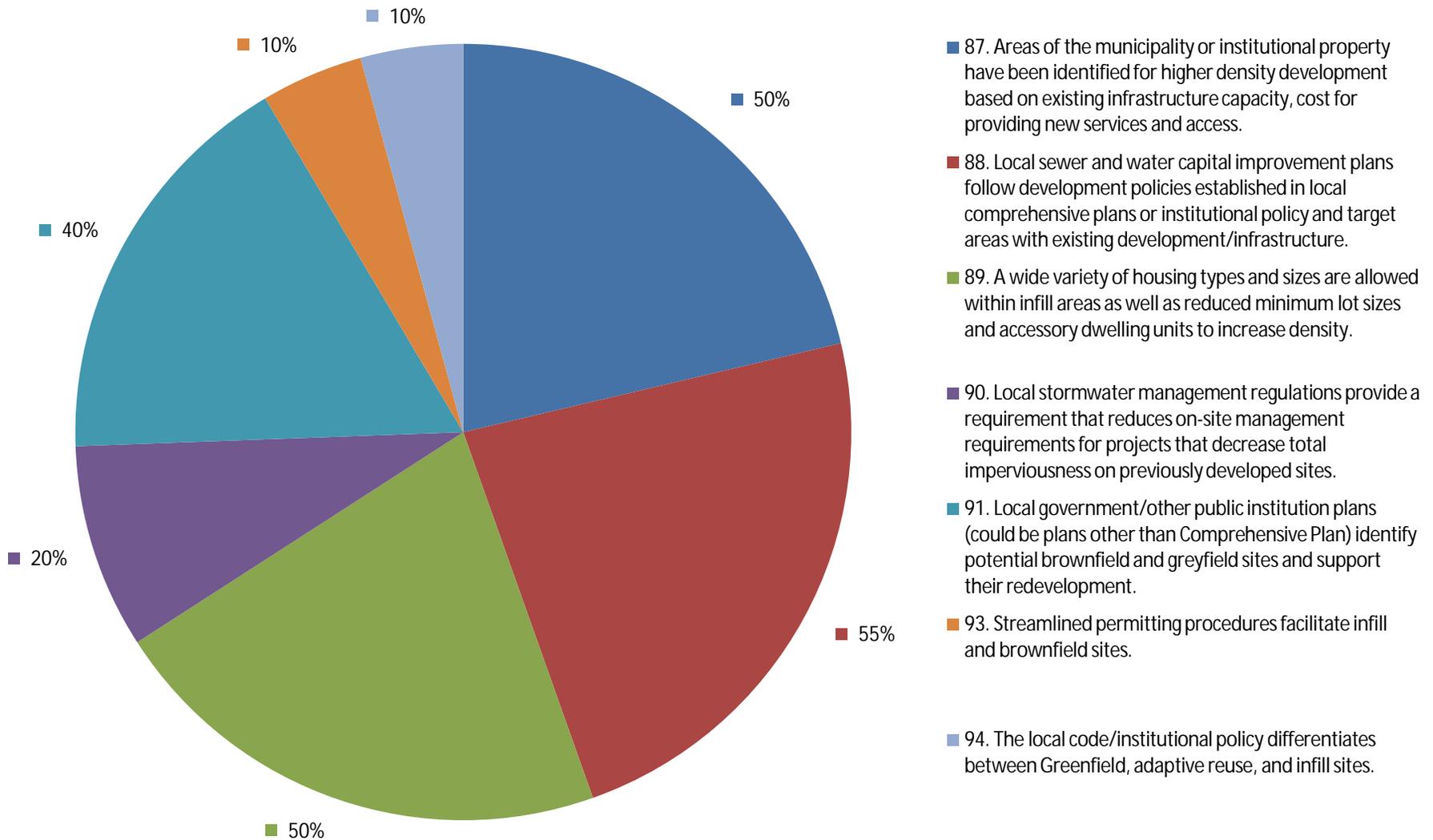
80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.

81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.

## Category IV: Promotion of efficient, compact development patterns and infill



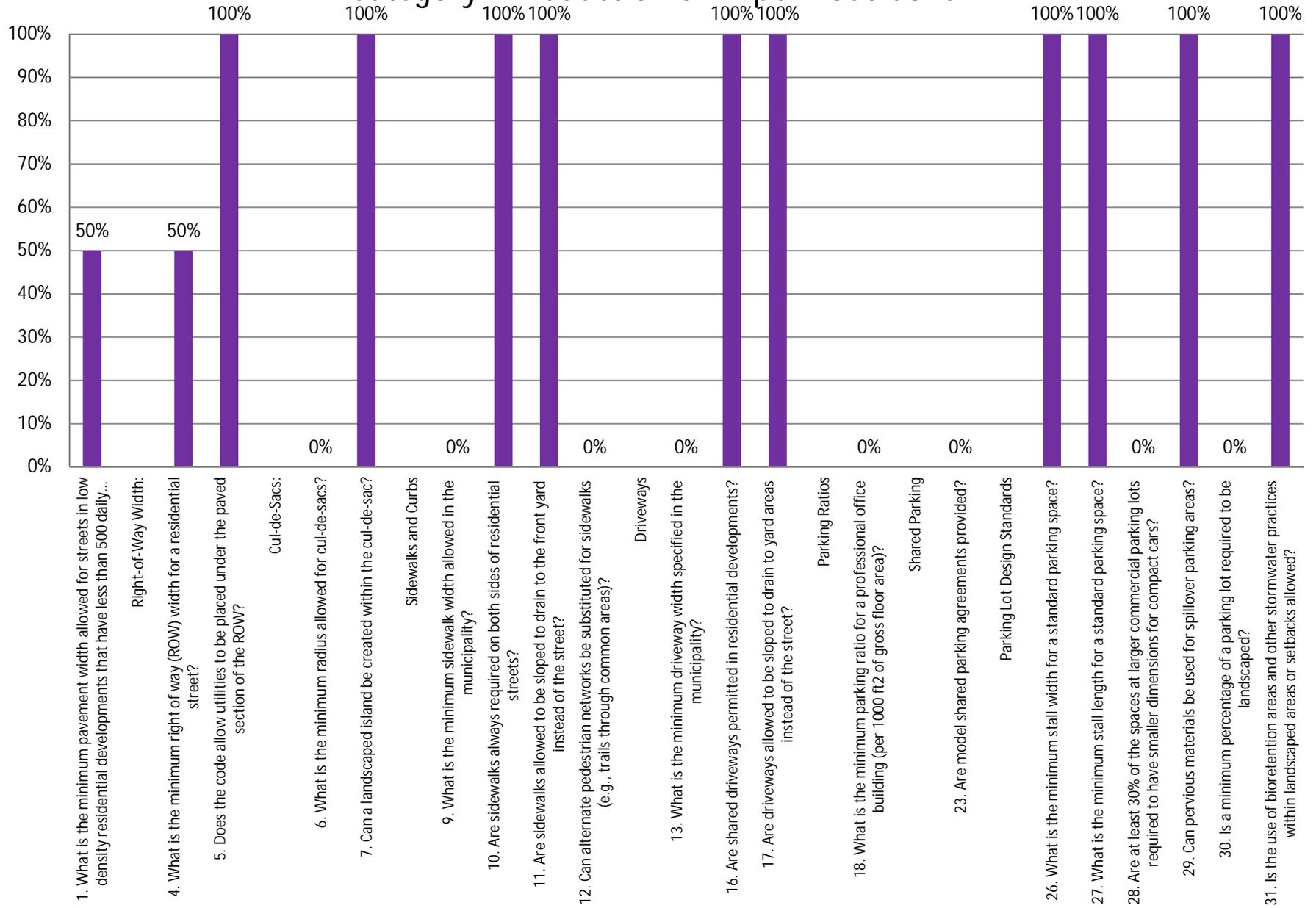
## Category IV: Promotion of efficient, compact development patterns and infill



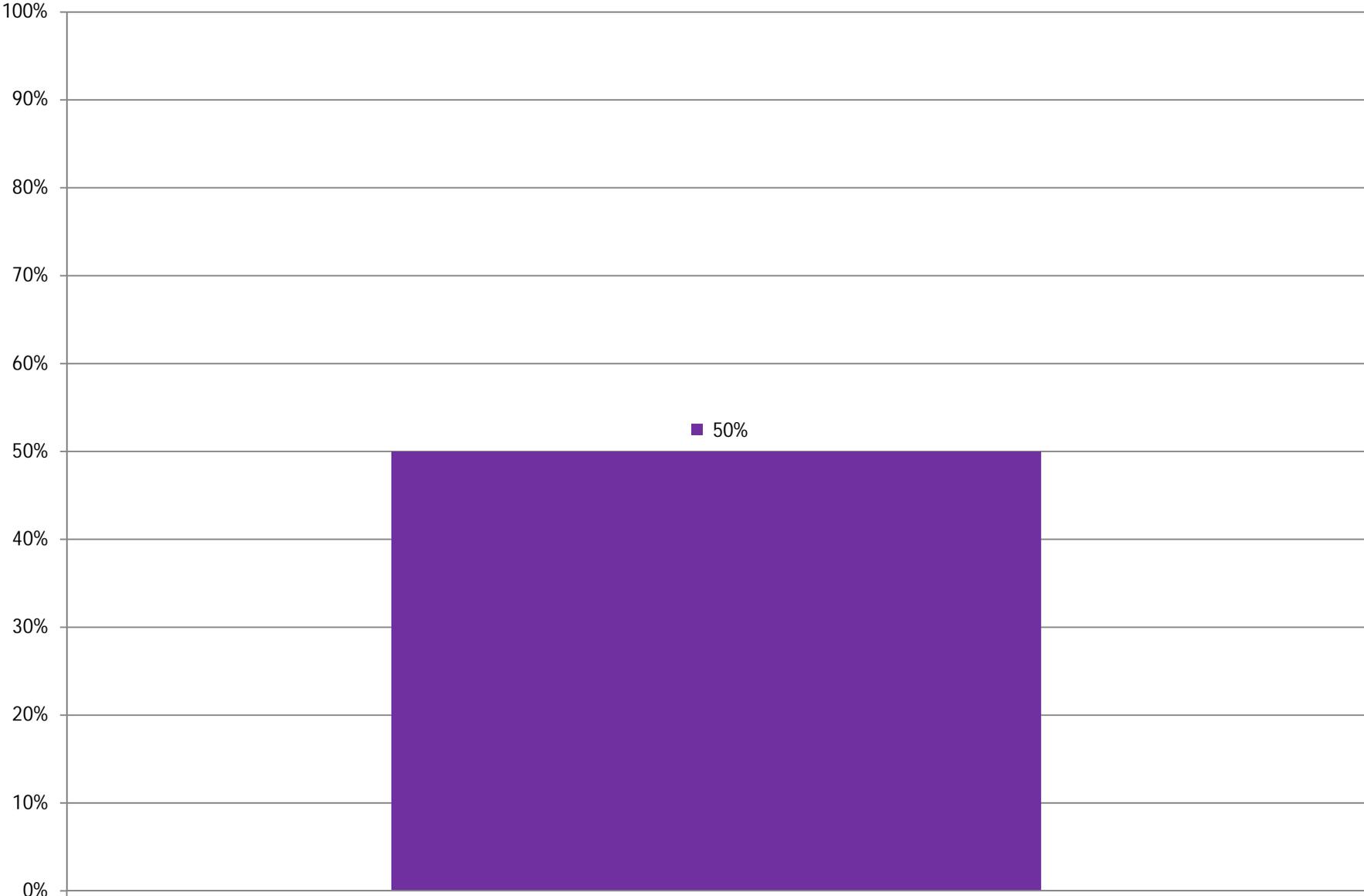
## **Appendix F**

### **Non-Traditional/Traditional Non-Land Use Gap Analysis**

## Category I: Reduction of Impervious Cover

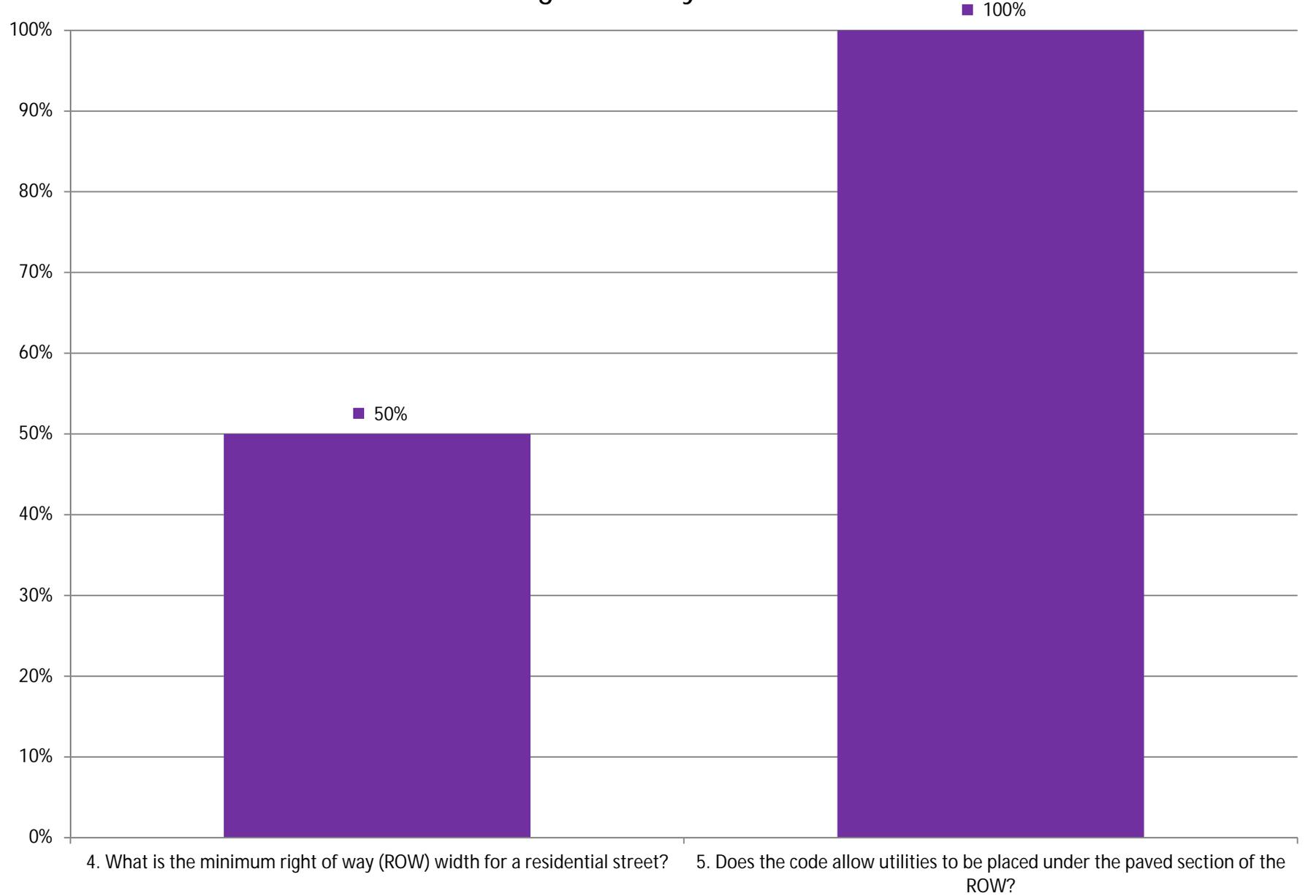


# Street width and length:

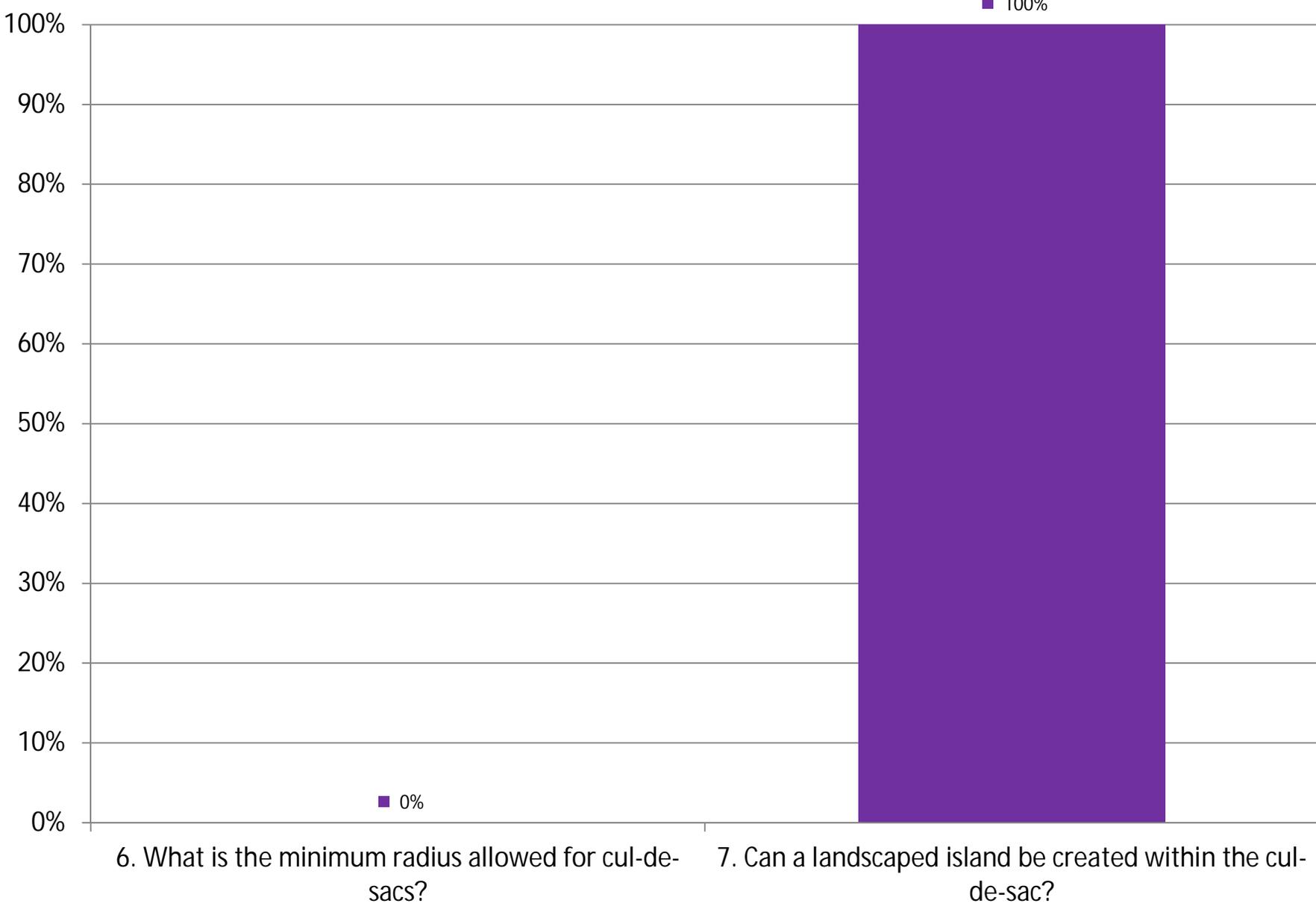


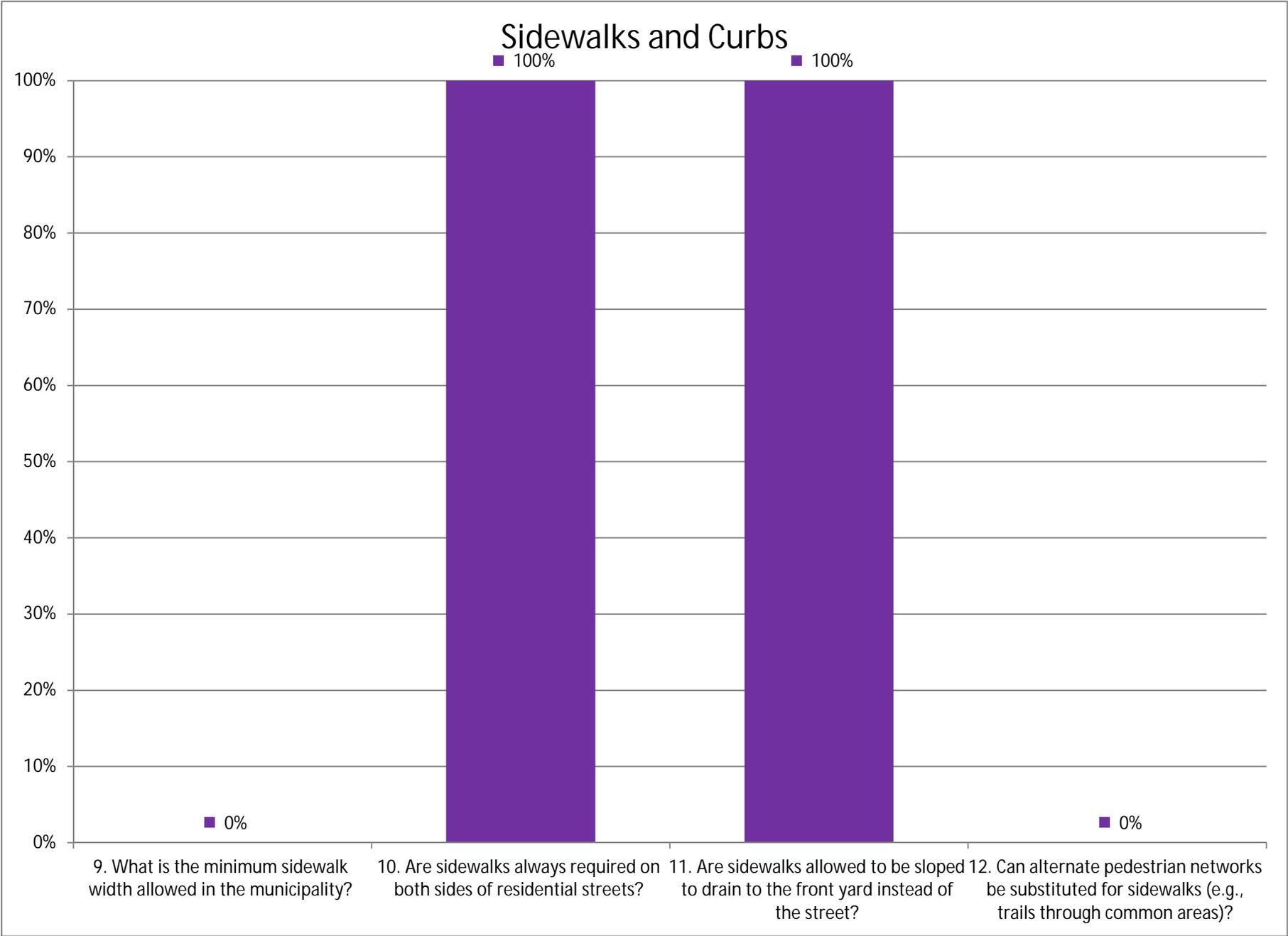
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)?

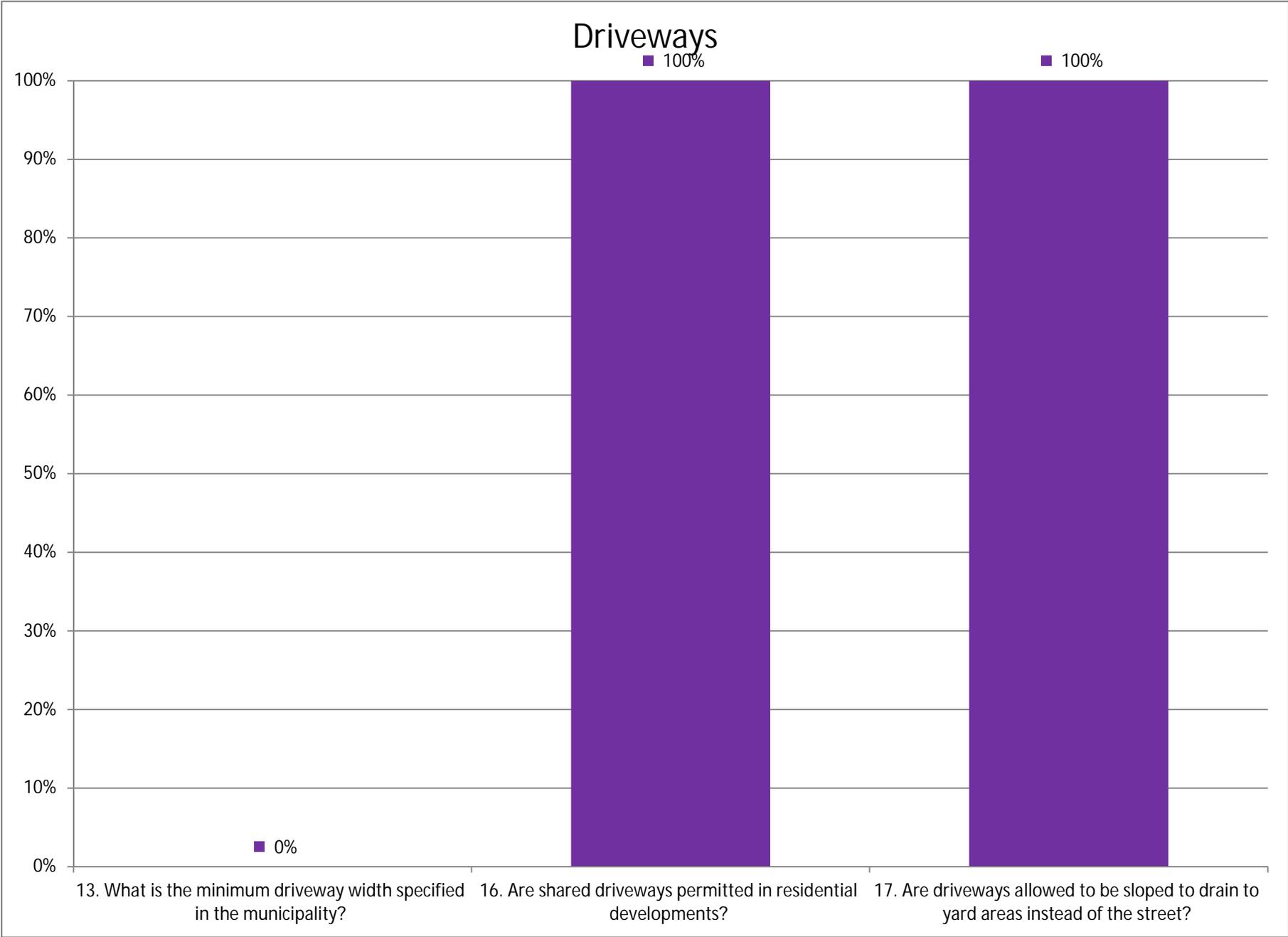
## Right-of-Way Width:



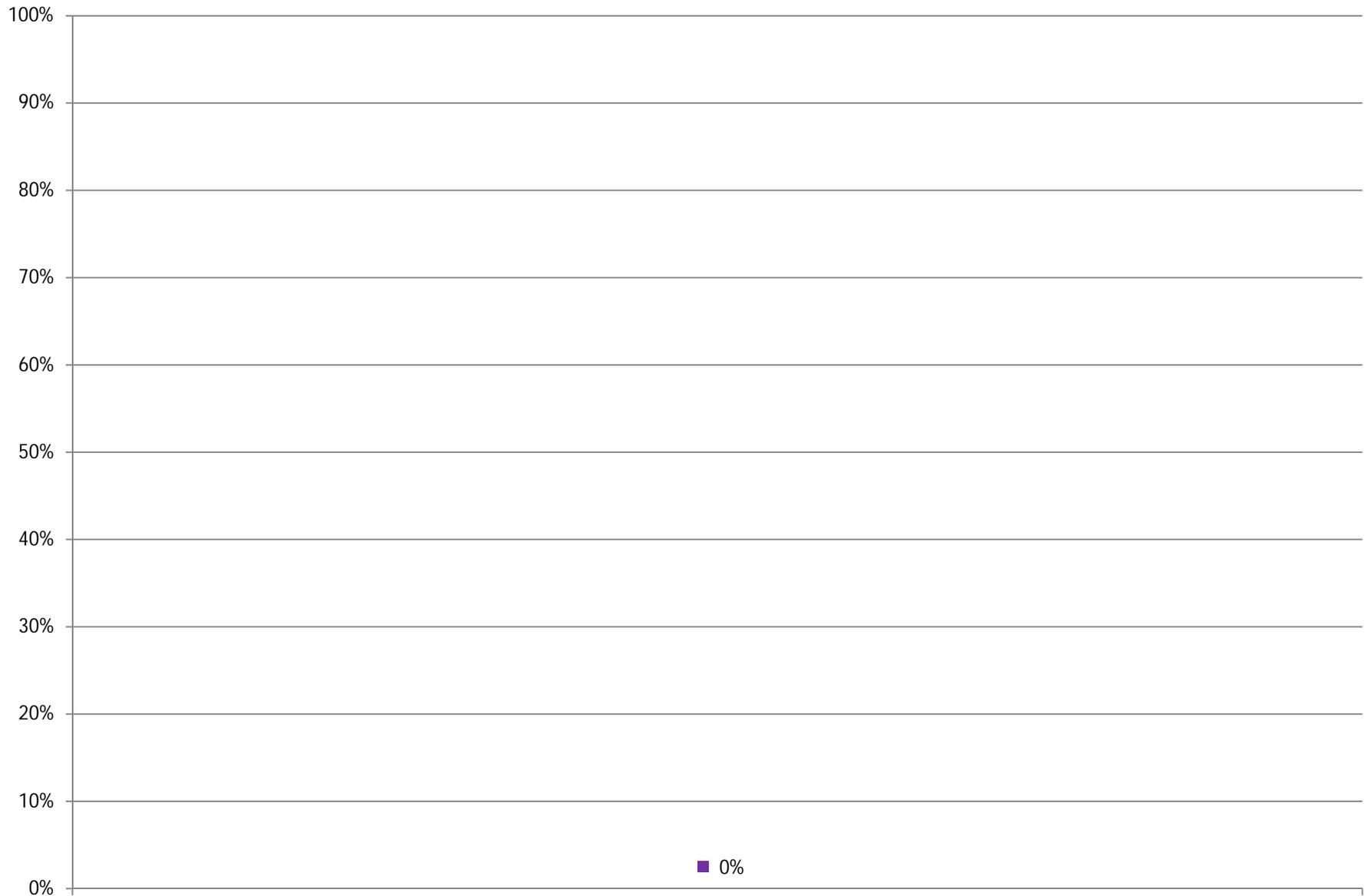
### Cul-de-Sacs:





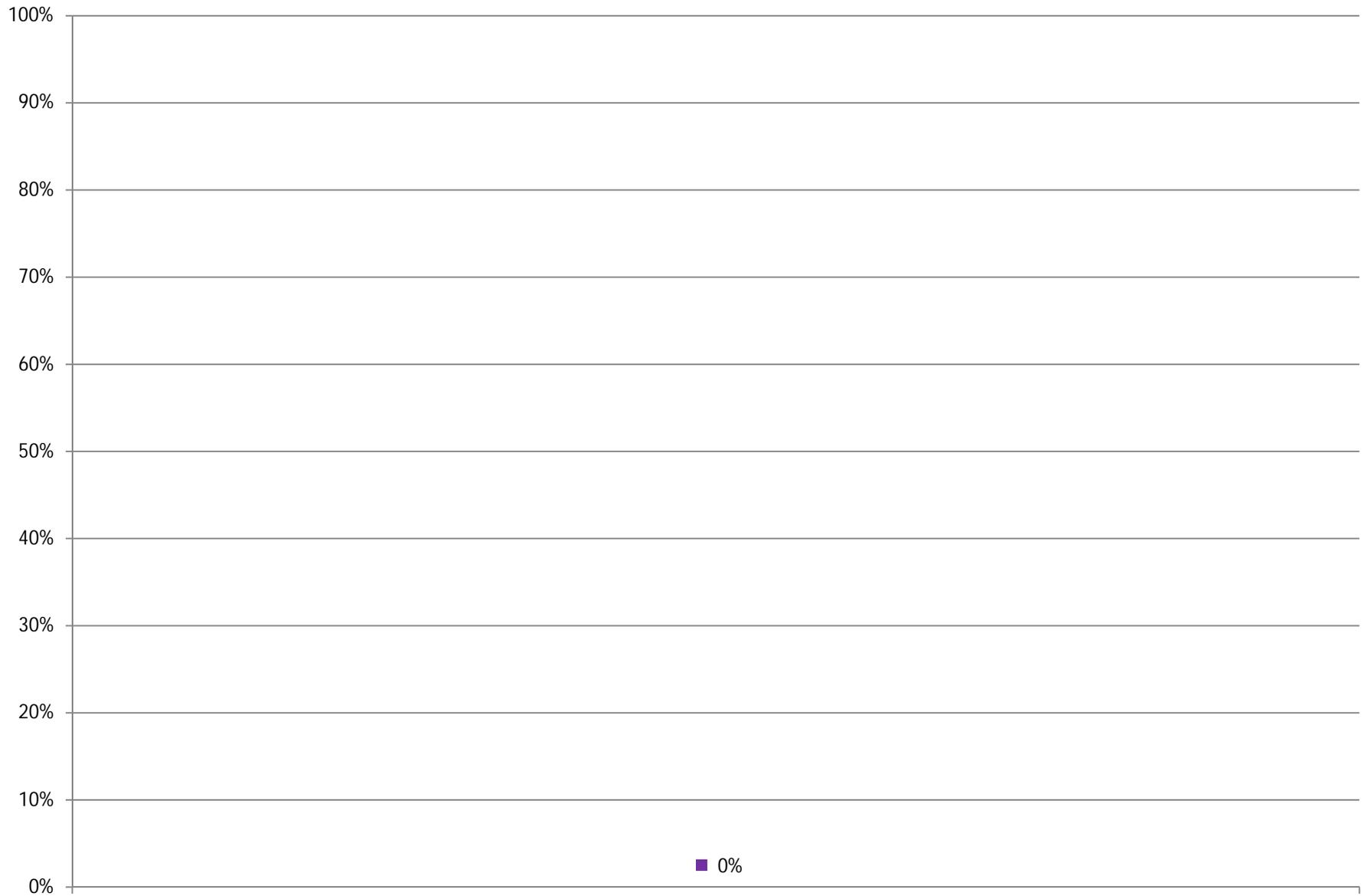


# Parking Ratios



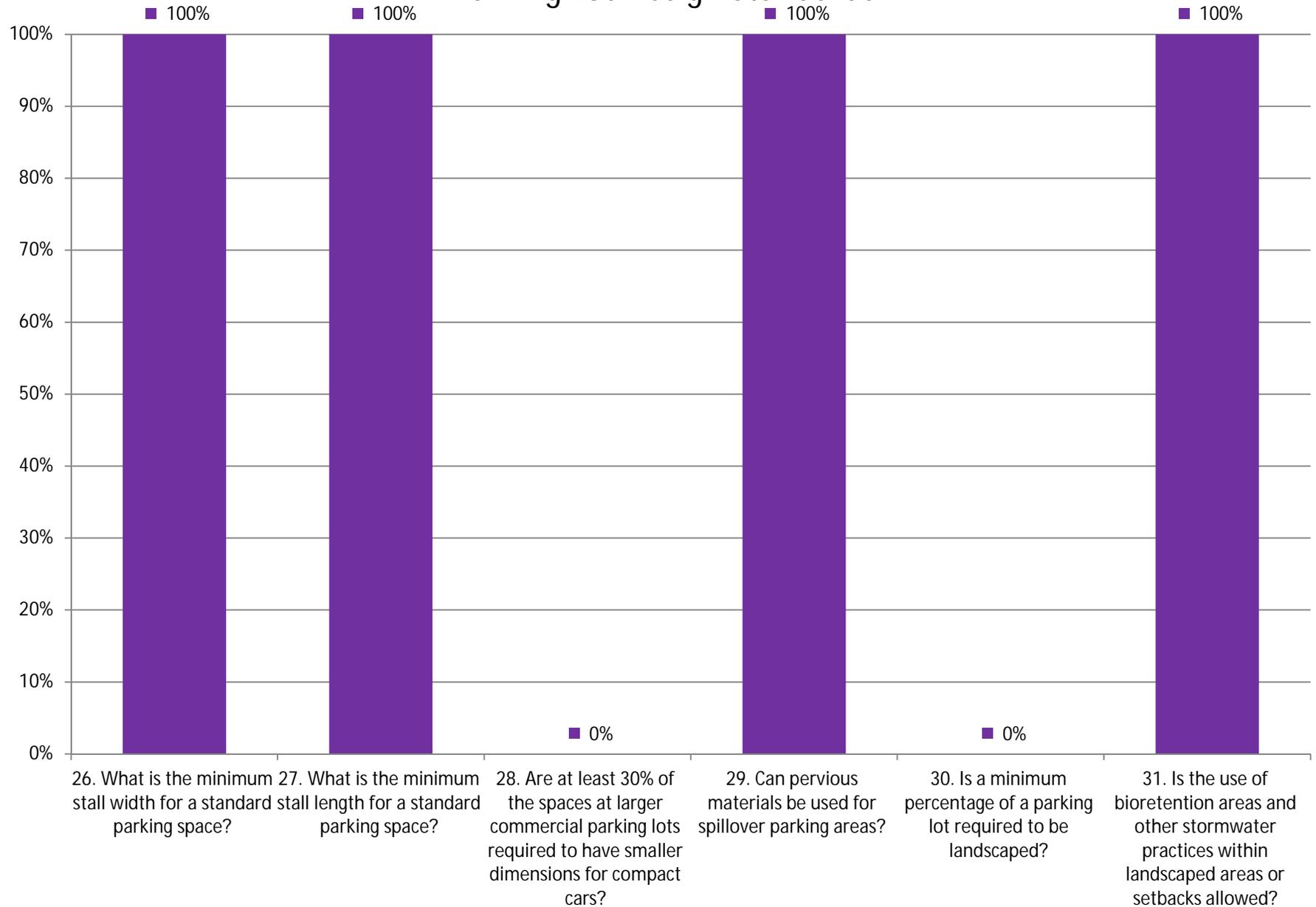
18. What is the minimum parking ratio for a professional office building (per 1000 ft2 of gross floor area)?

# Shared Parking

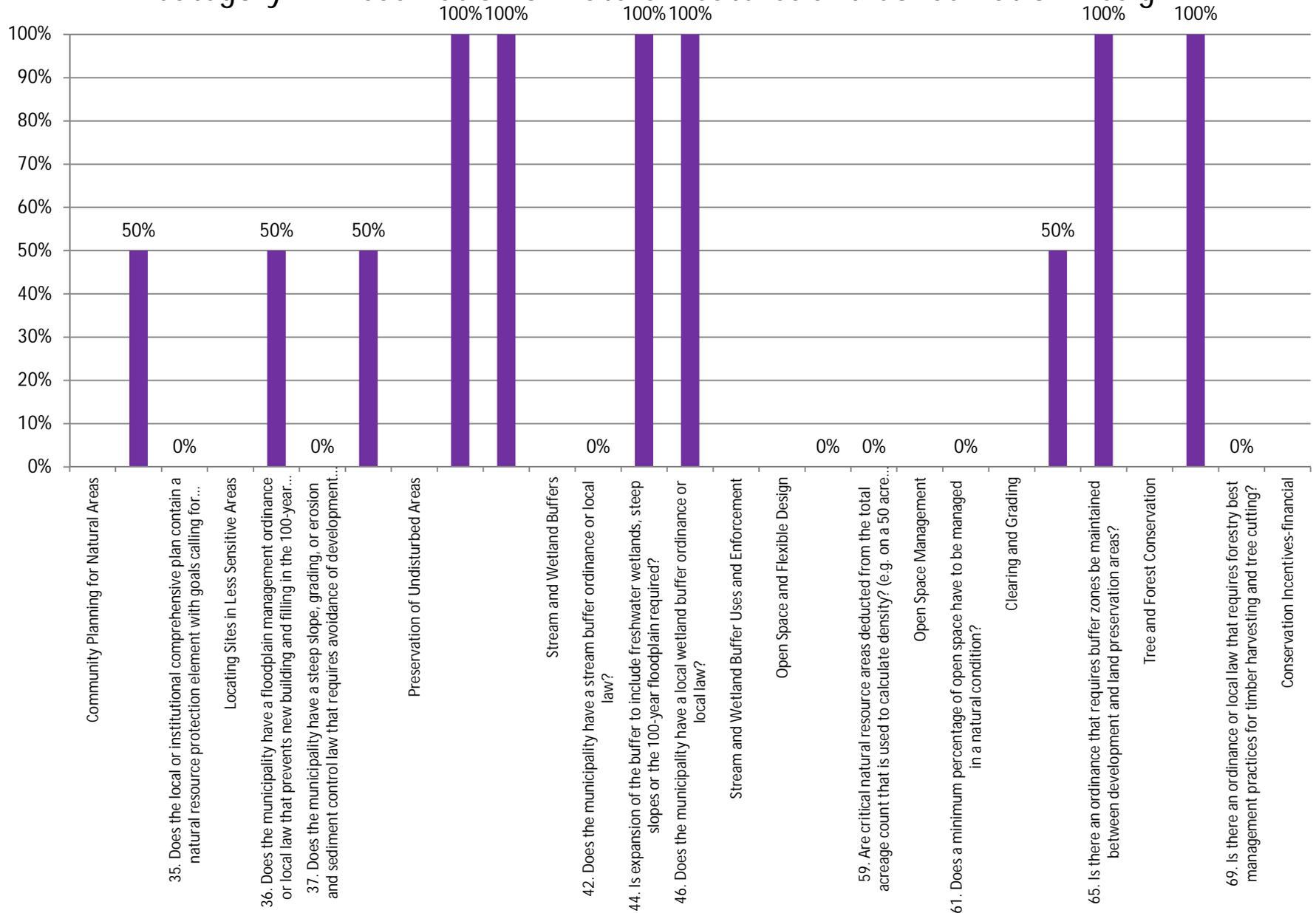


23. Are model shared parking agreements provided?

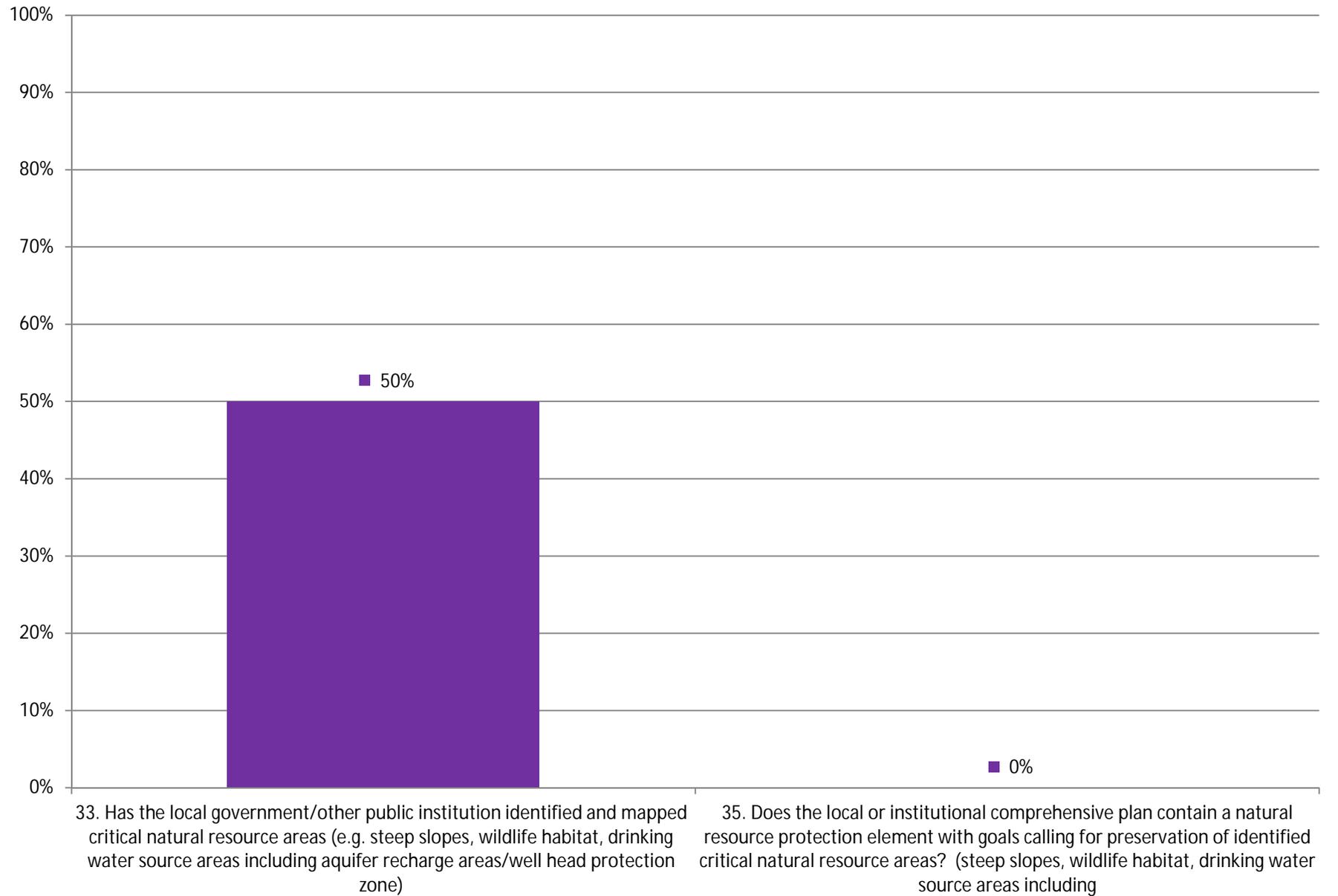
## Parking Lot Design Standards



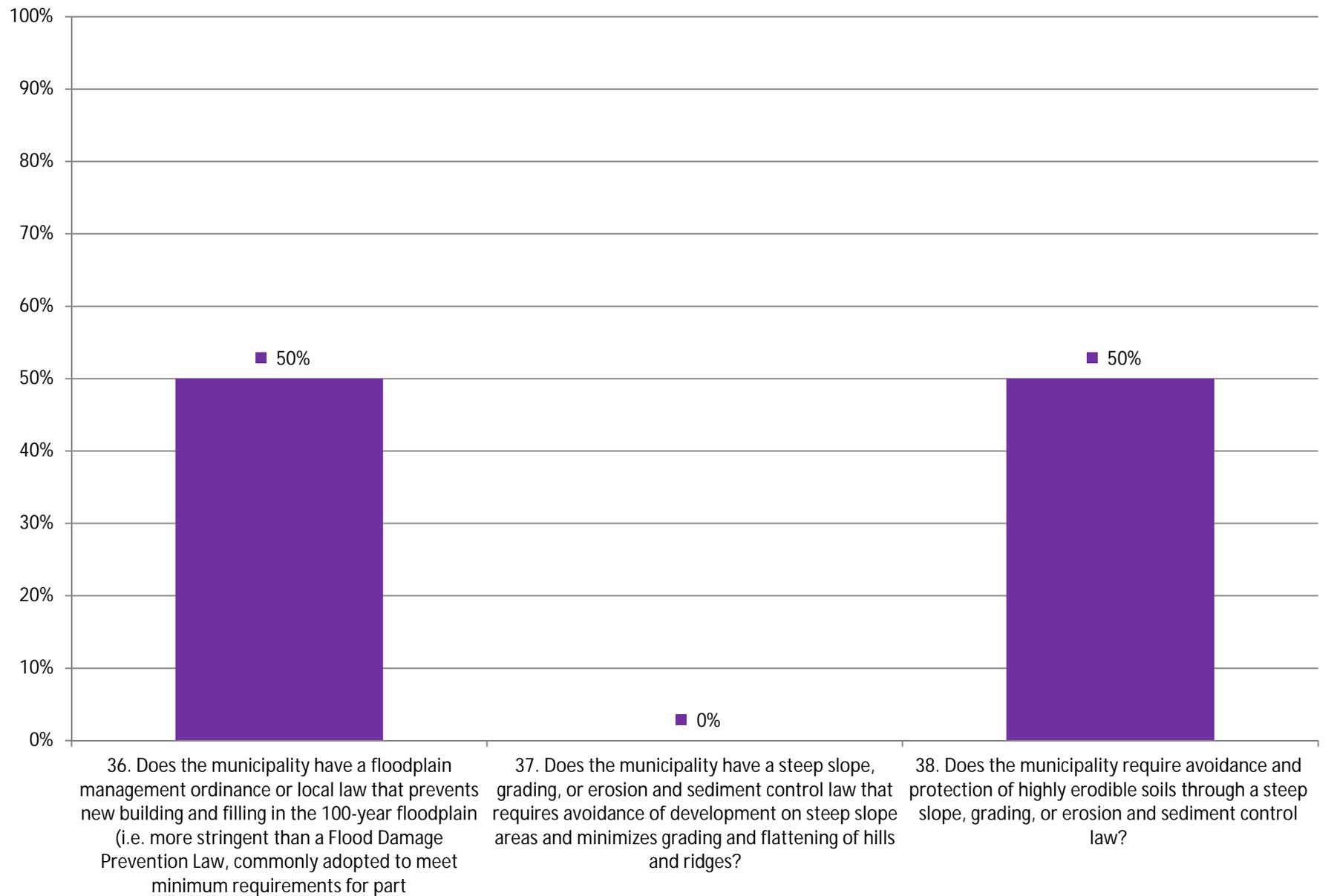
## Category II: Preservation of Natural Features and Conservation Design



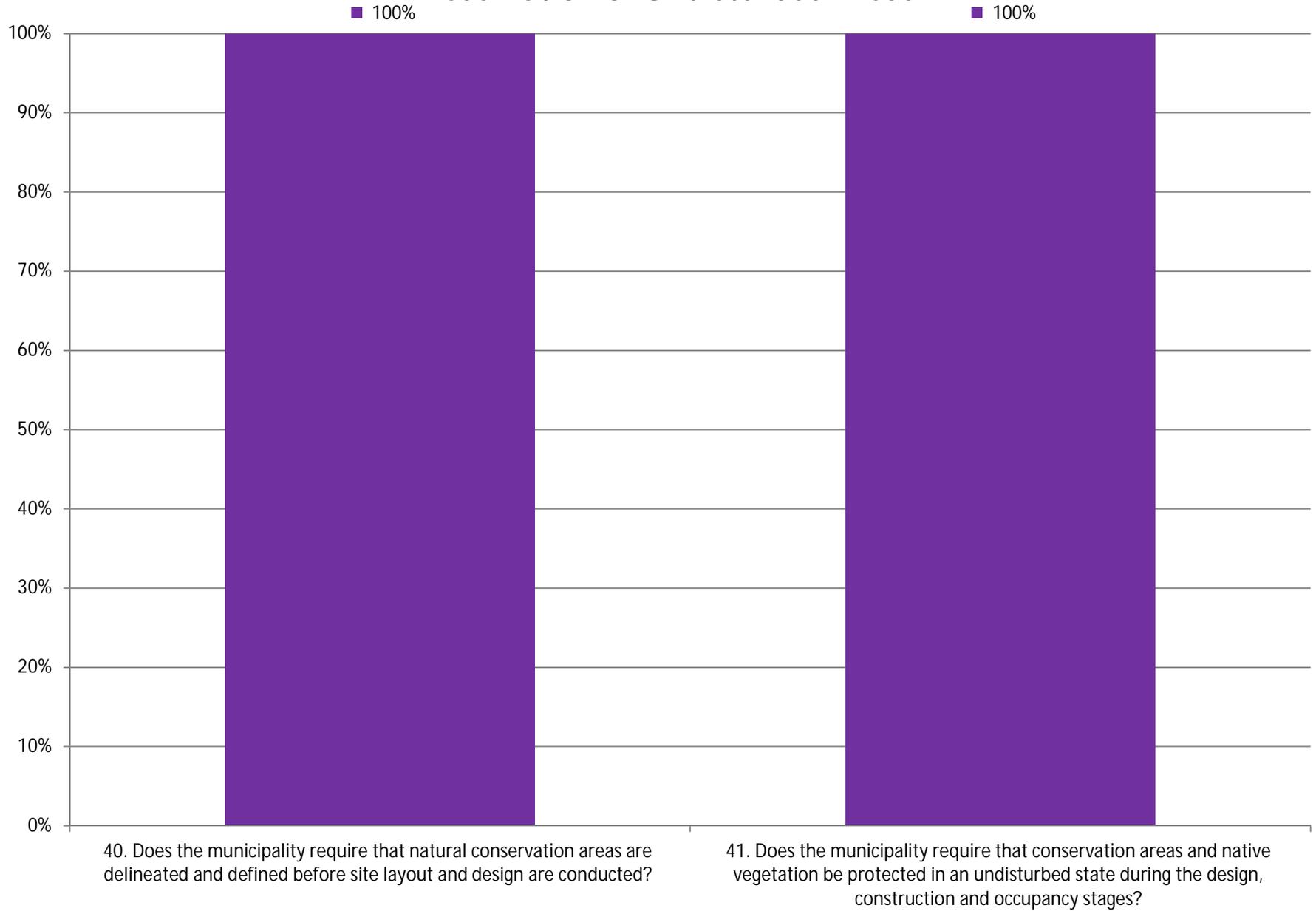
## Community Planning for Natural Areas



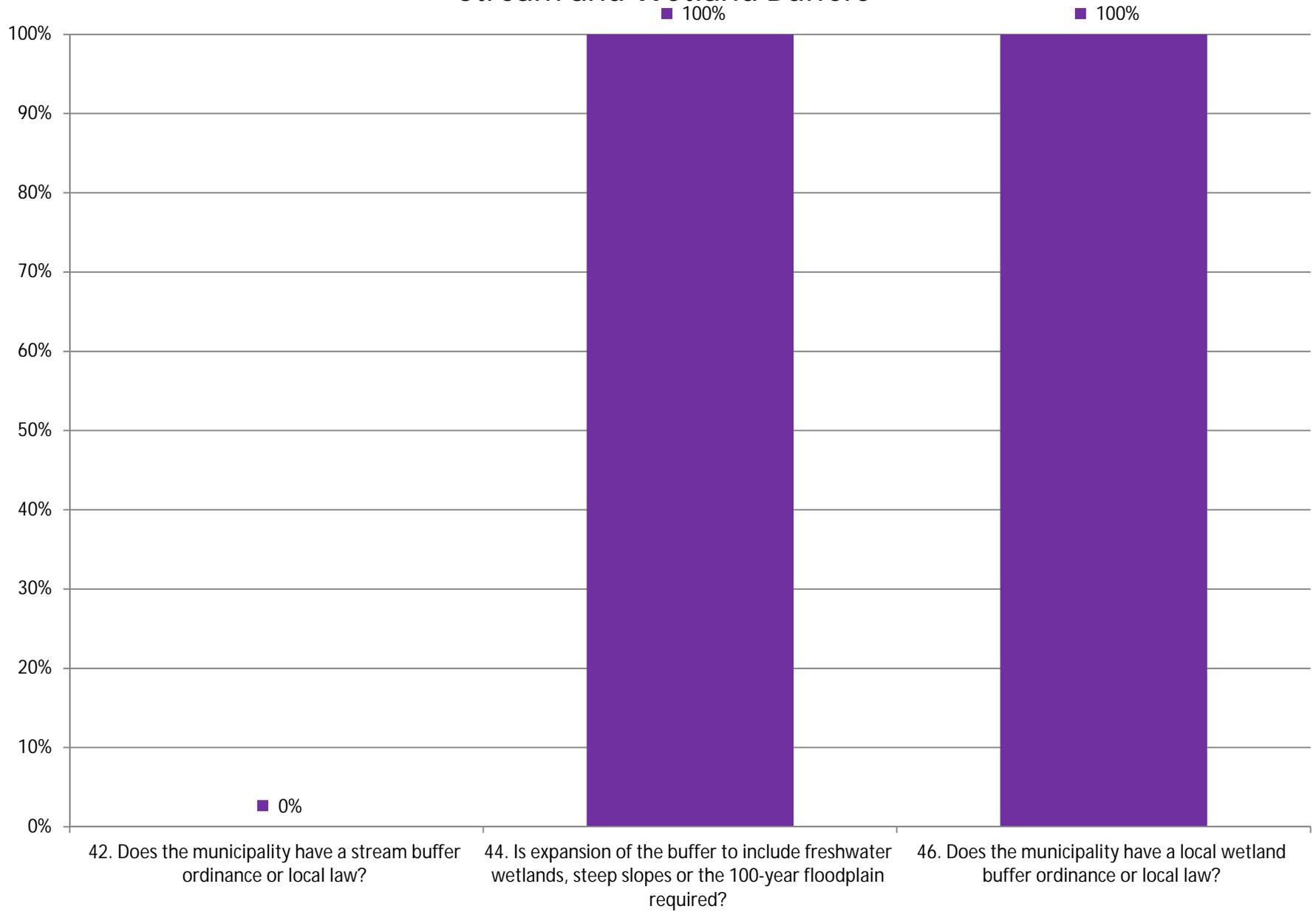
## Locating Sites in Less Sensitive Areas



# Preservation of Undisturbed Areas

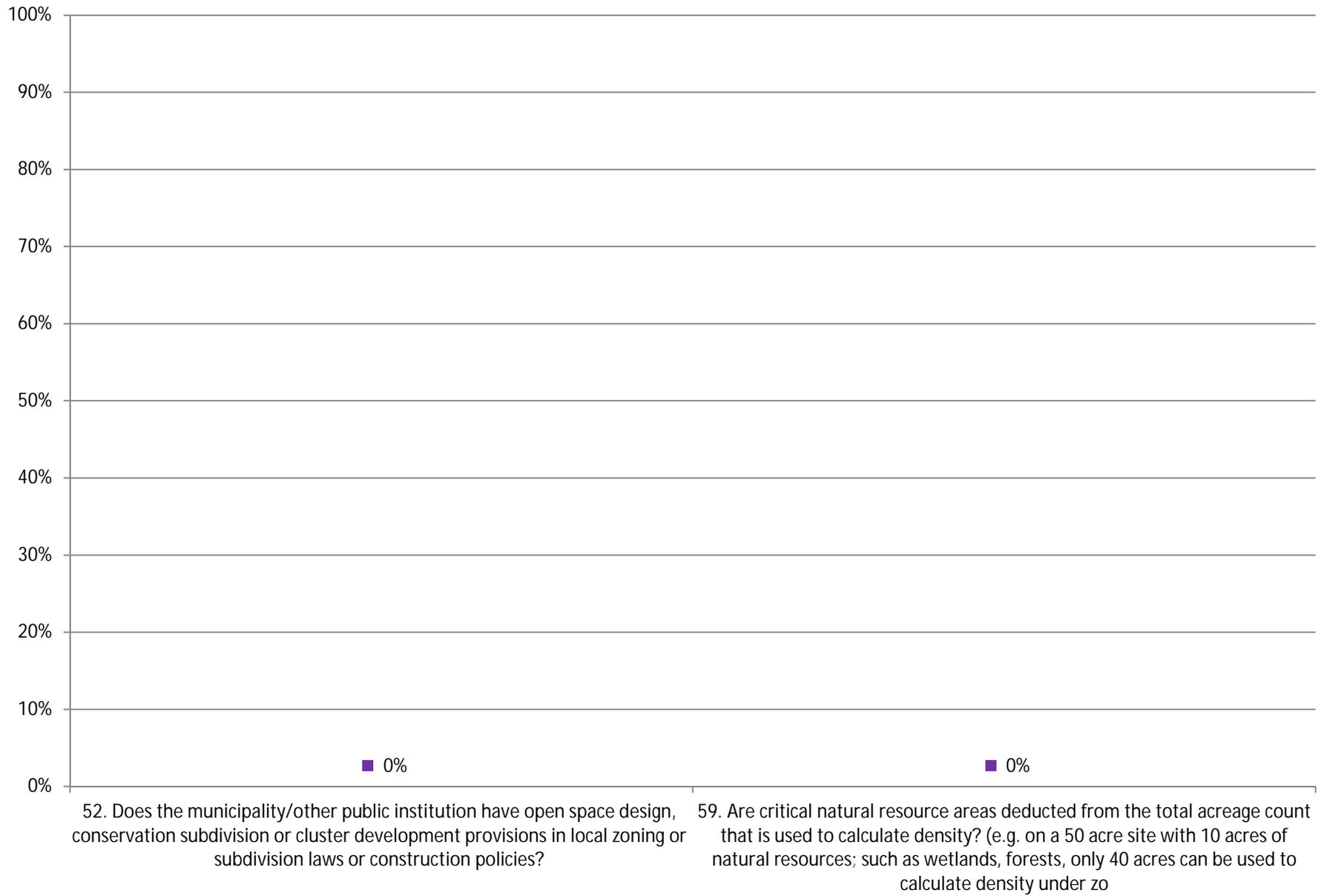


# Stream and Wetland Buffers

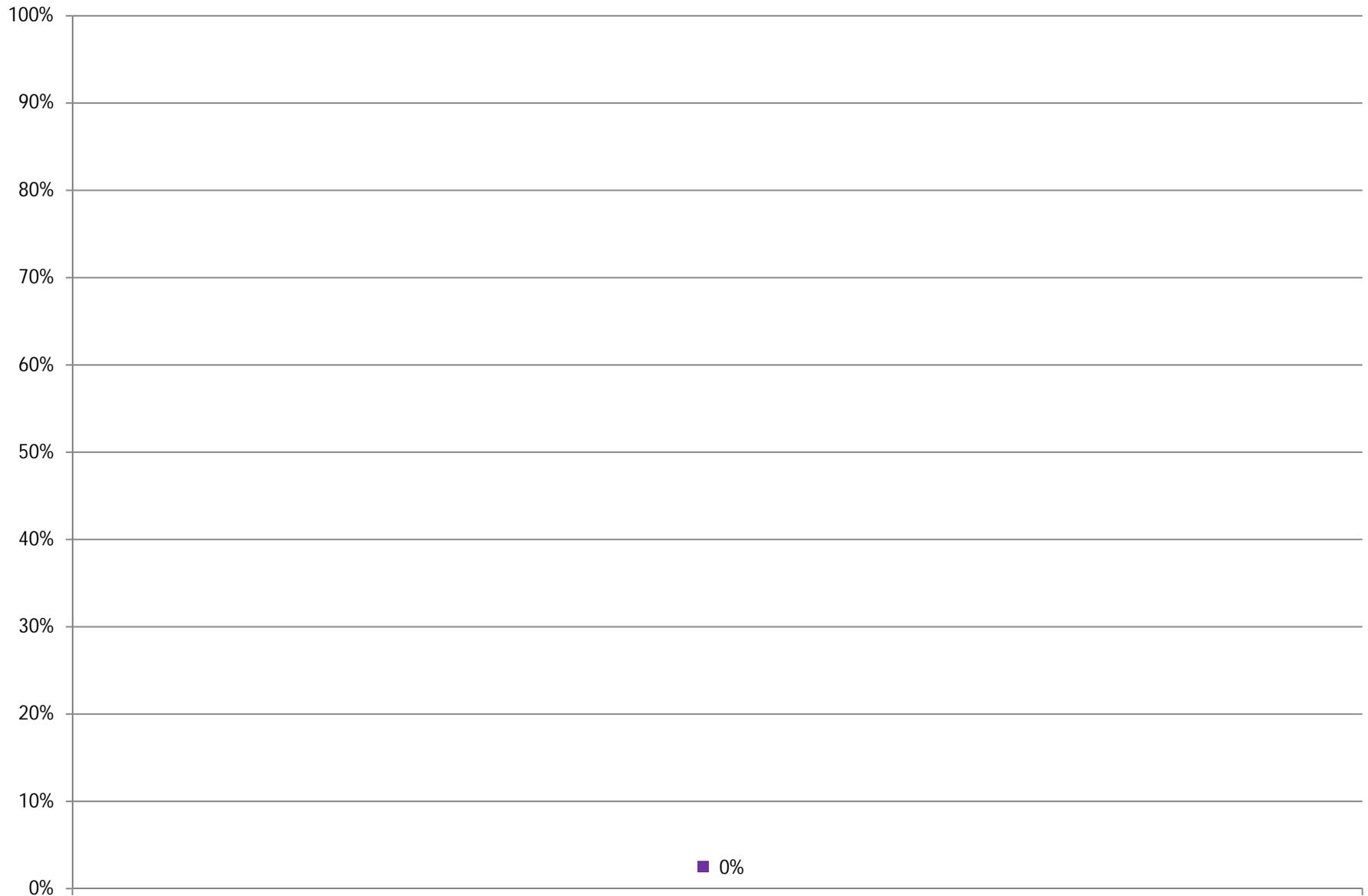




# Open Space and Flexible Design

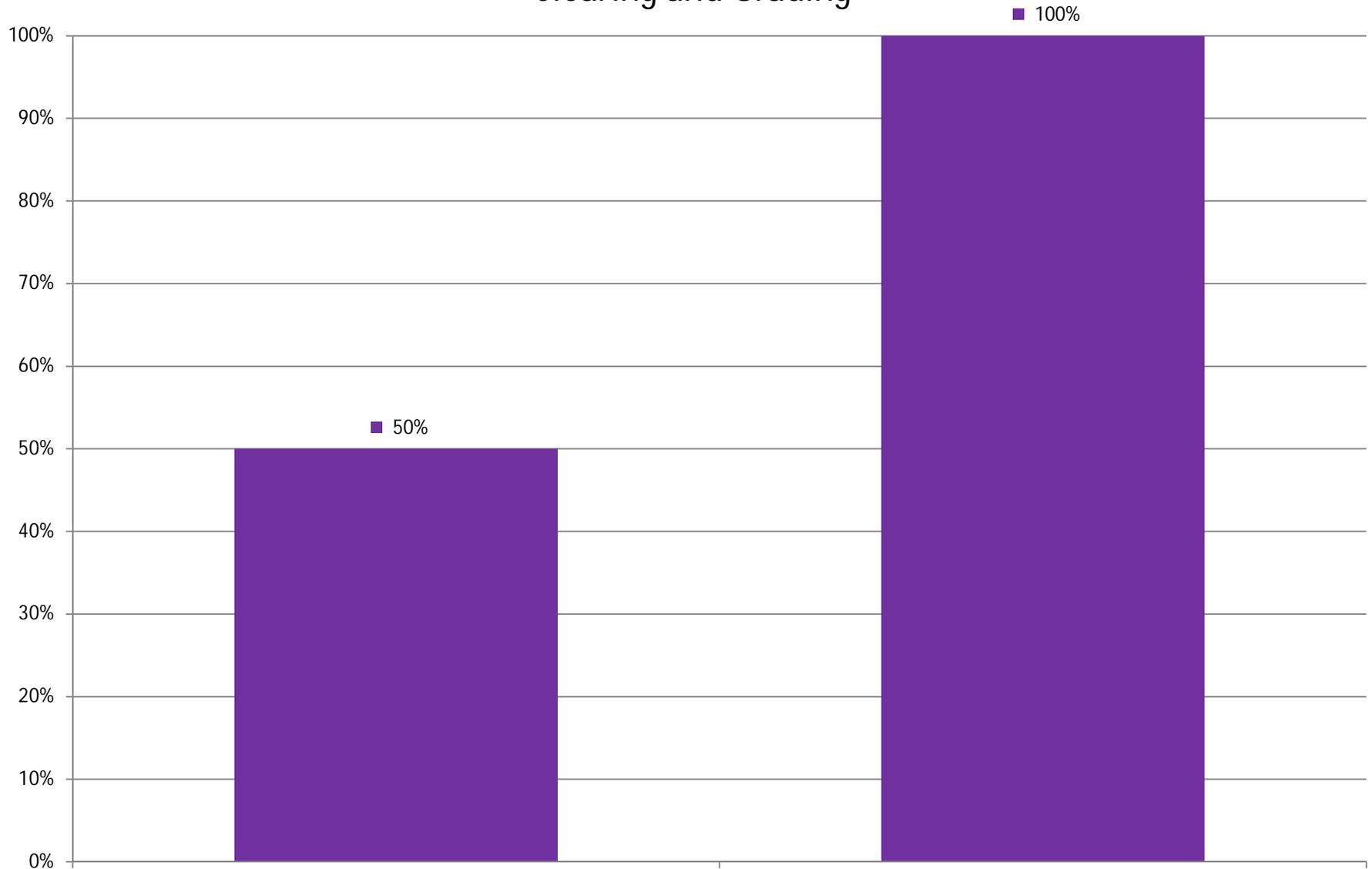


# Open Space Management



61. Does a minimum percentage of open space have to be managed in a natural condition?

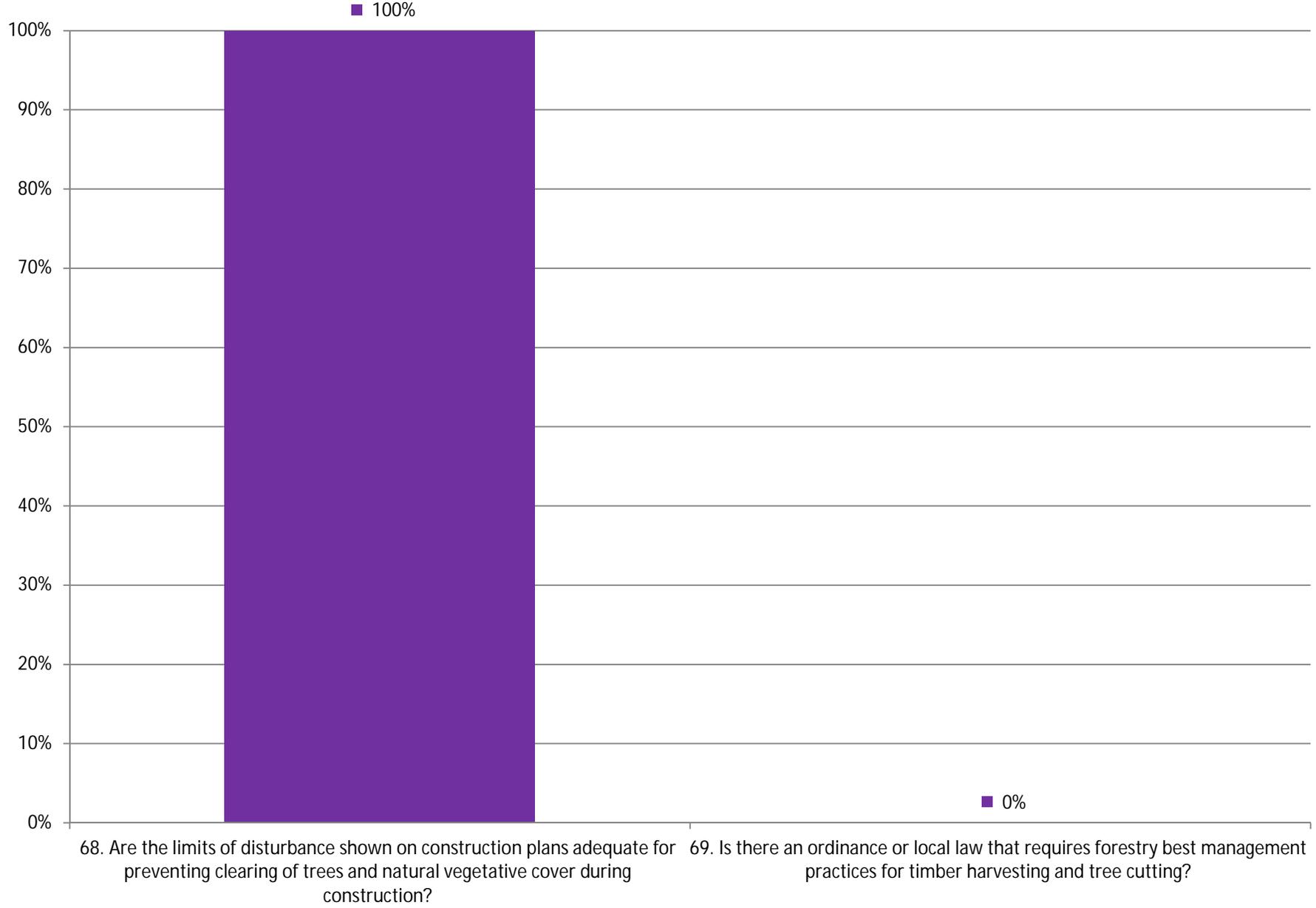
# Clearing and Grading



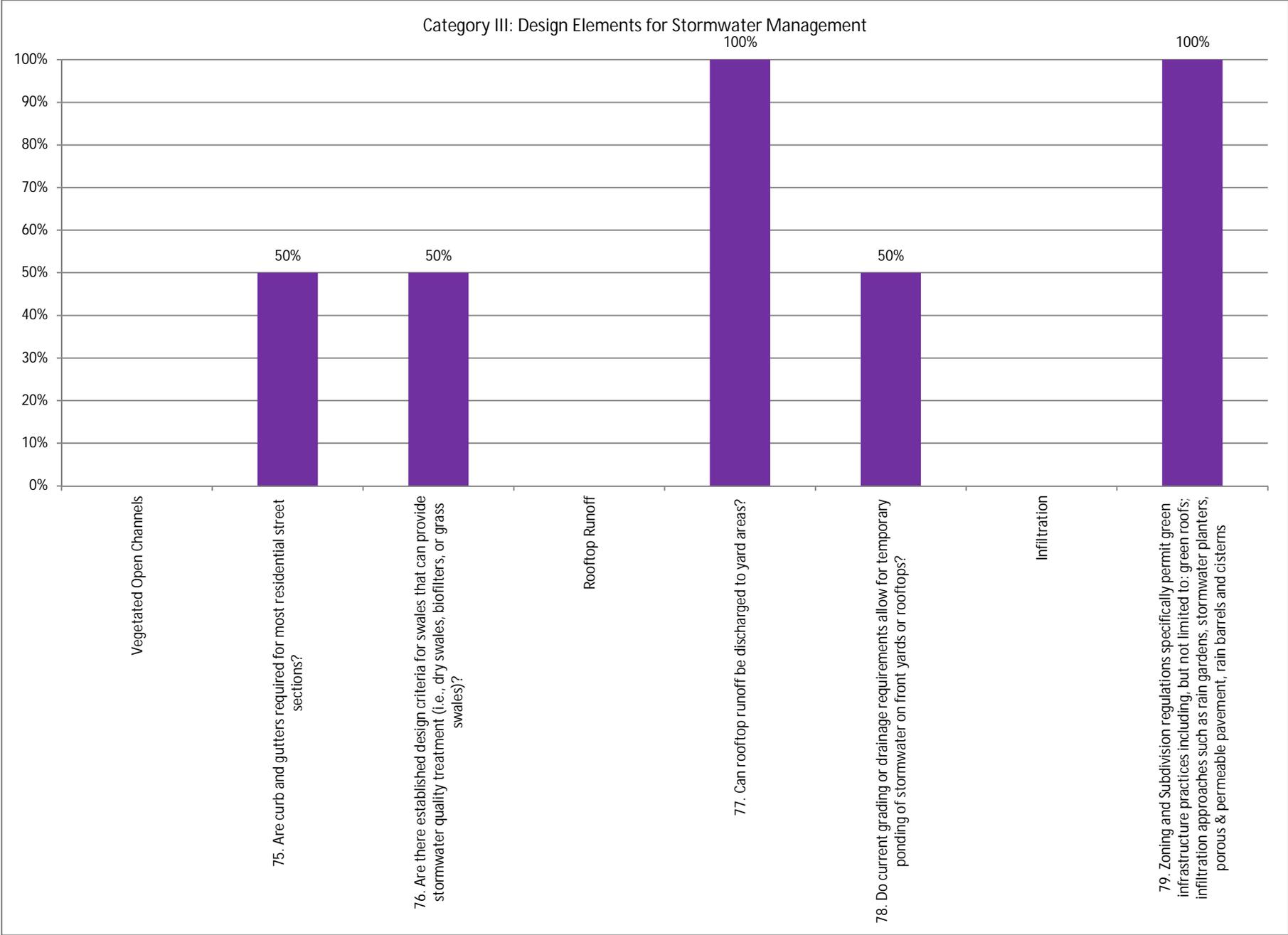
64. Is there an ordinance or local law that requires erosion and sediment control on development sites using the design criteria in, "New York Standards and Specifications for Erosion and Sediment Control"?

65. Is there an ordinance that requires buffer zones be maintained between development and land preservation areas?

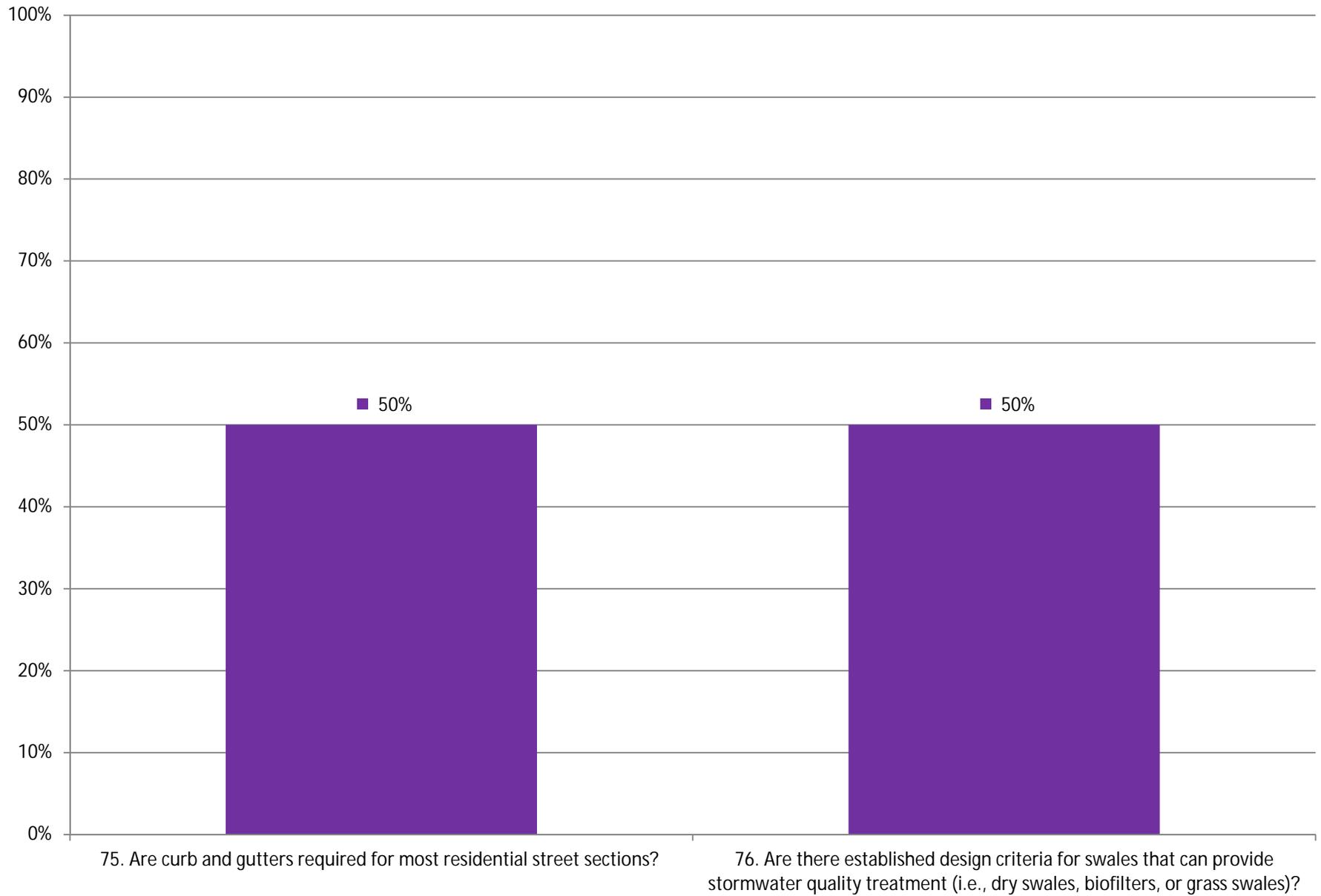
# Tree and Forest Conservation



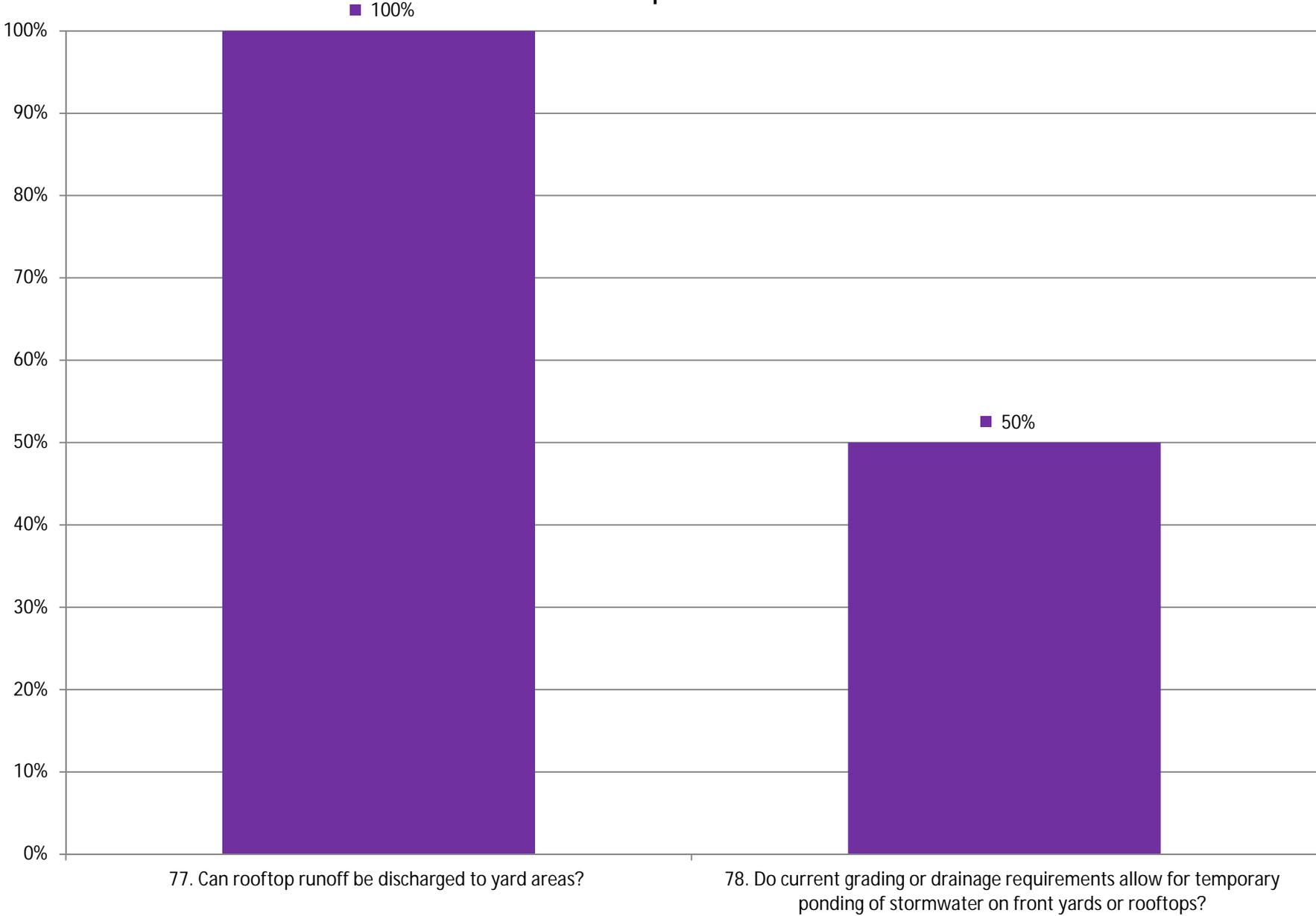




# Vegetated Open Channels

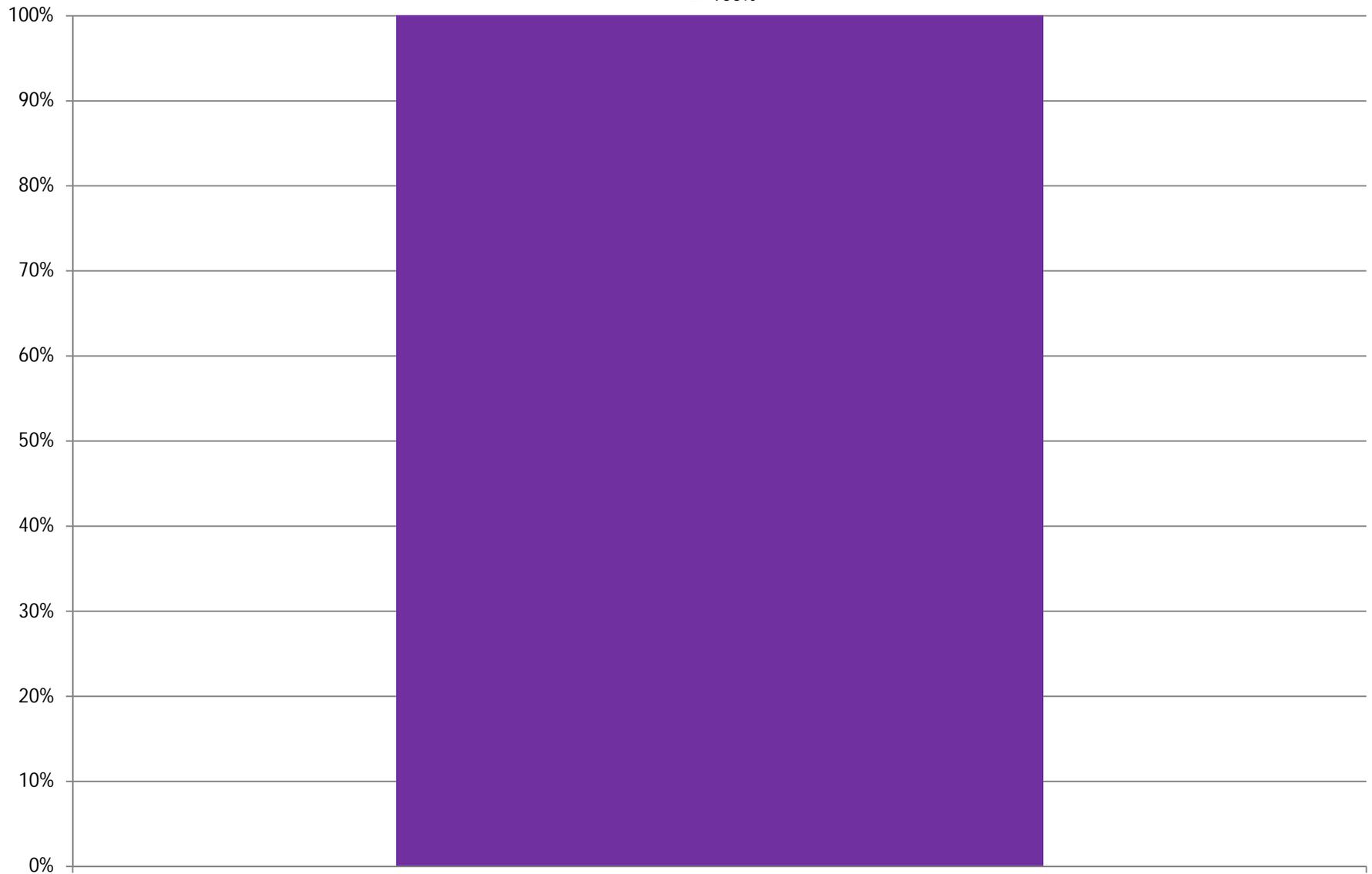


# Rooftop Runoff



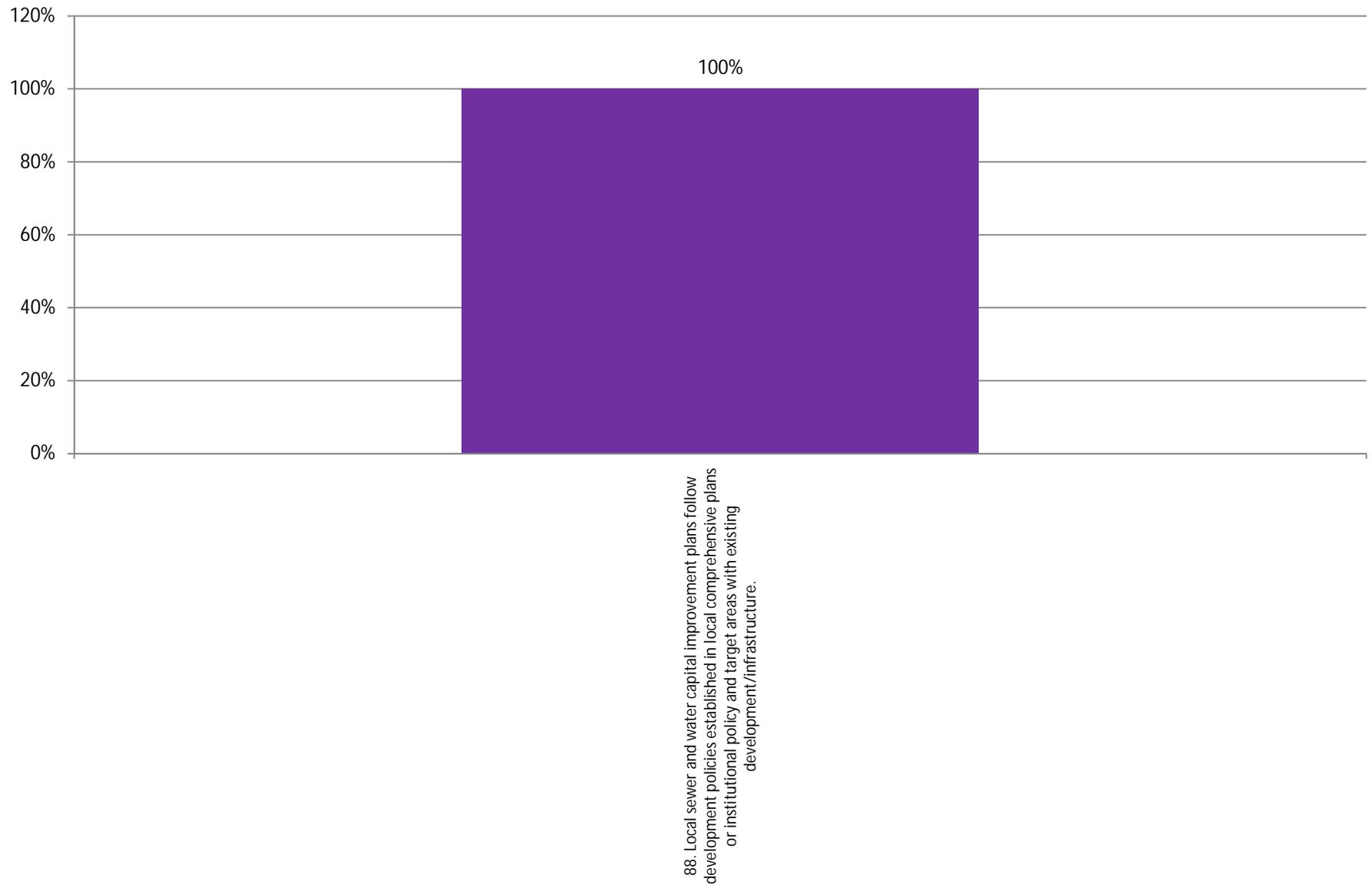
# Infiltration

■ 100%



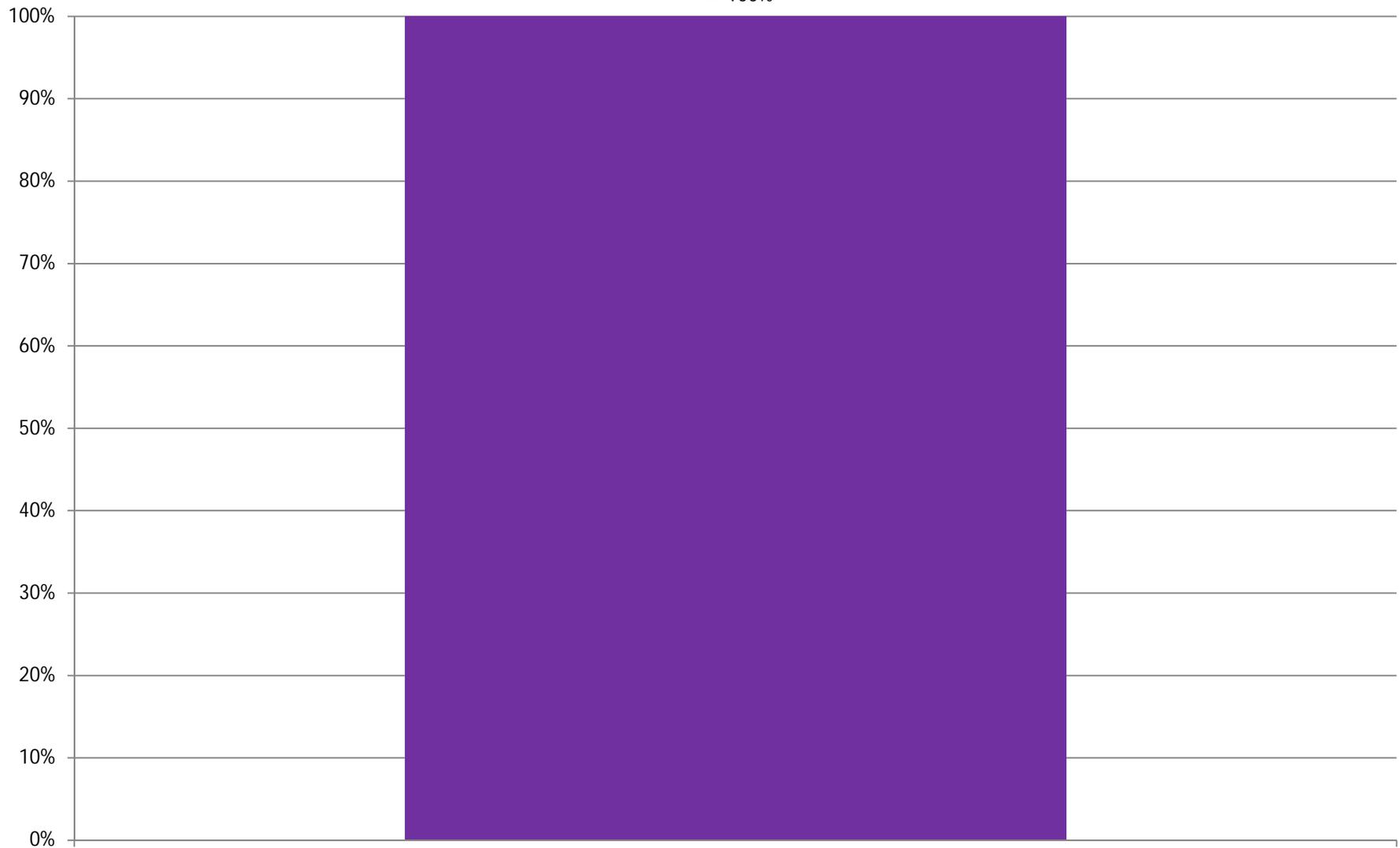
79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns

## Category IV: Promotion of efficient, compact development patterns and infill



## Category IV: Promotion of efficient, compact development patterns and infill

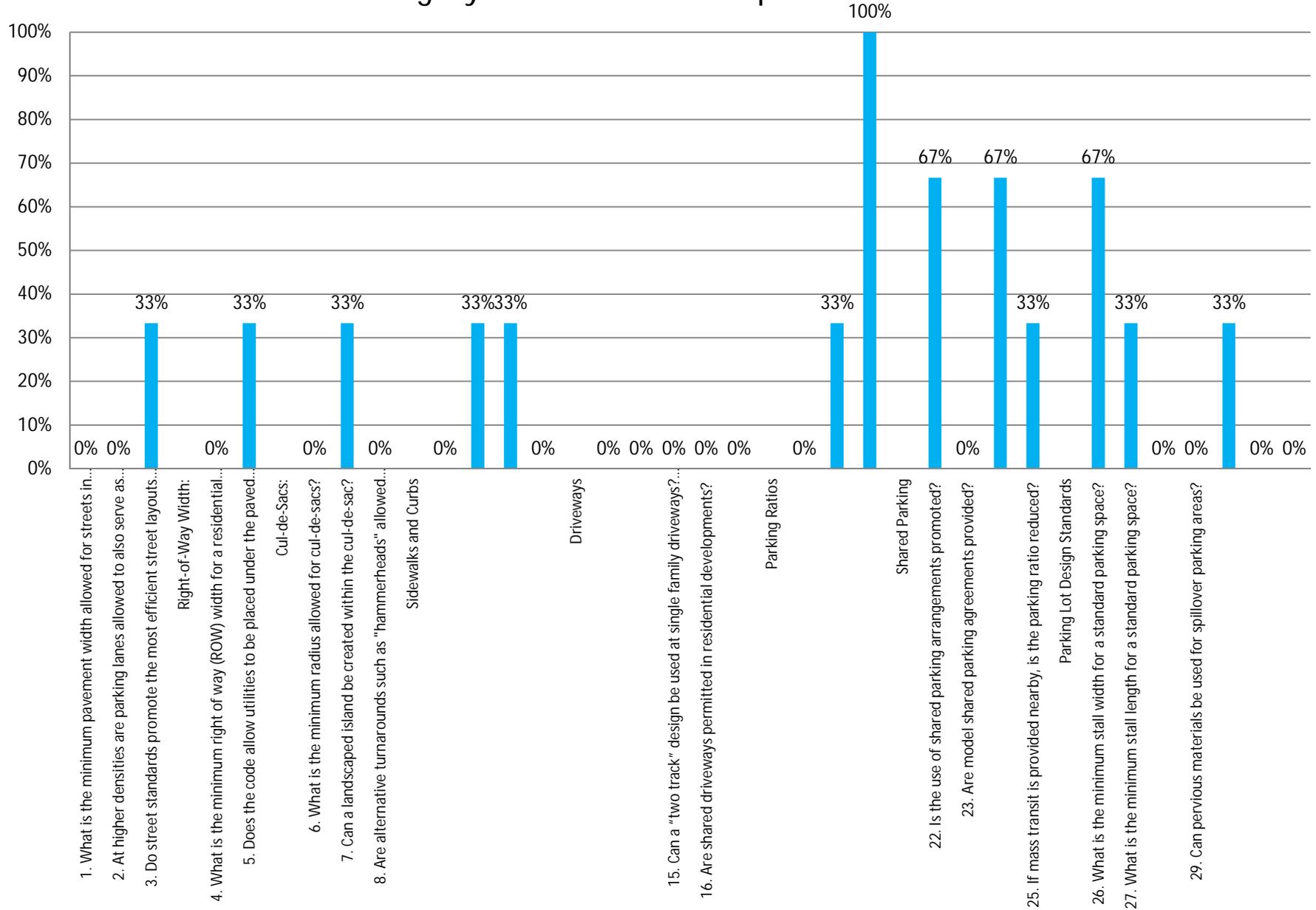
■ 100%



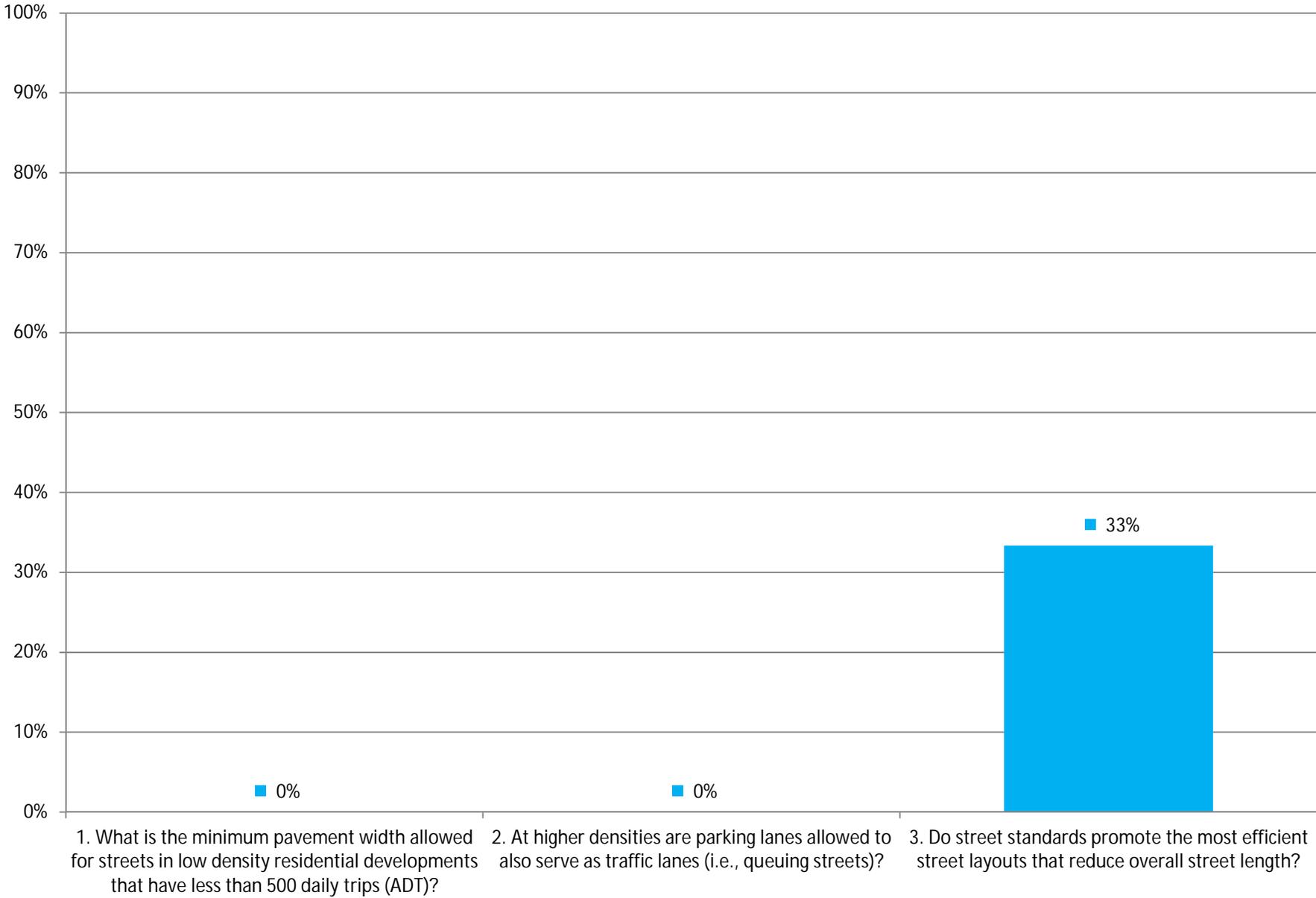
88. Local sewer and water capital improvement plans follow development policies established in local comprehensive plans or institutional policy and target areas with existing development/infrastructure.

**Appendix G**  
**Cities Gap Analysis**

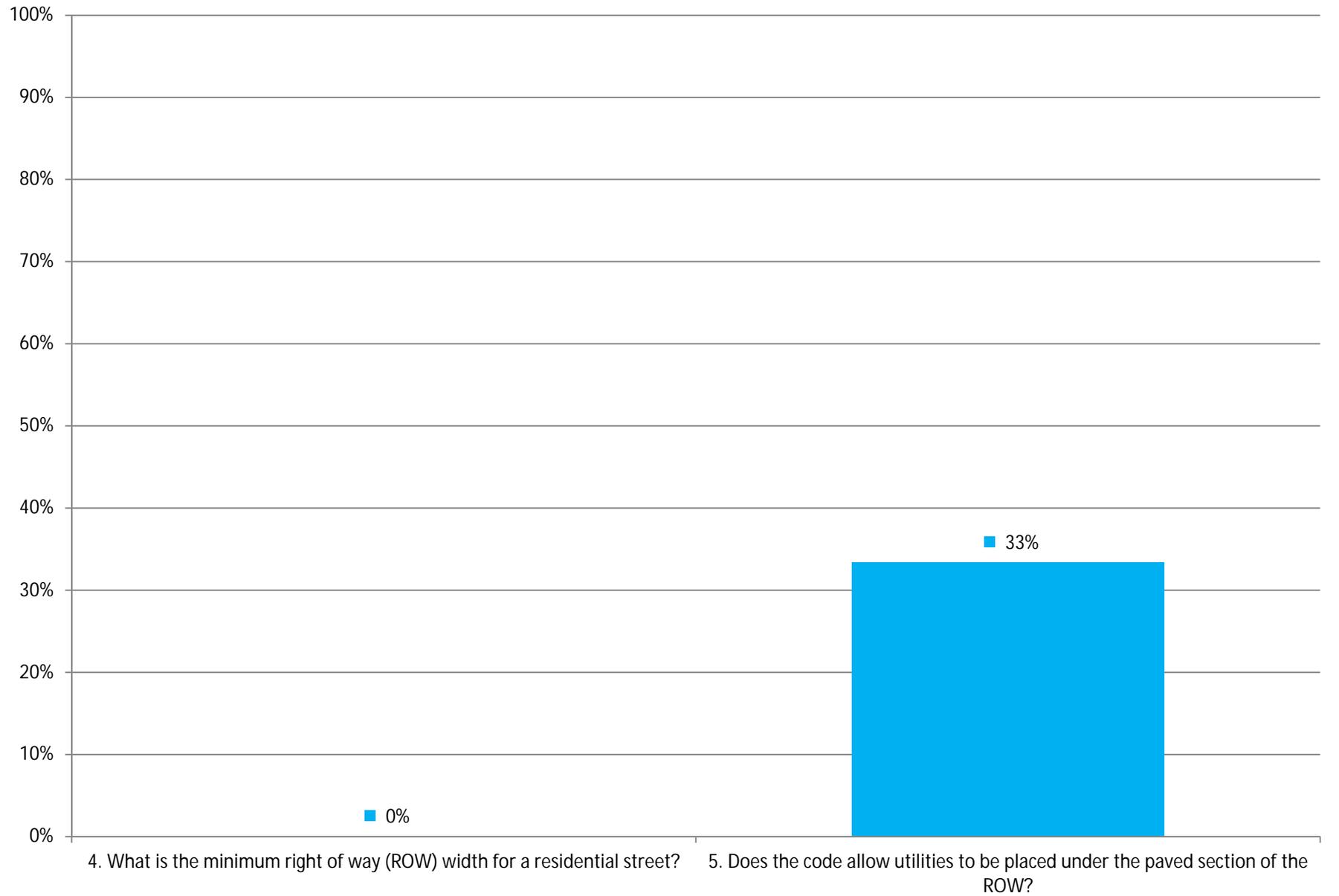
## Category I: Reduction of Impervious Cover



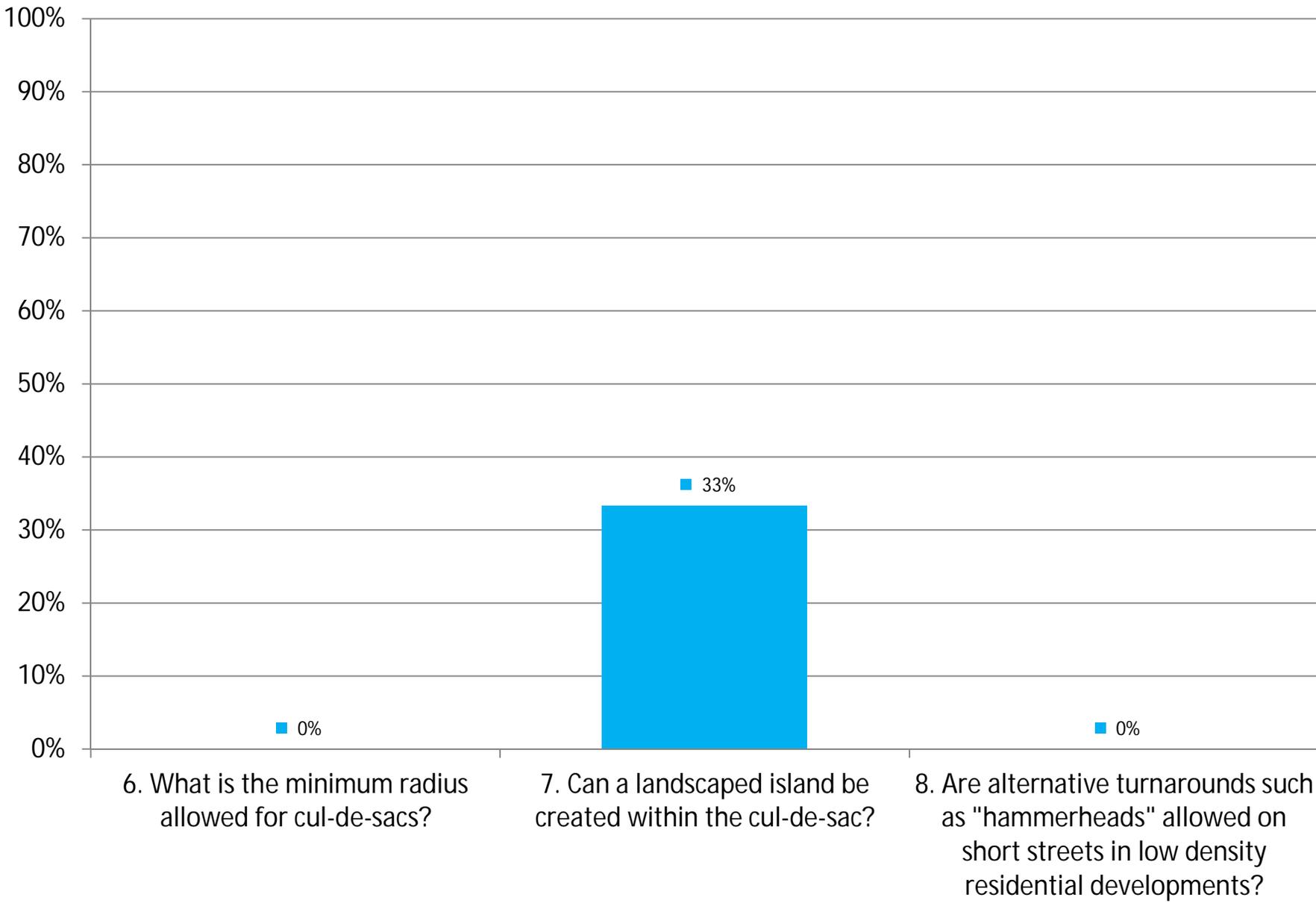
# Street width and length:



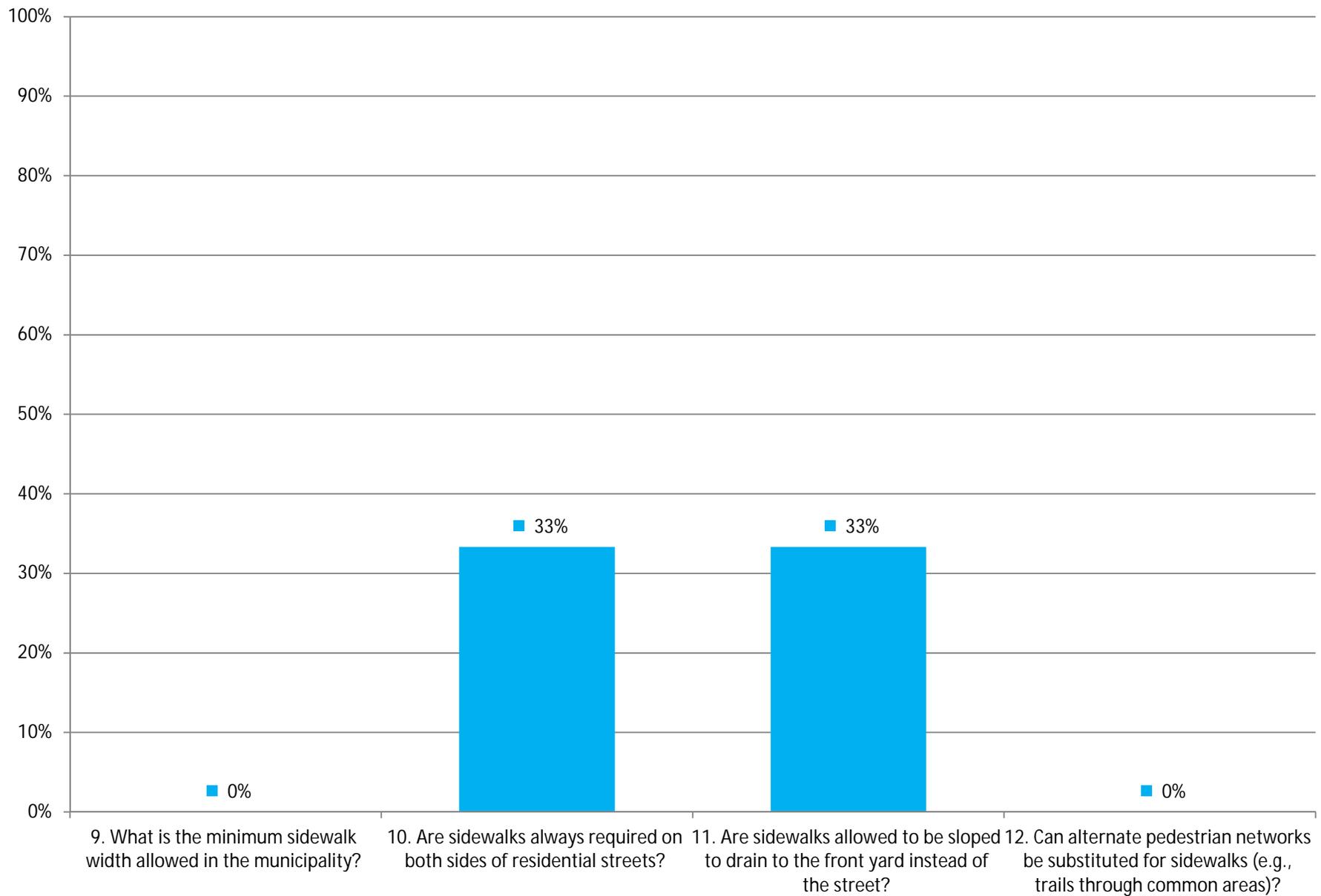
## Right-of-Way Width:

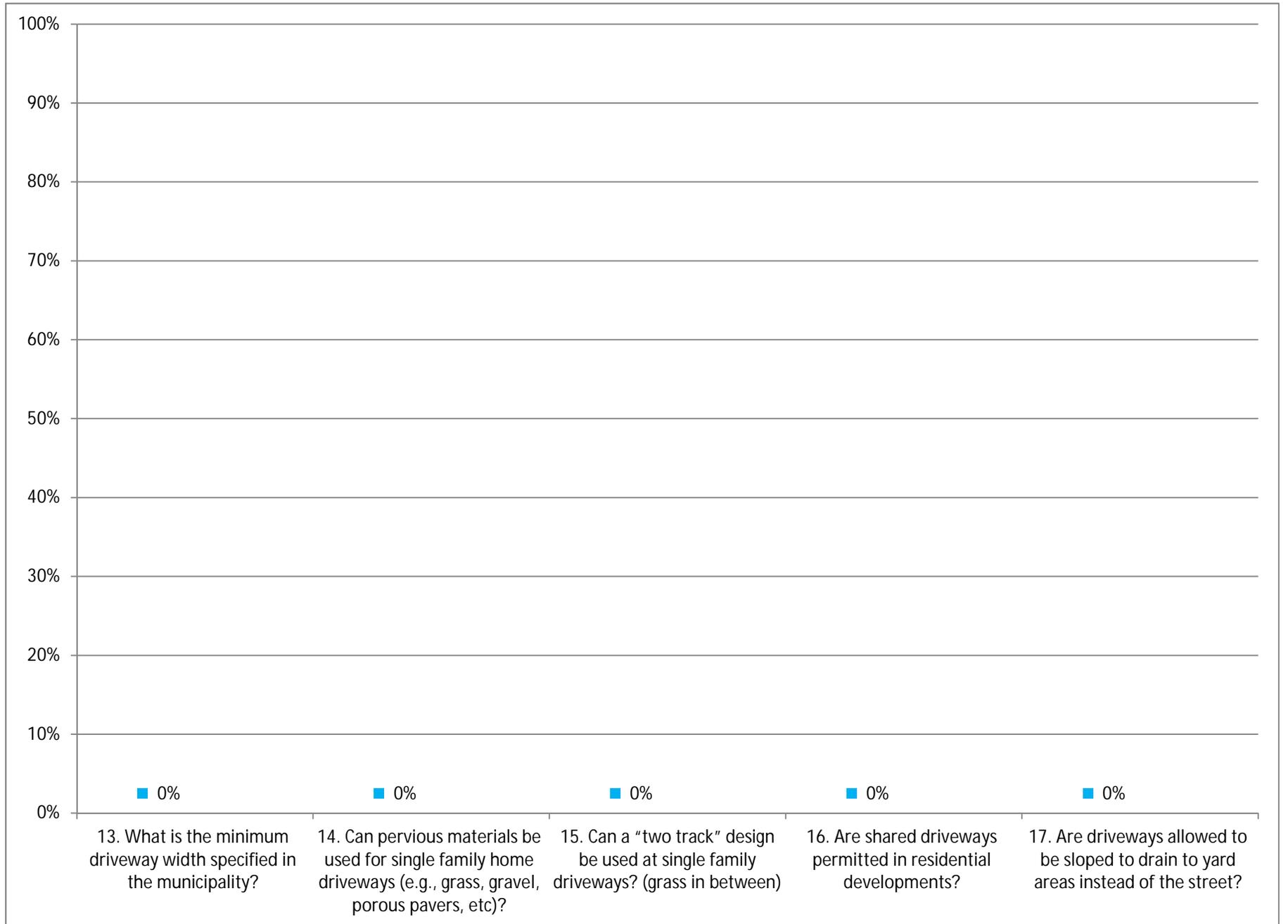


### Cul-de-Sacs:

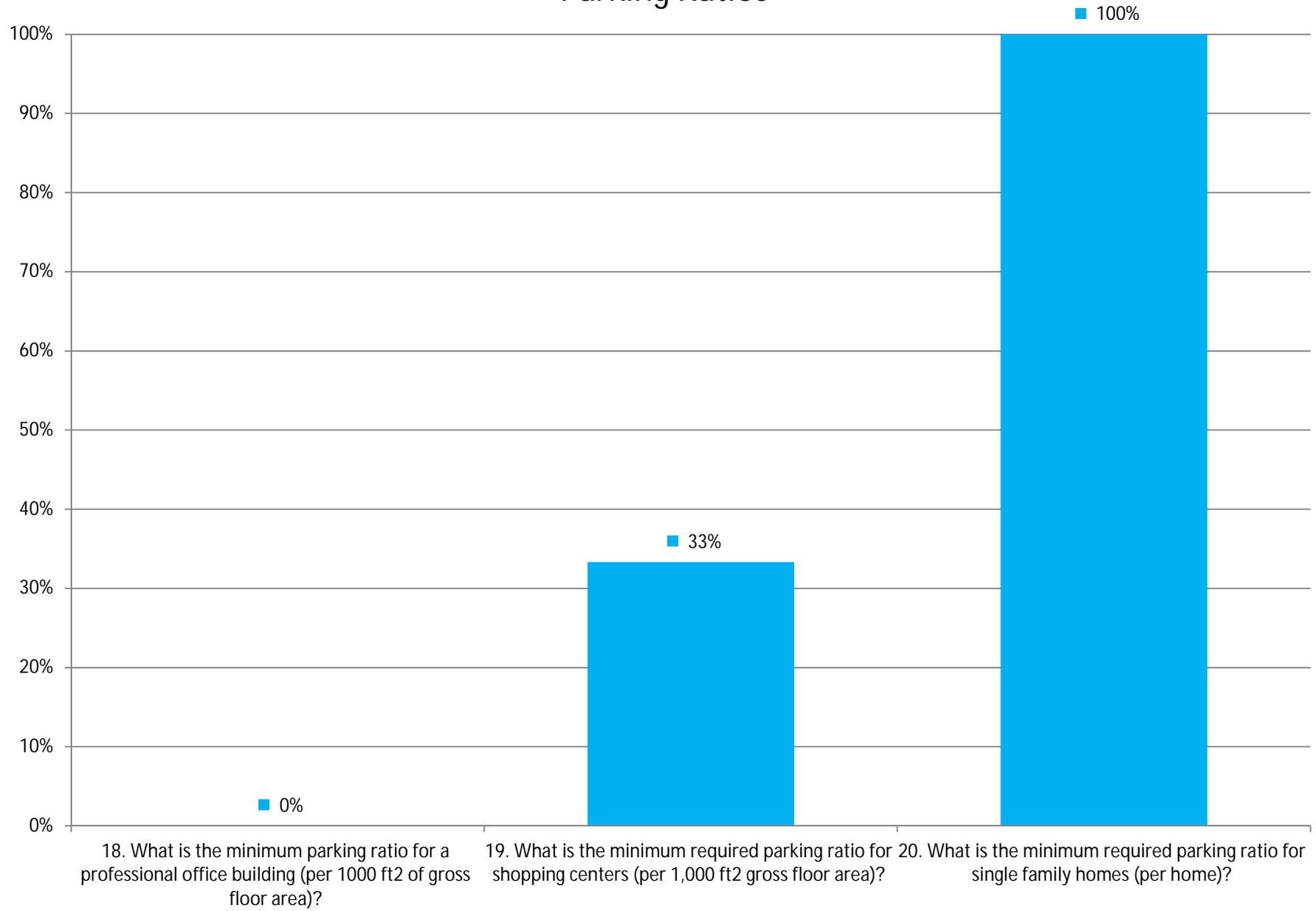


## Sidewalks and Curbs

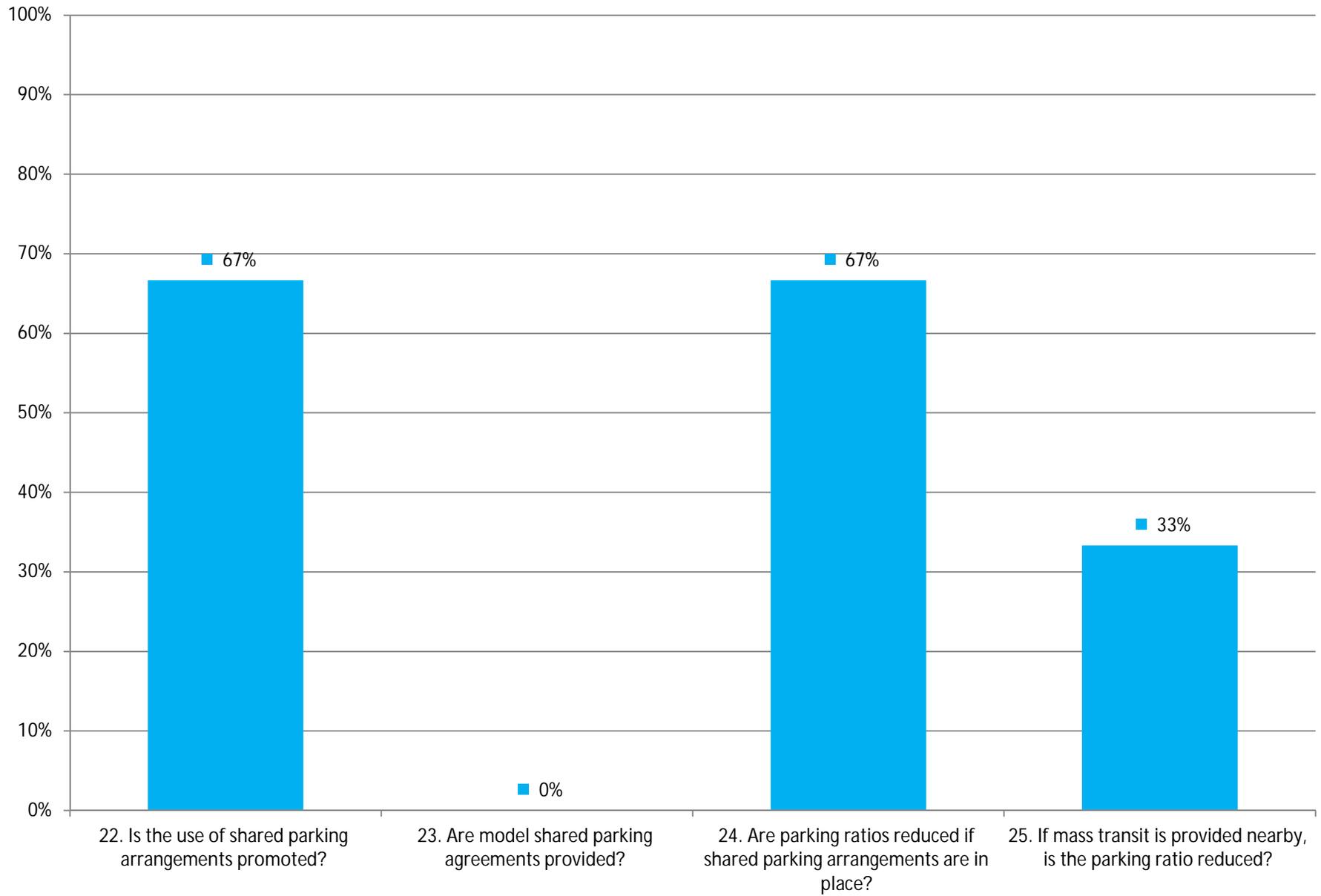




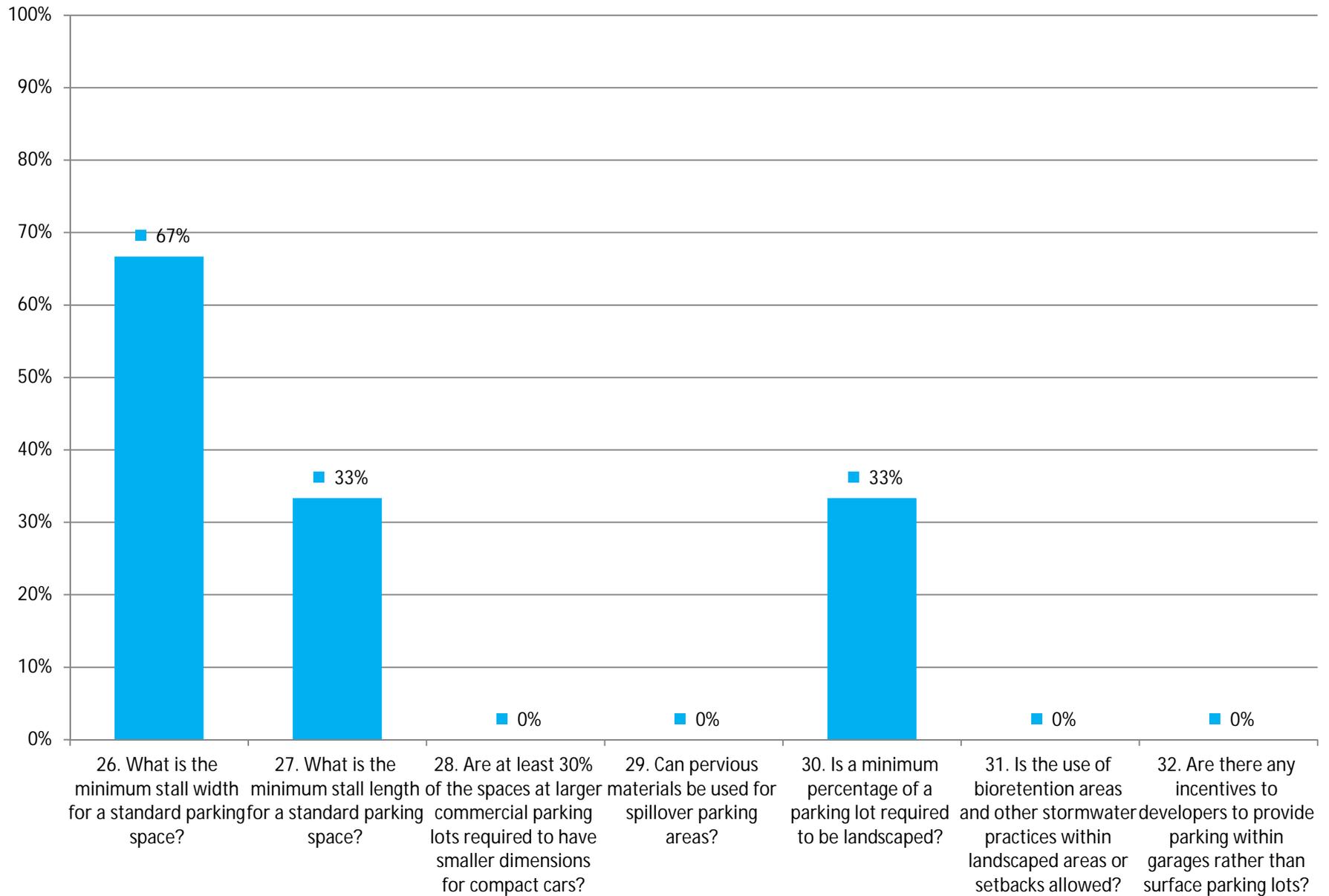
# Parking Ratios



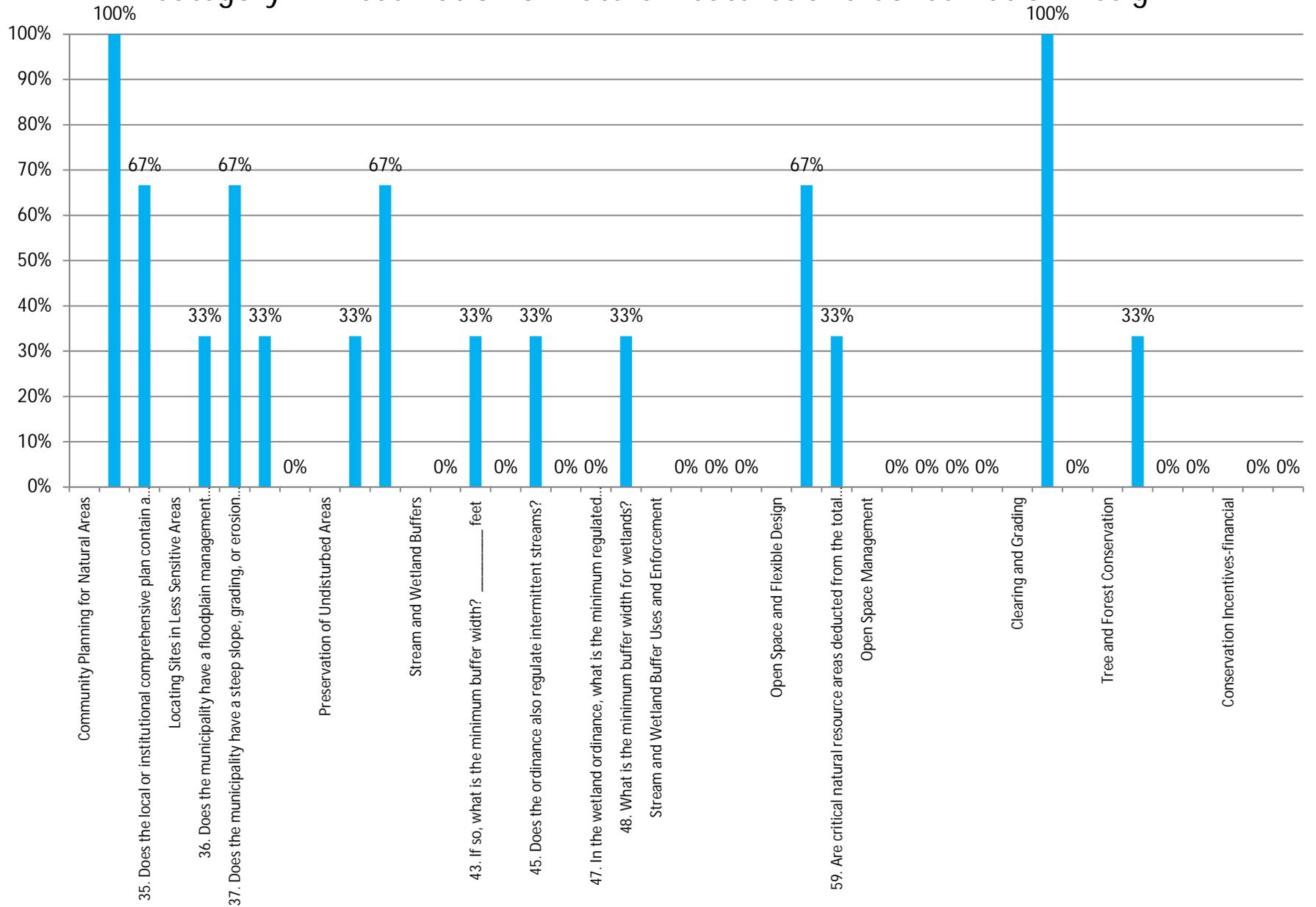
# Shared Parking



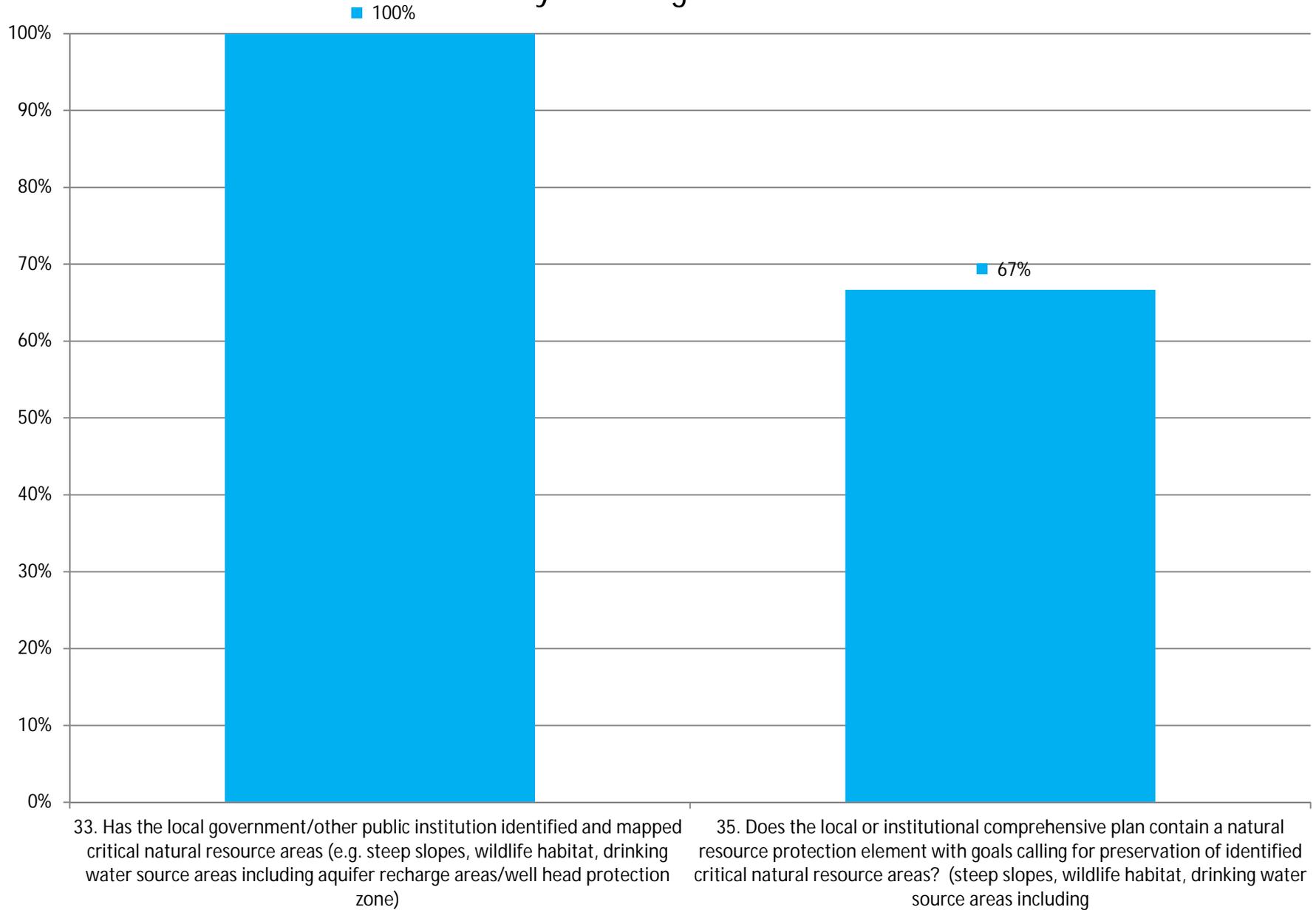
## Parking Lot Design Standards



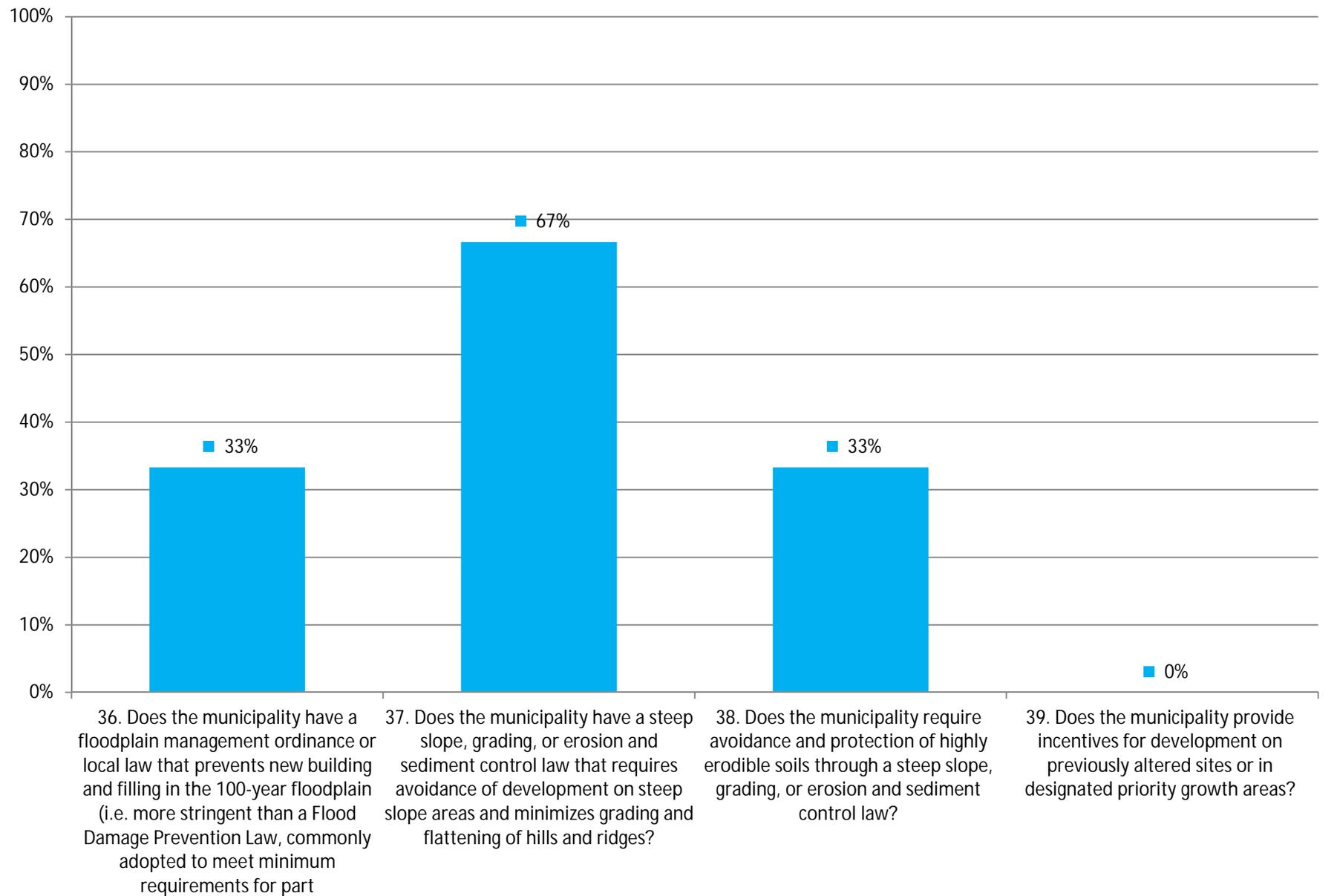
## Category II: Preservation of Natural Features and Conservation Design



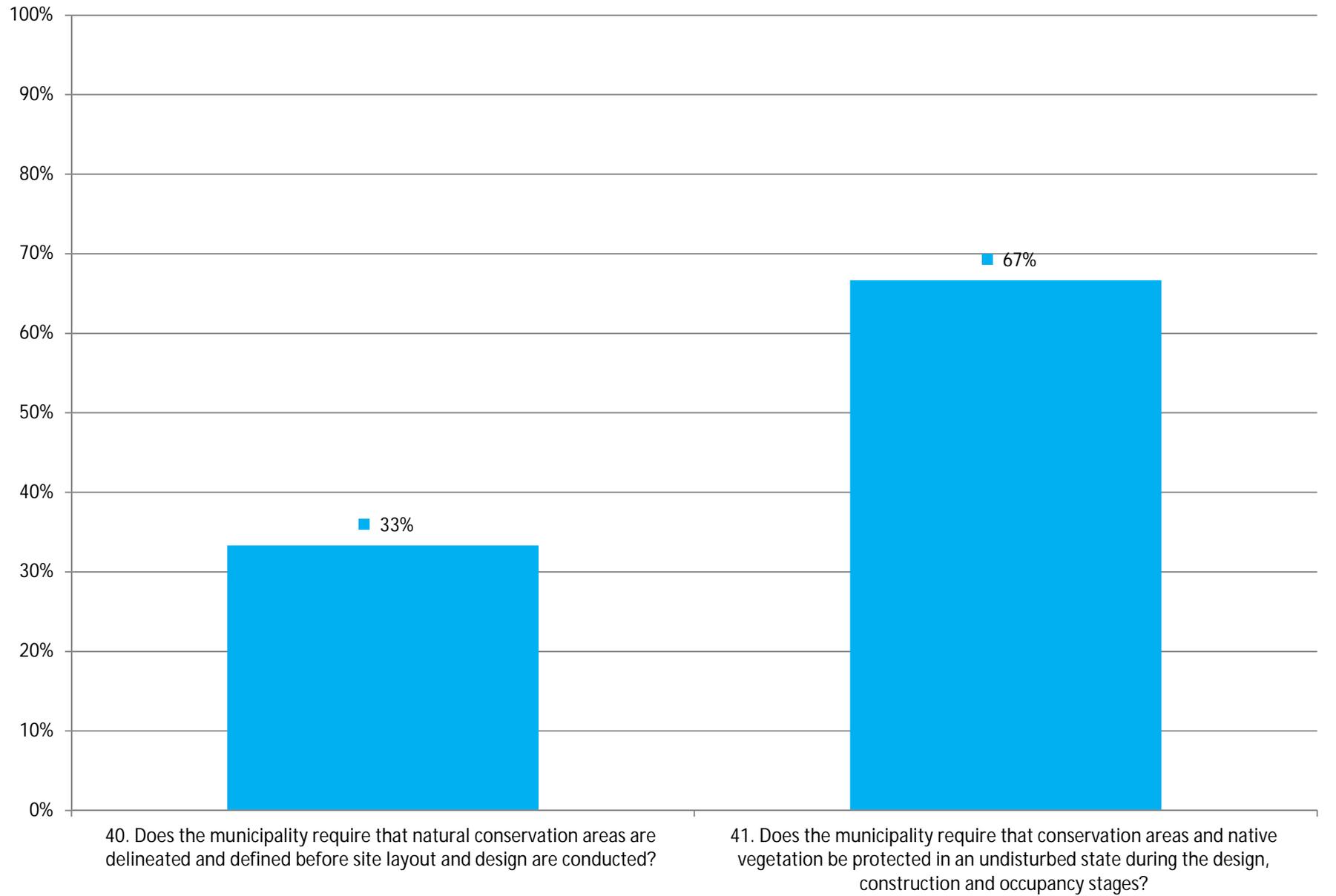
## Community Planning for Natural Areas



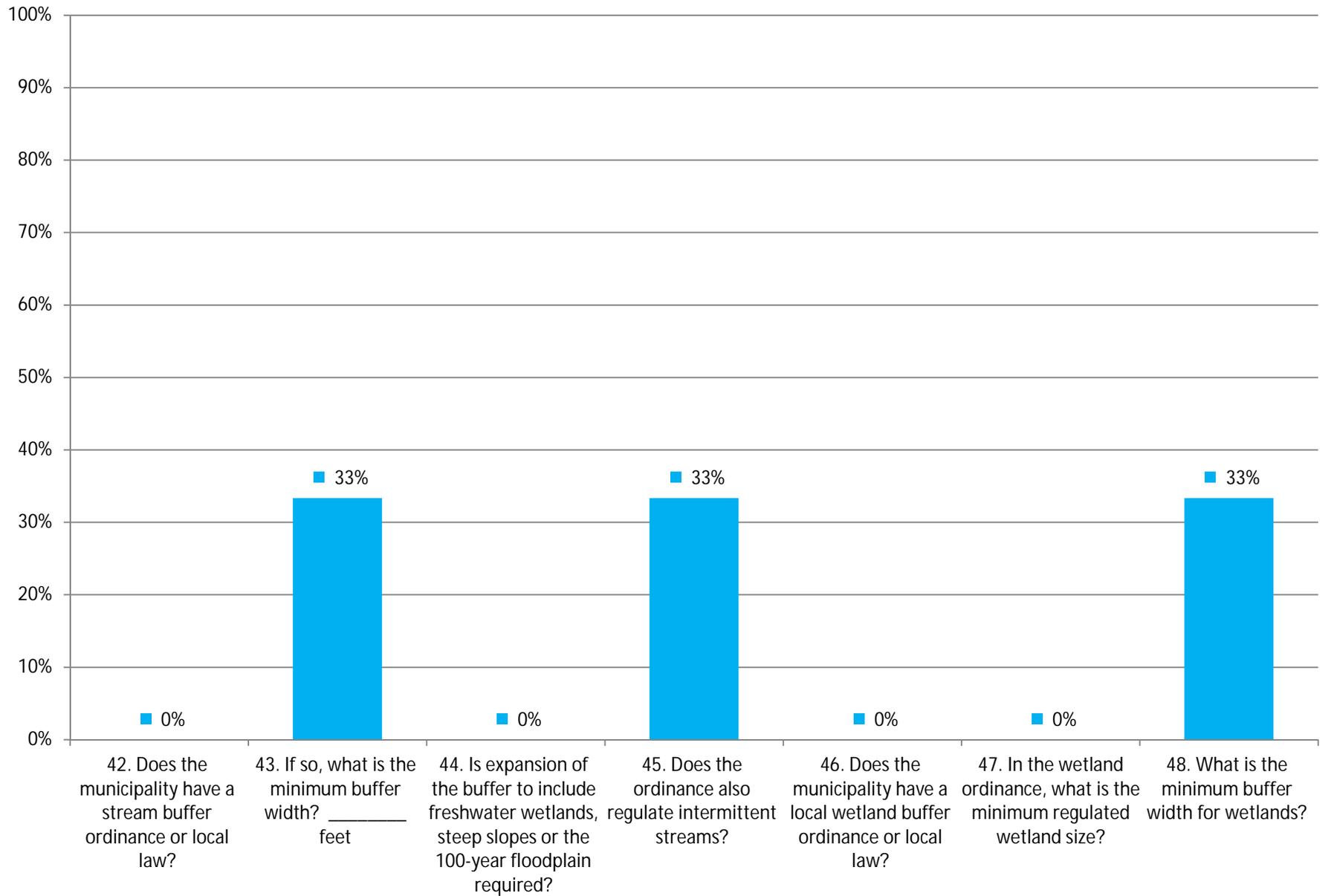
## Locating Sites in Less Sensitive Areas

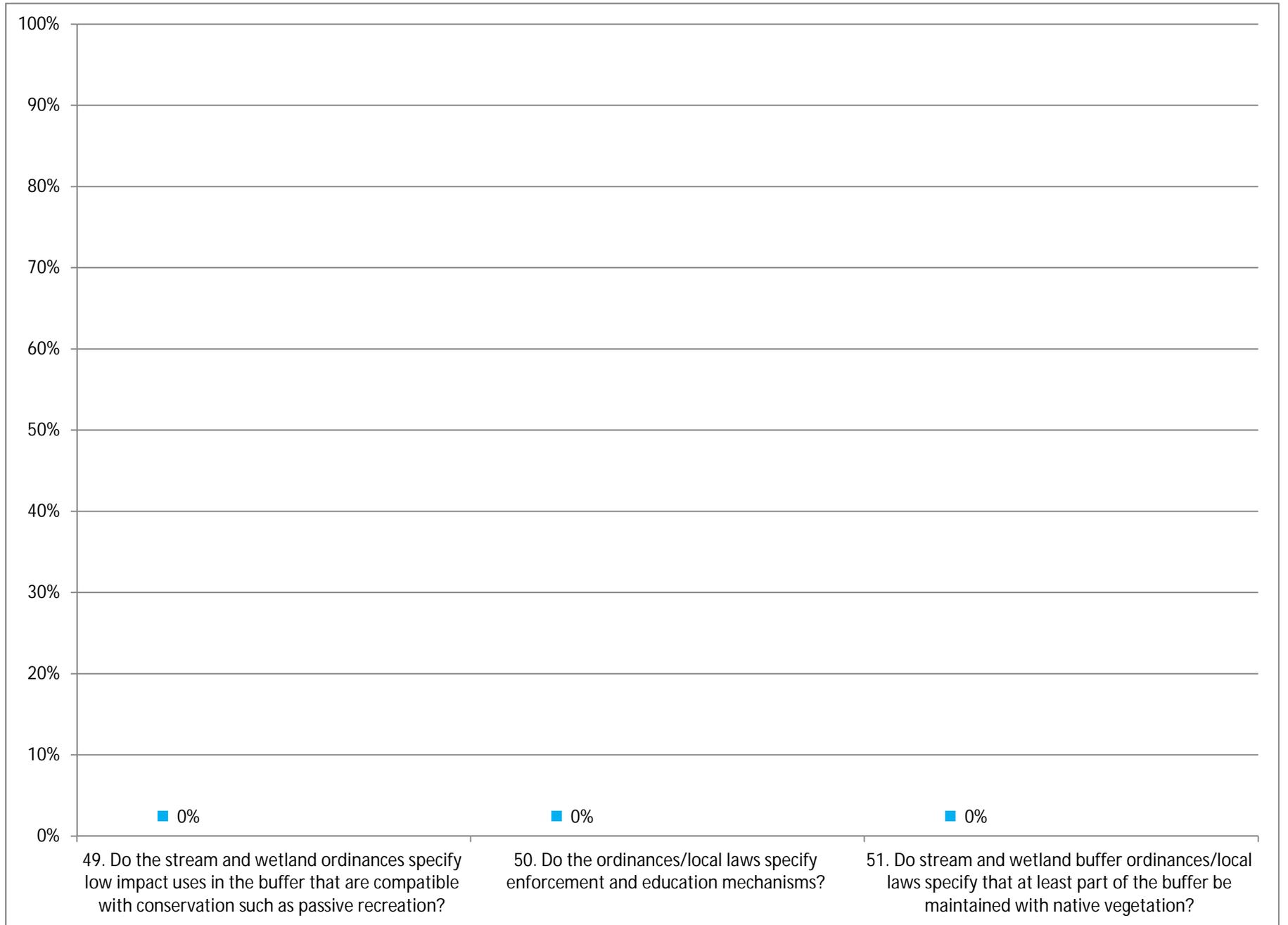


## Preservation of Undisturbed Areas

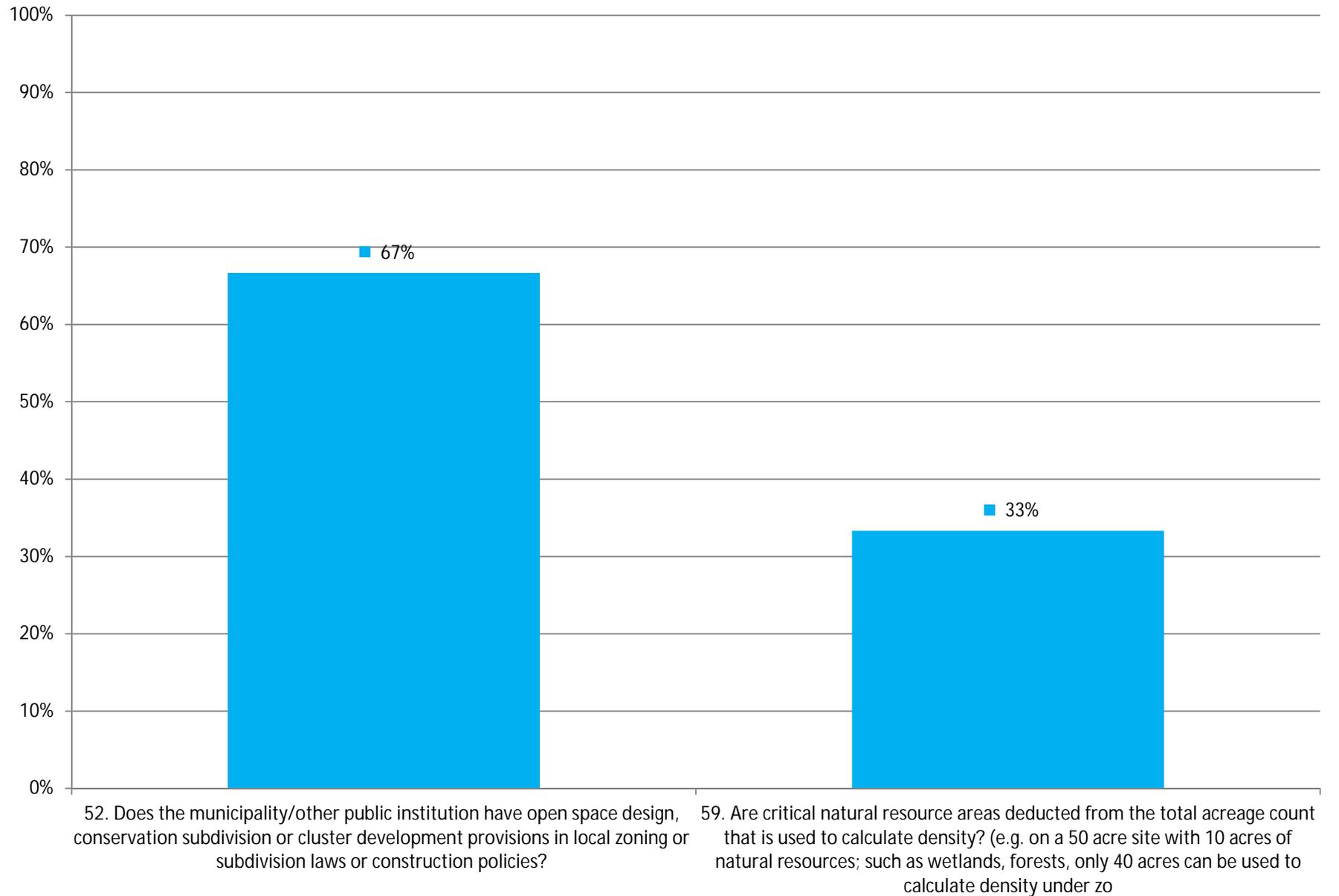


## Stream and Wetland Buffers

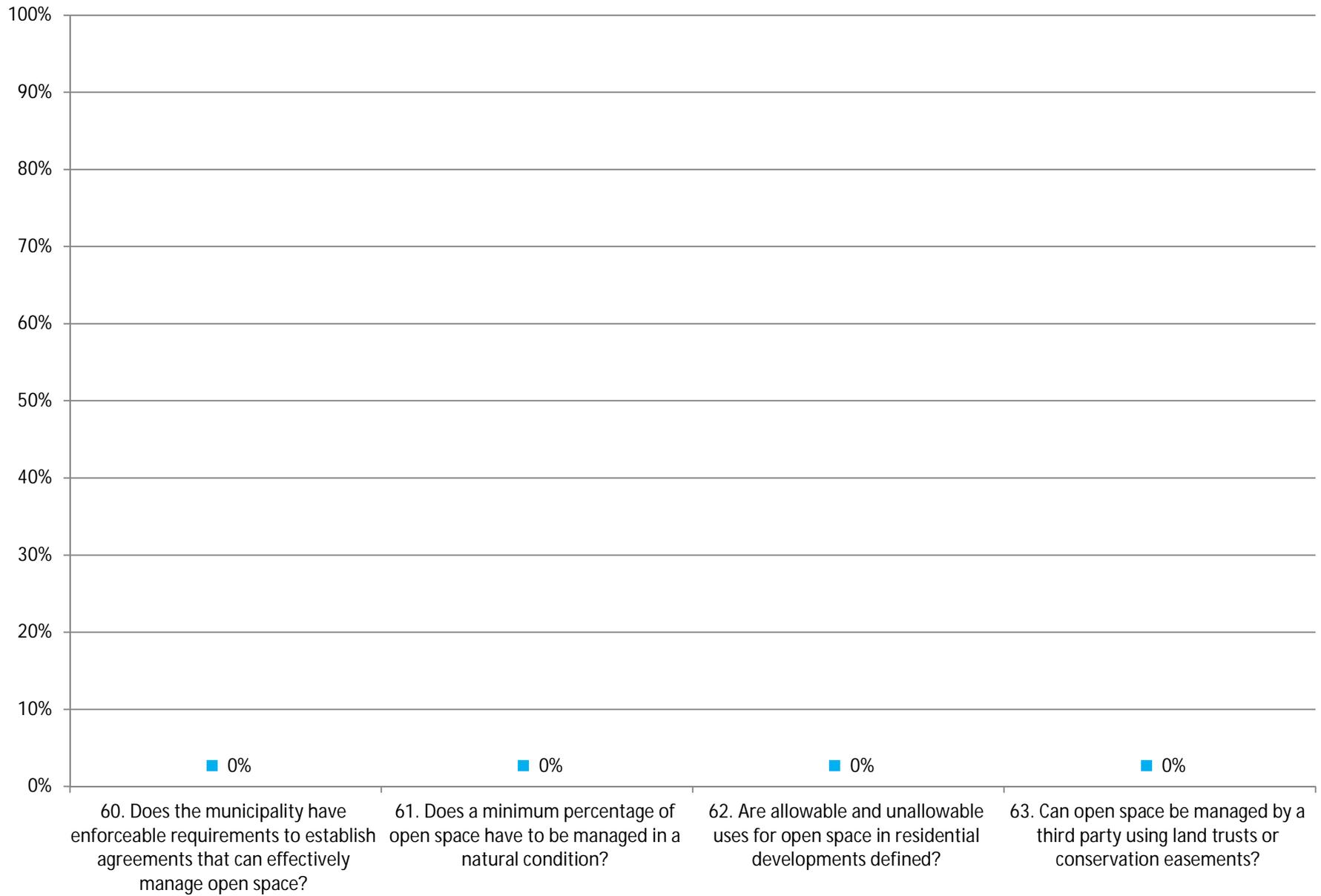




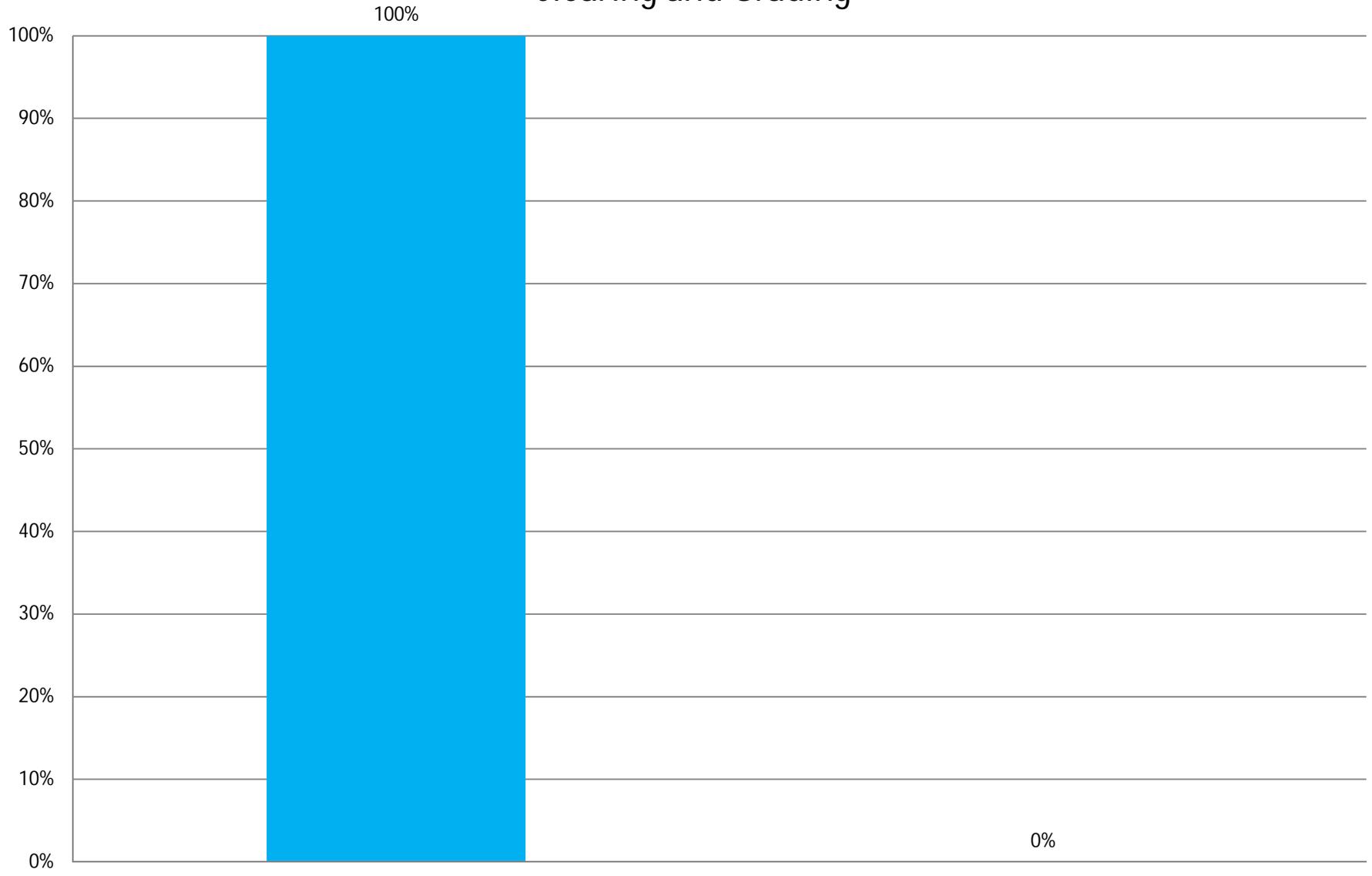
## Open Space and Flexible Design



# Open Space Management



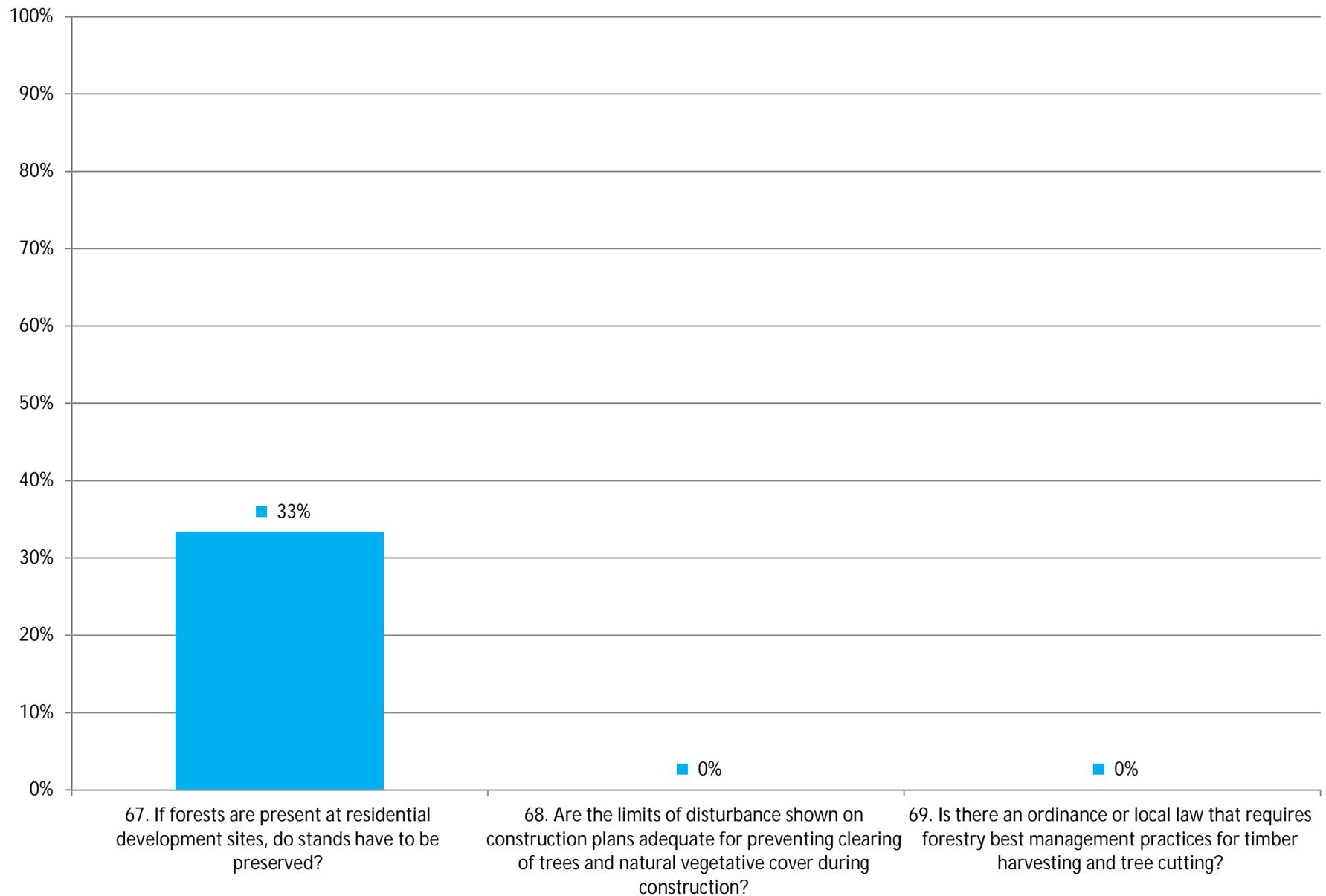
# Clearing and Grading



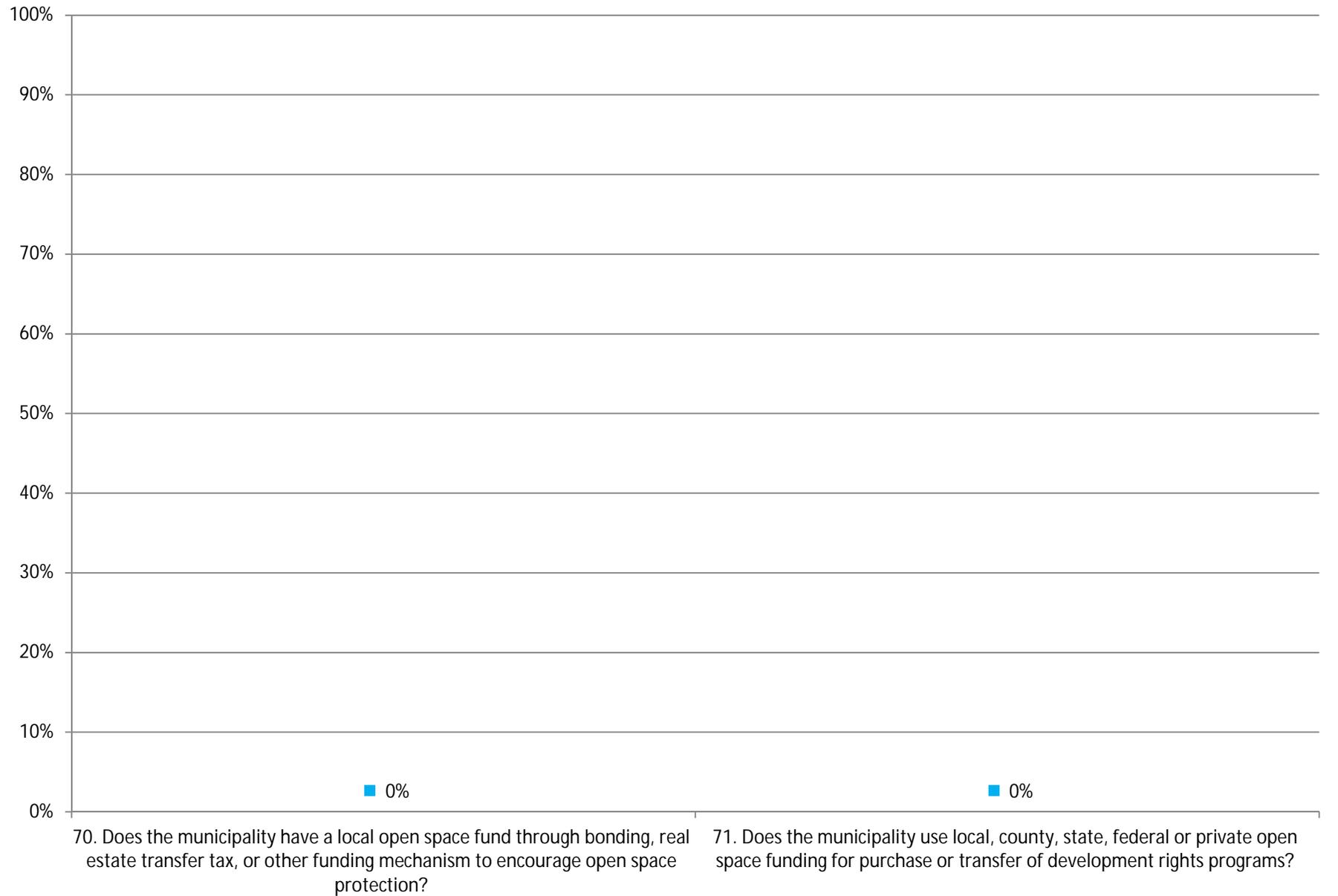
64. Is there an ordinance or local law that requires erosion and sediment control on development sites using the design criteria in, "New York Standards and Specifications for Erosion and Sediment Control"?

65. Is there an ordinance that requires buffer zones be maintained between development and land preservation areas?

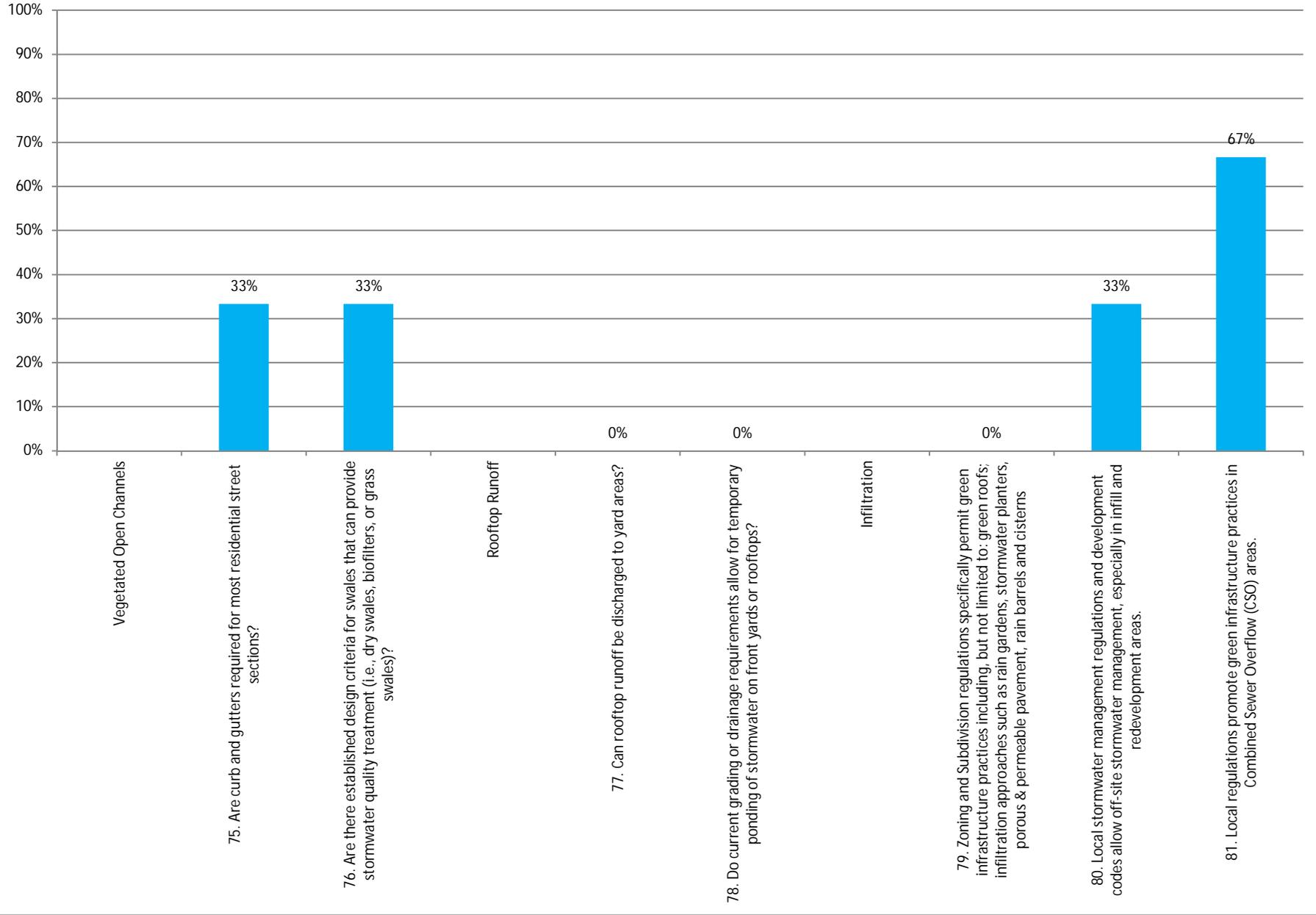
## Tree and Forest Conservation



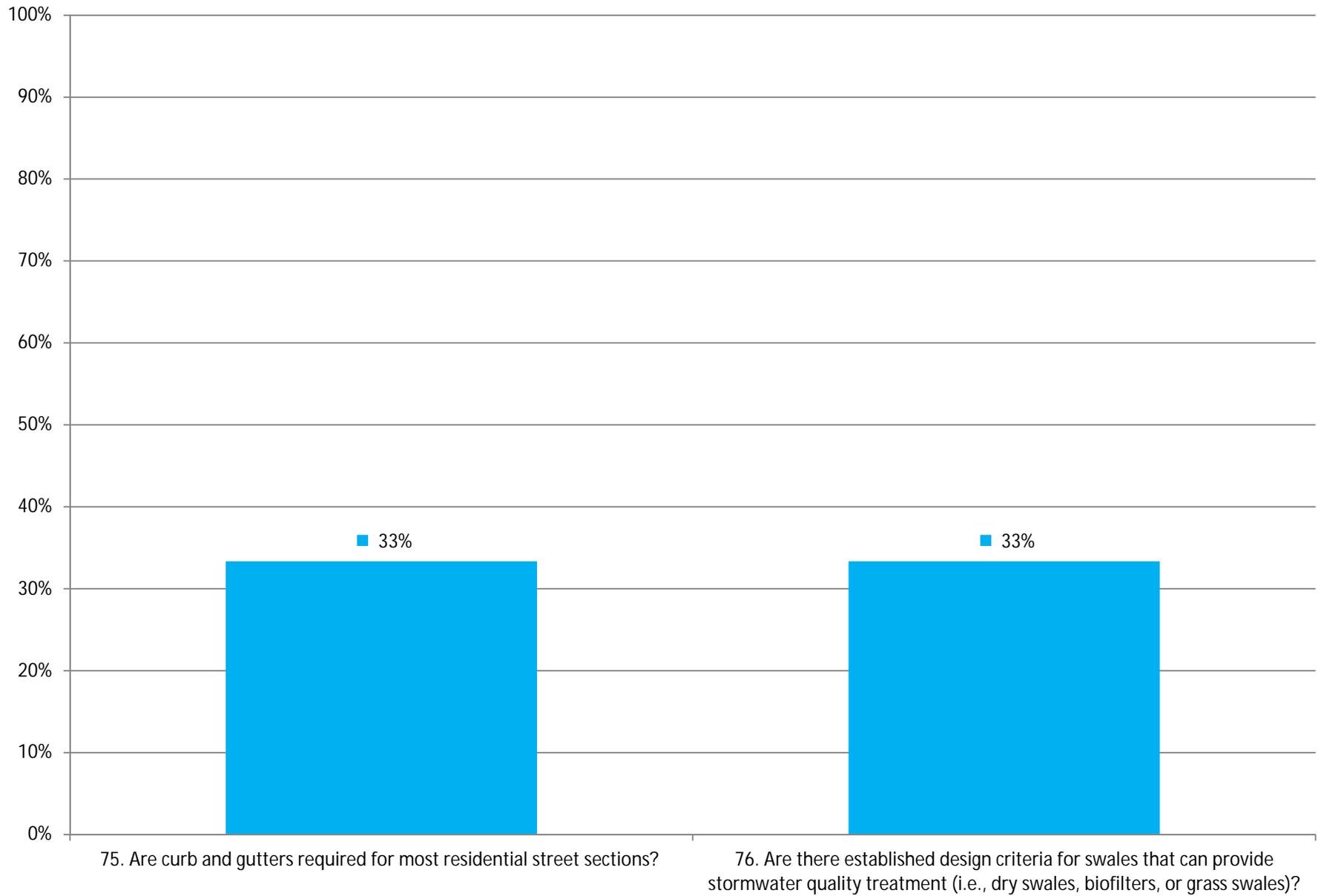
## Conservation Incentives-financial



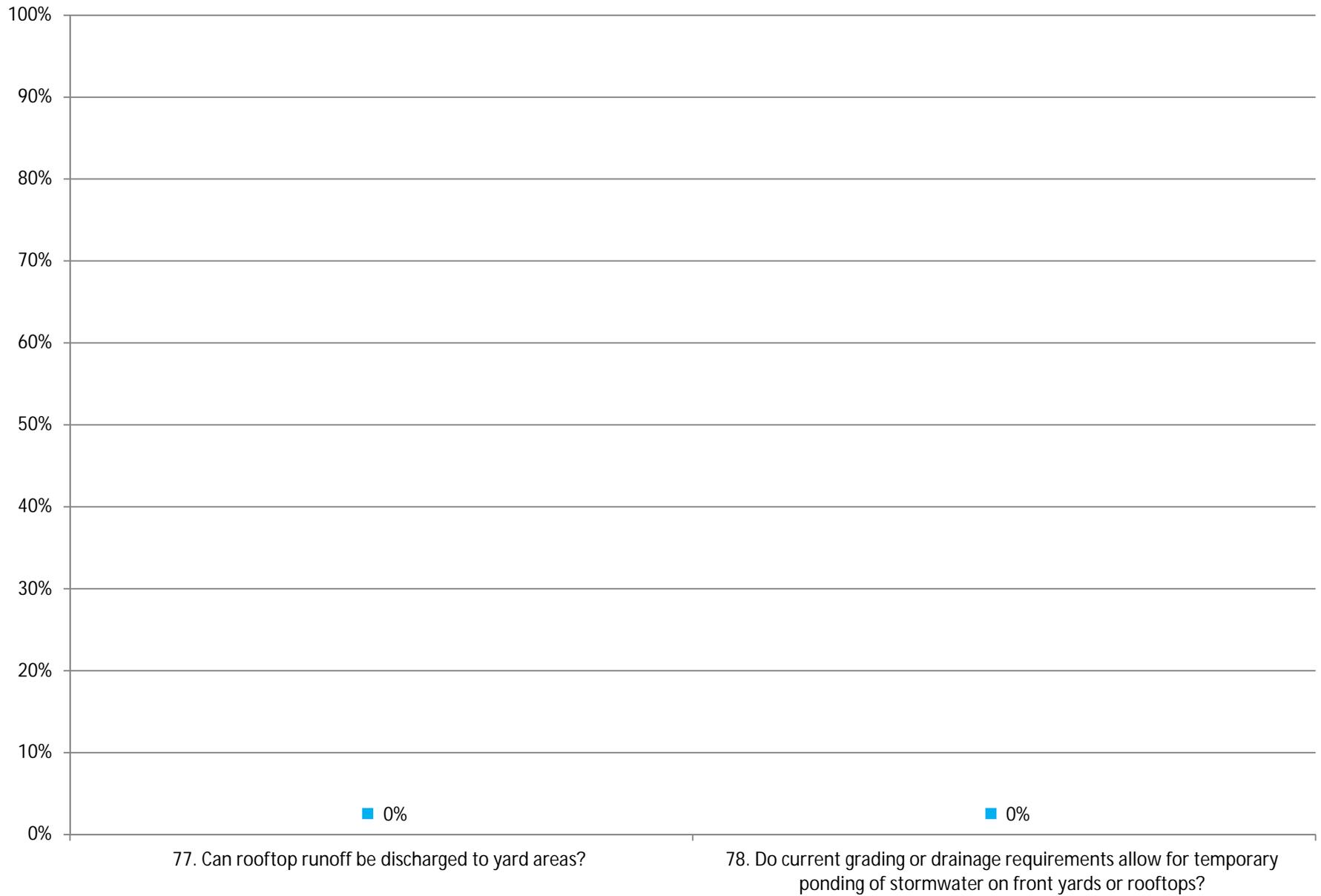
### Category III: Design Elements for Stormwater Management



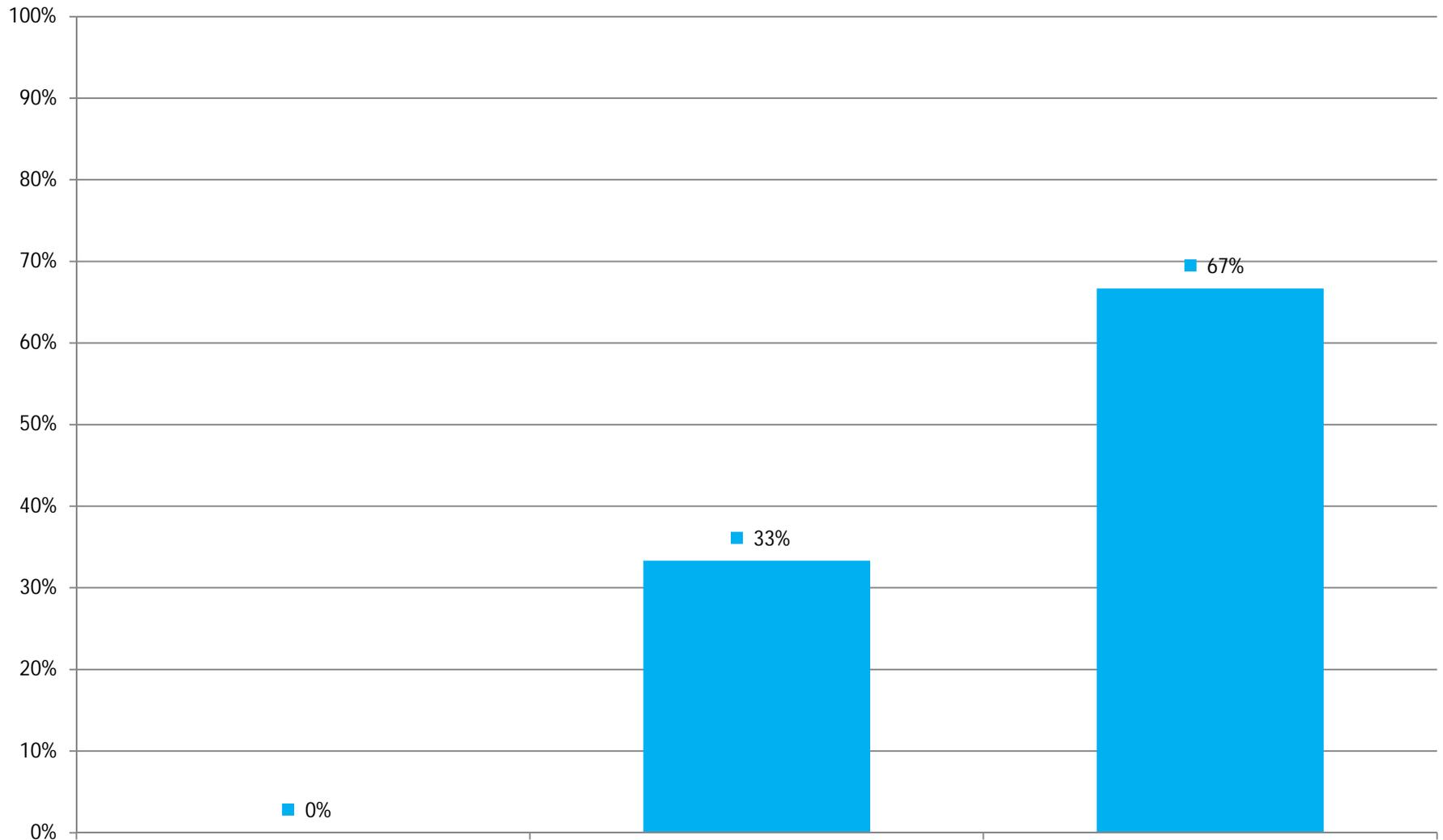
# Vegetated Open Channels



# Rooftop Runoff



# Infiltration

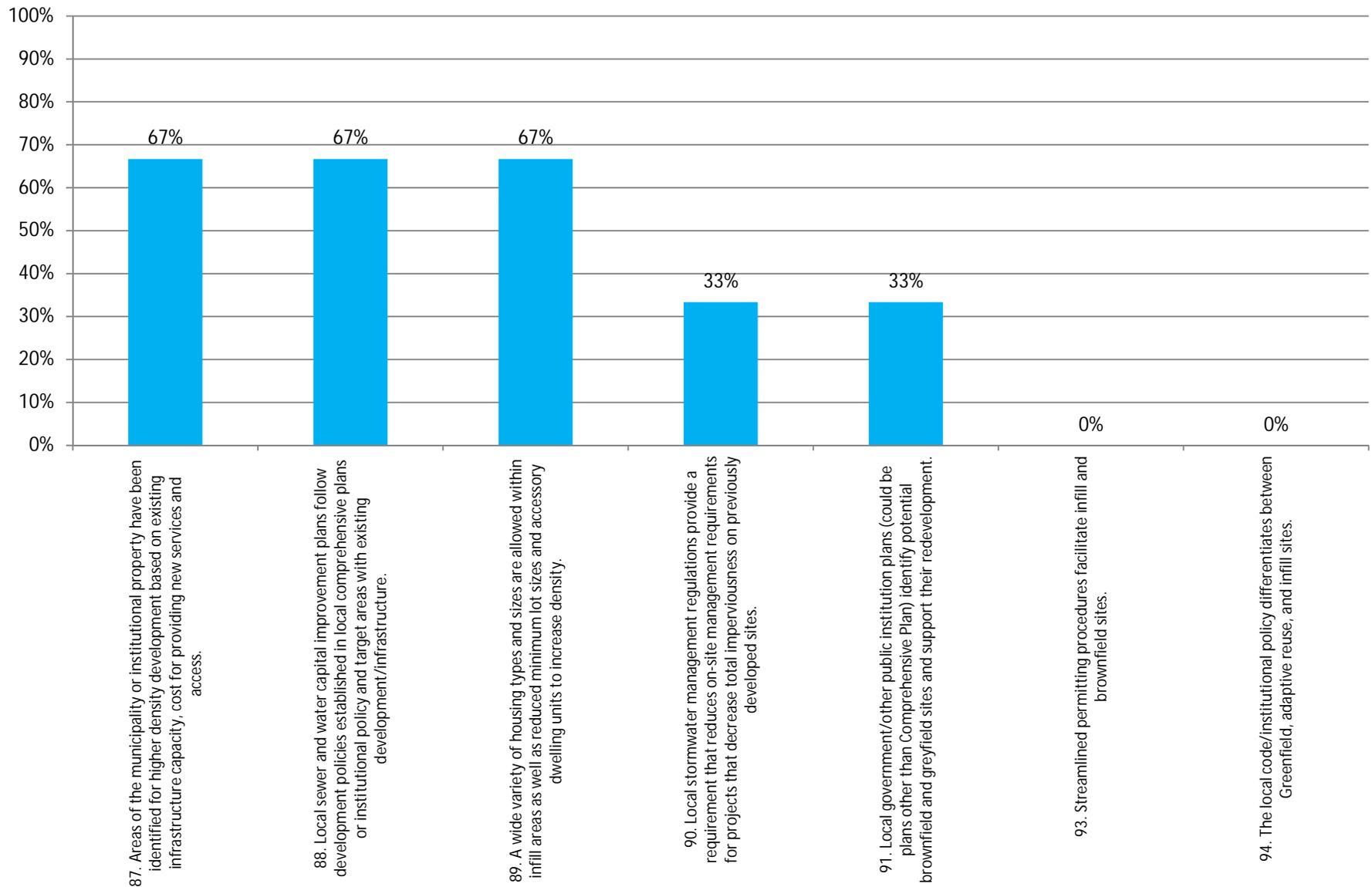


79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns

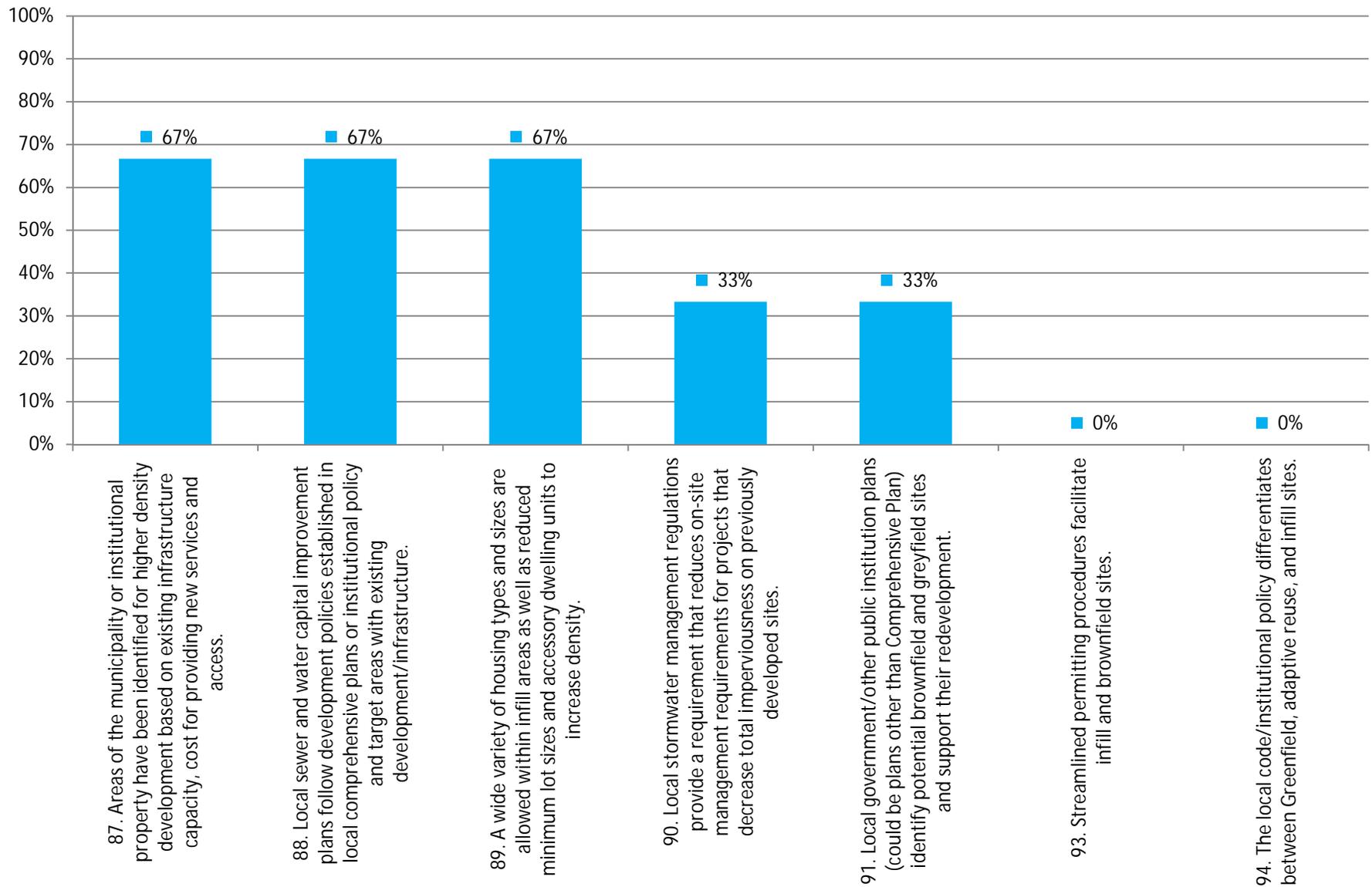
80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.

81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.

## Category IV: Promotion of efficient, compact development patterns and infill

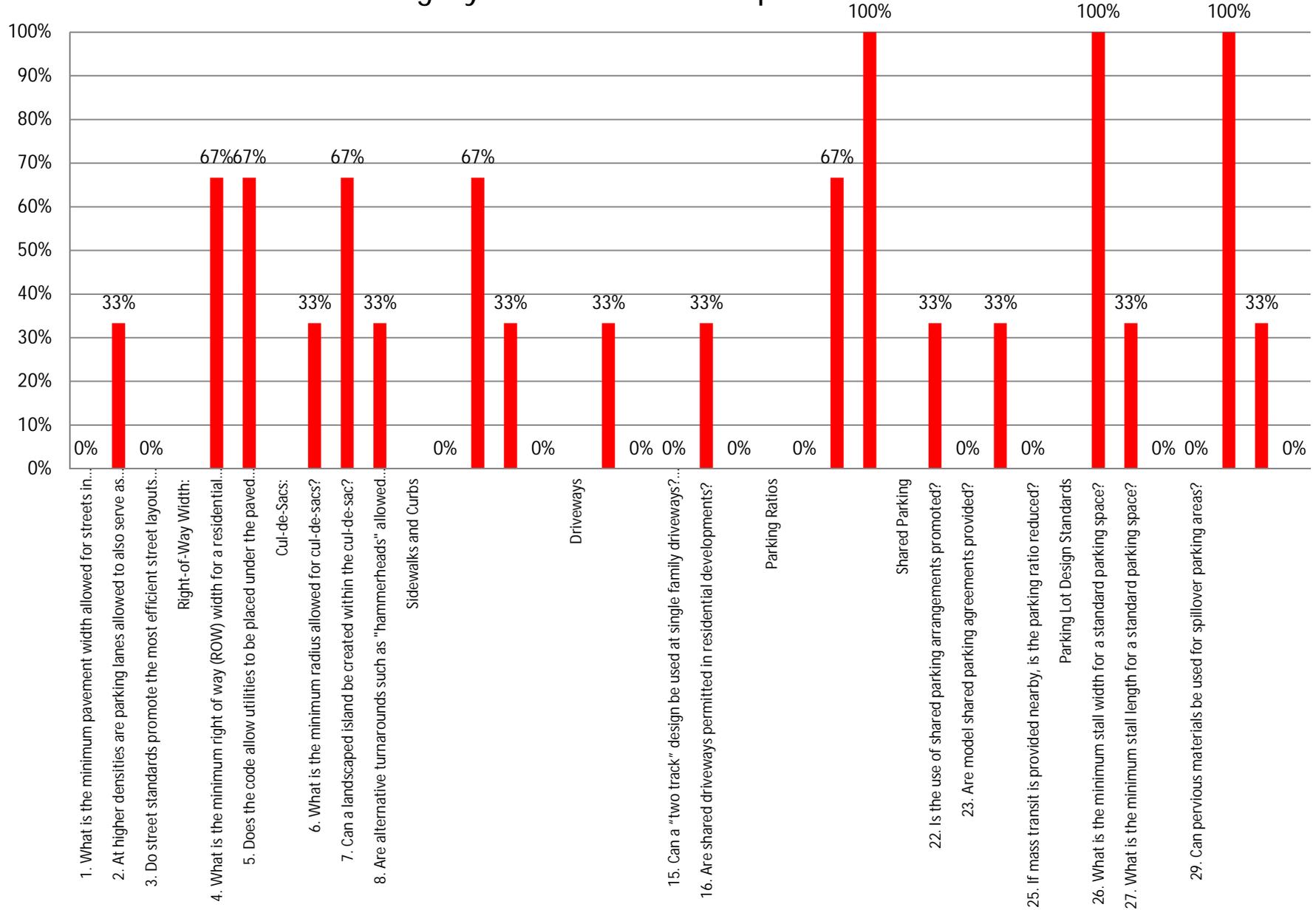


## Category IV: Promotion of efficient, compact development patterns and infill

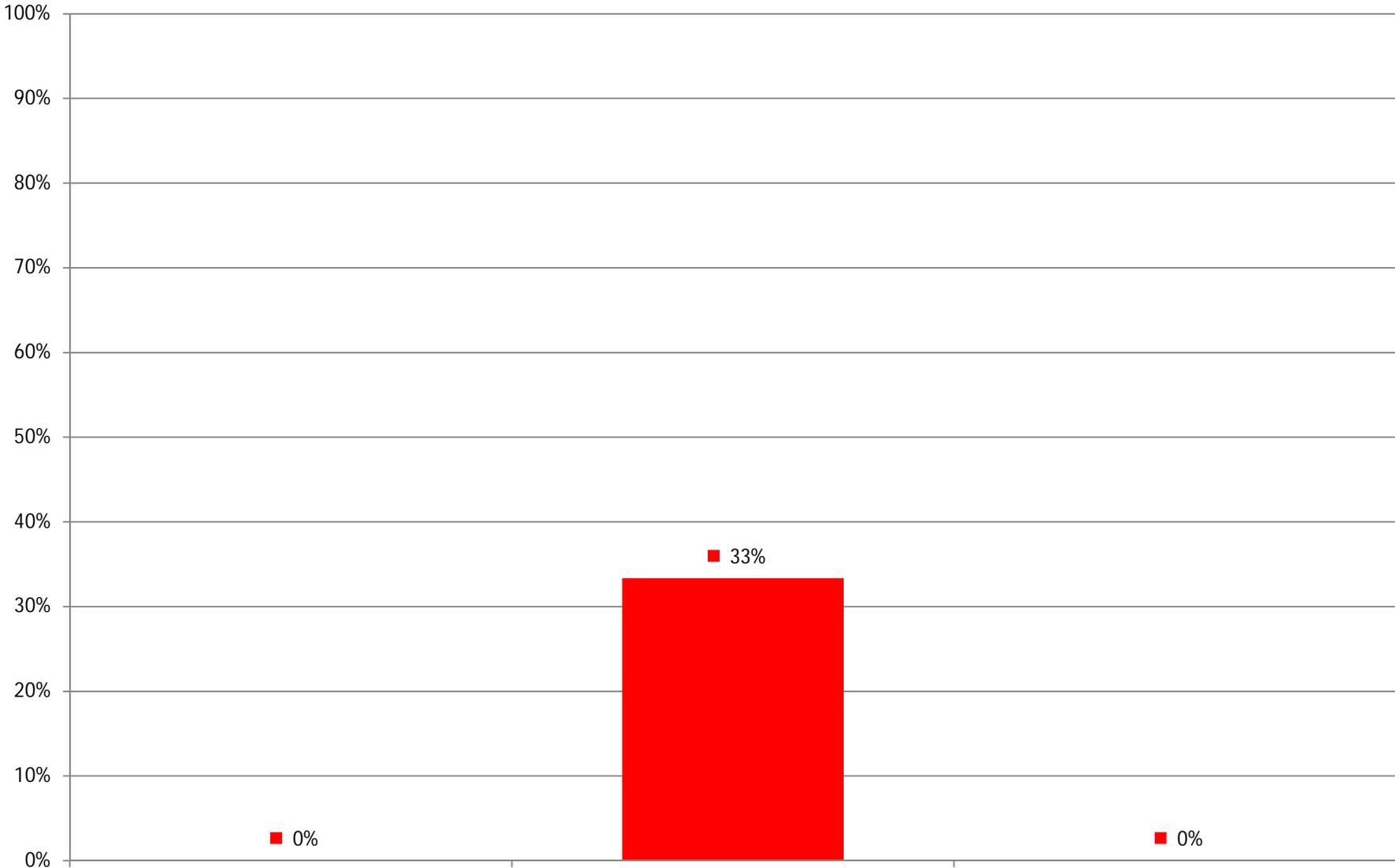


**Appendix H**  
**Towns Gap Analysis**

## Category I: Reduction of Impervious Cover

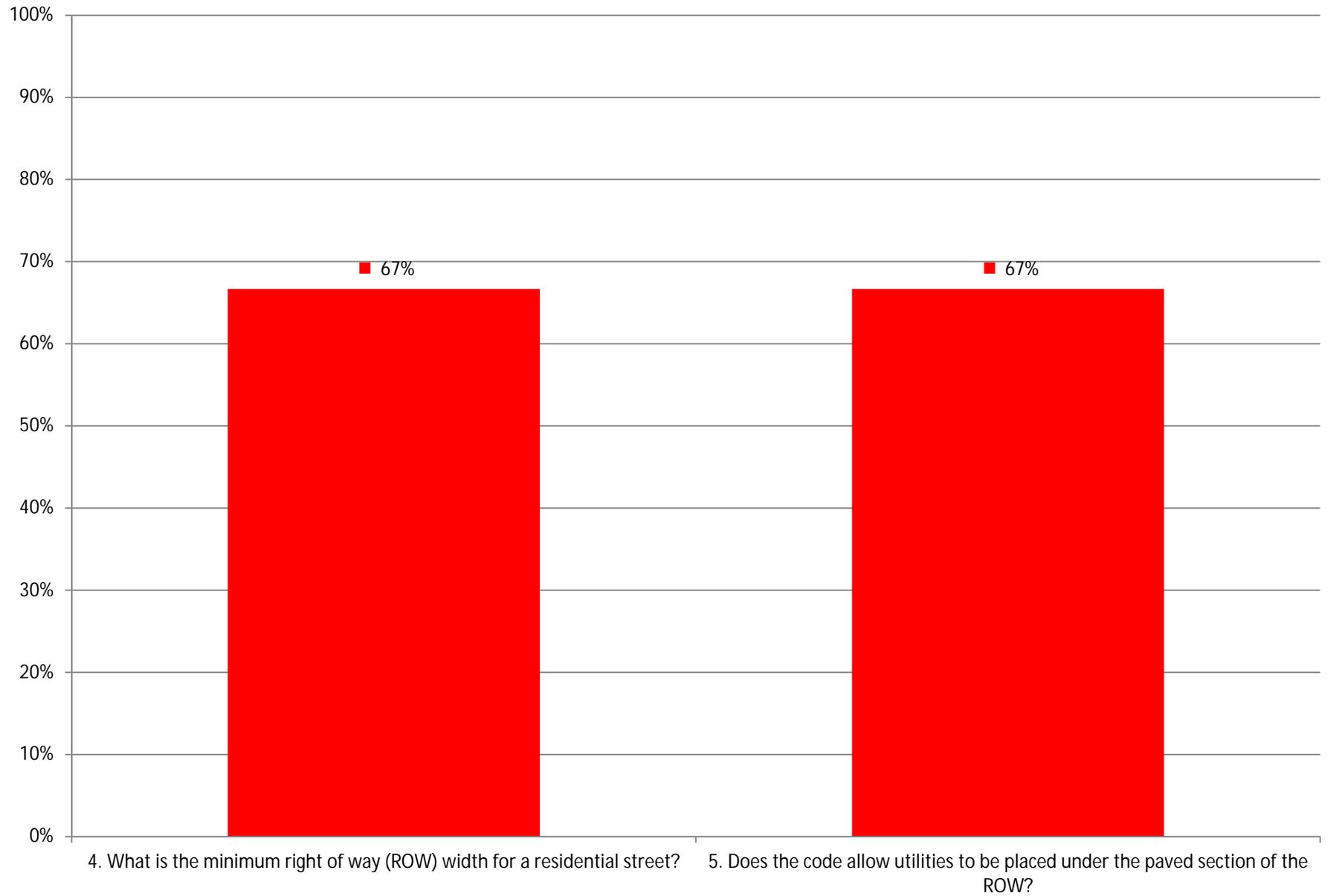


# Street width and length:

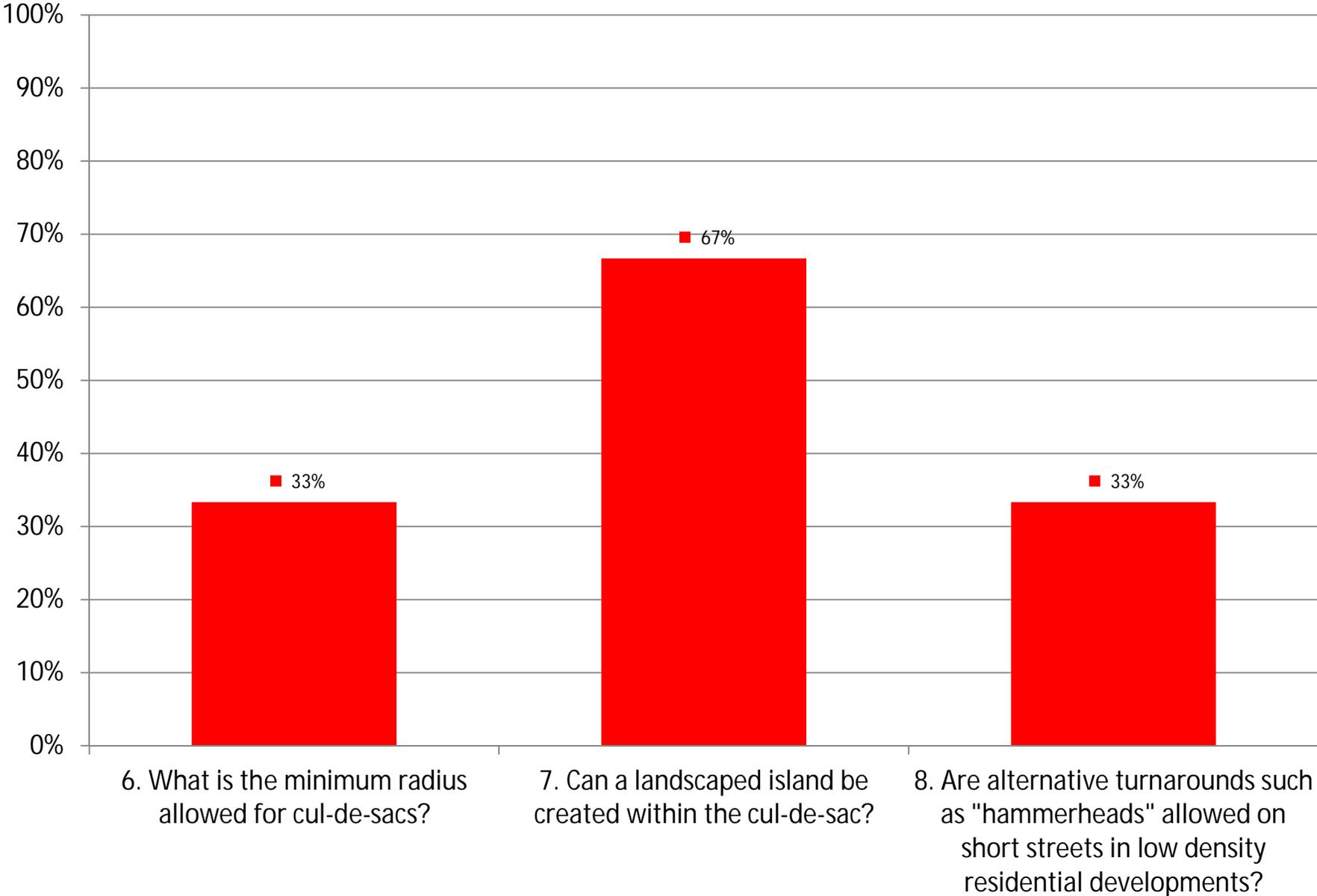


- 1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)?
- 2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?
- 3. Do street standards promote the most efficient street layouts that reduce overall street length?

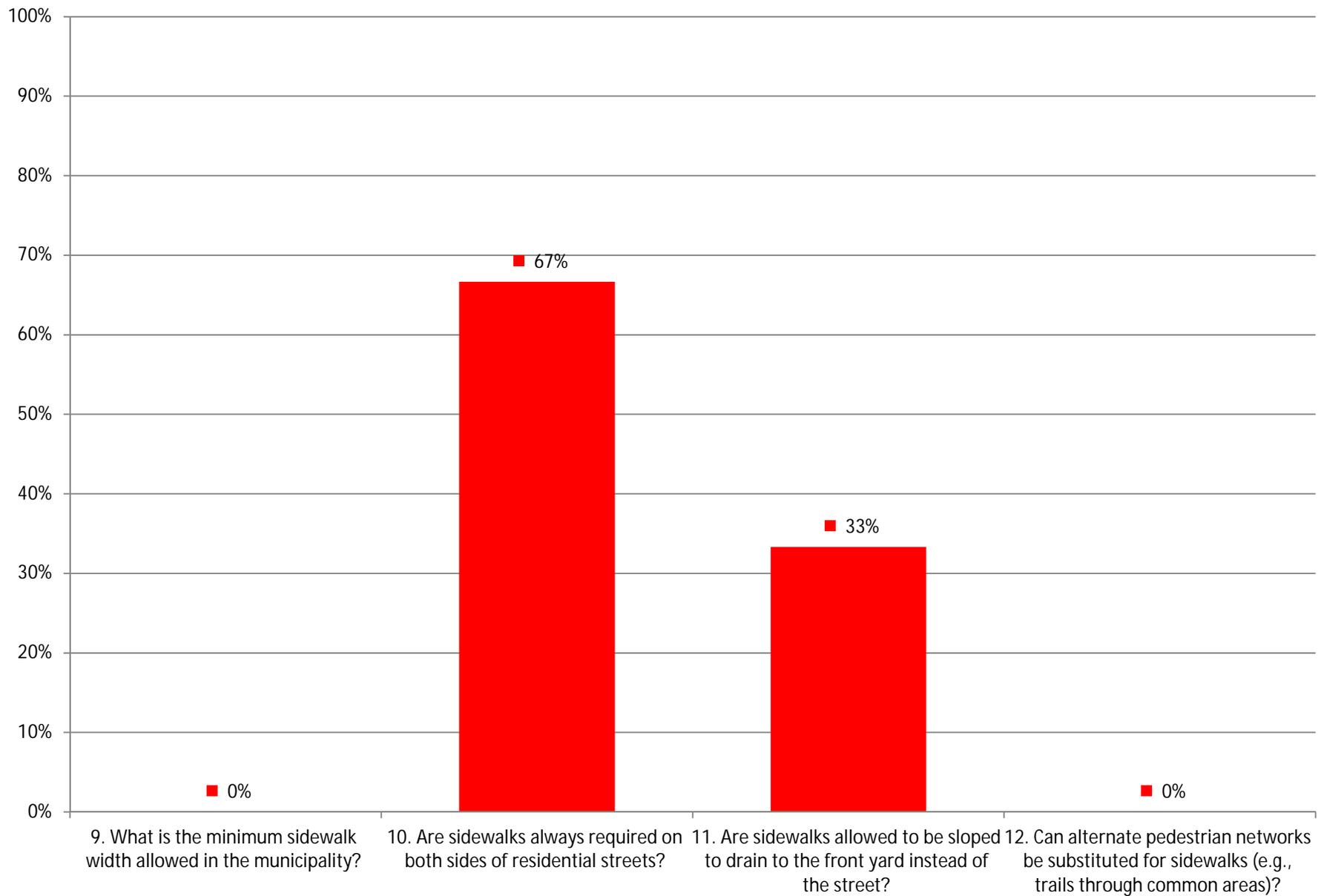
## Right-of-Way Width:



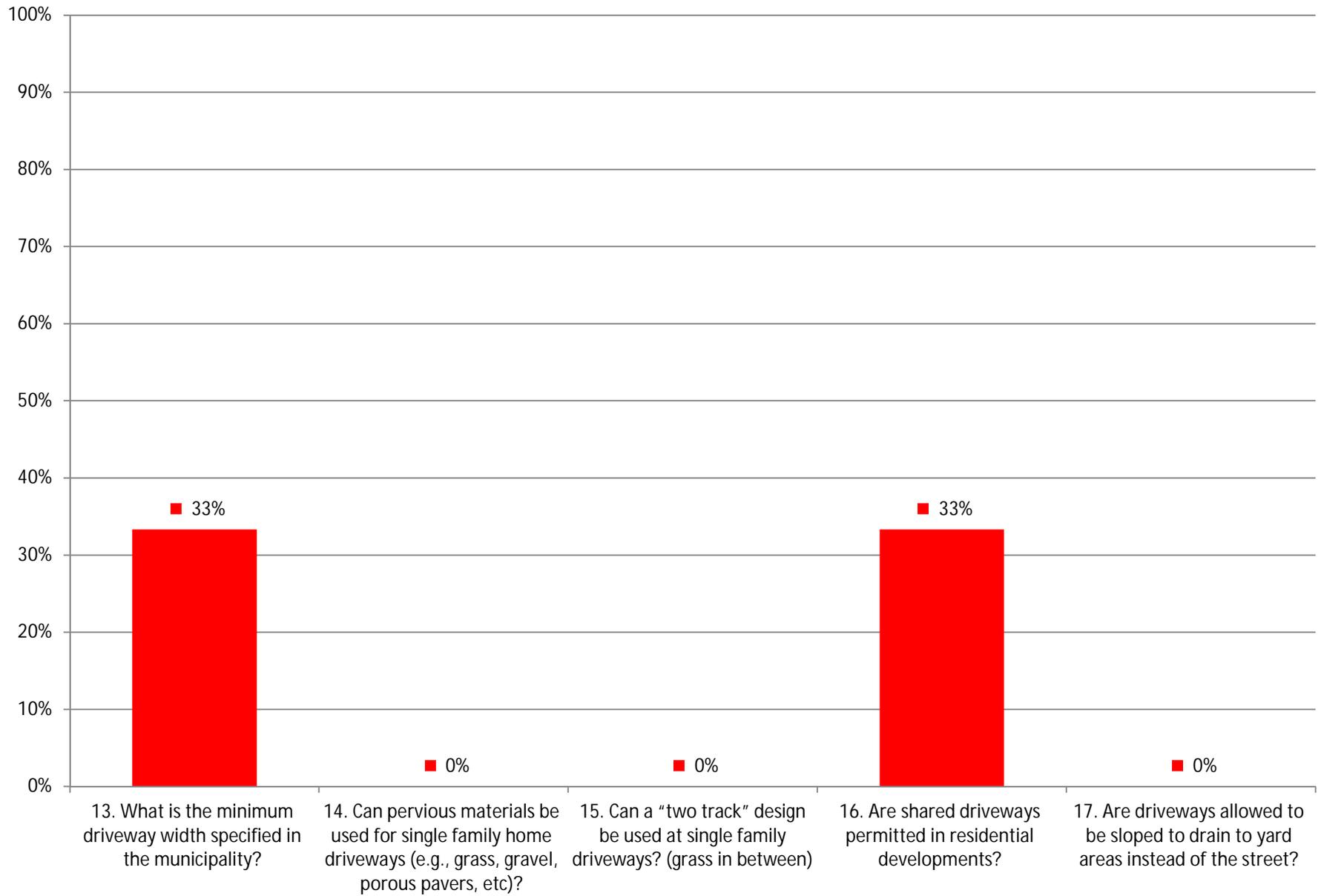
### Cul-de-Sacs:



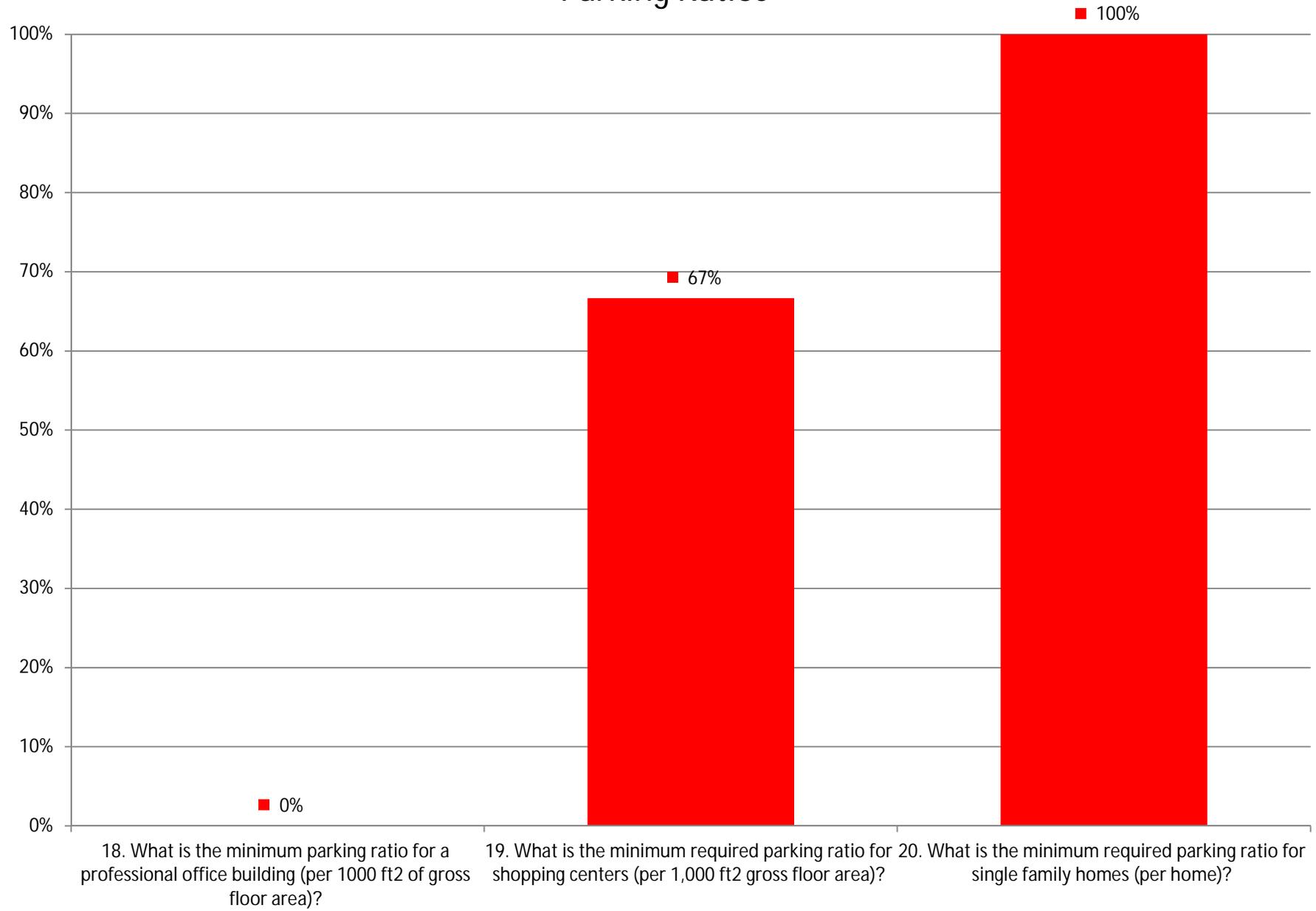
## Sidewalks and Curbs



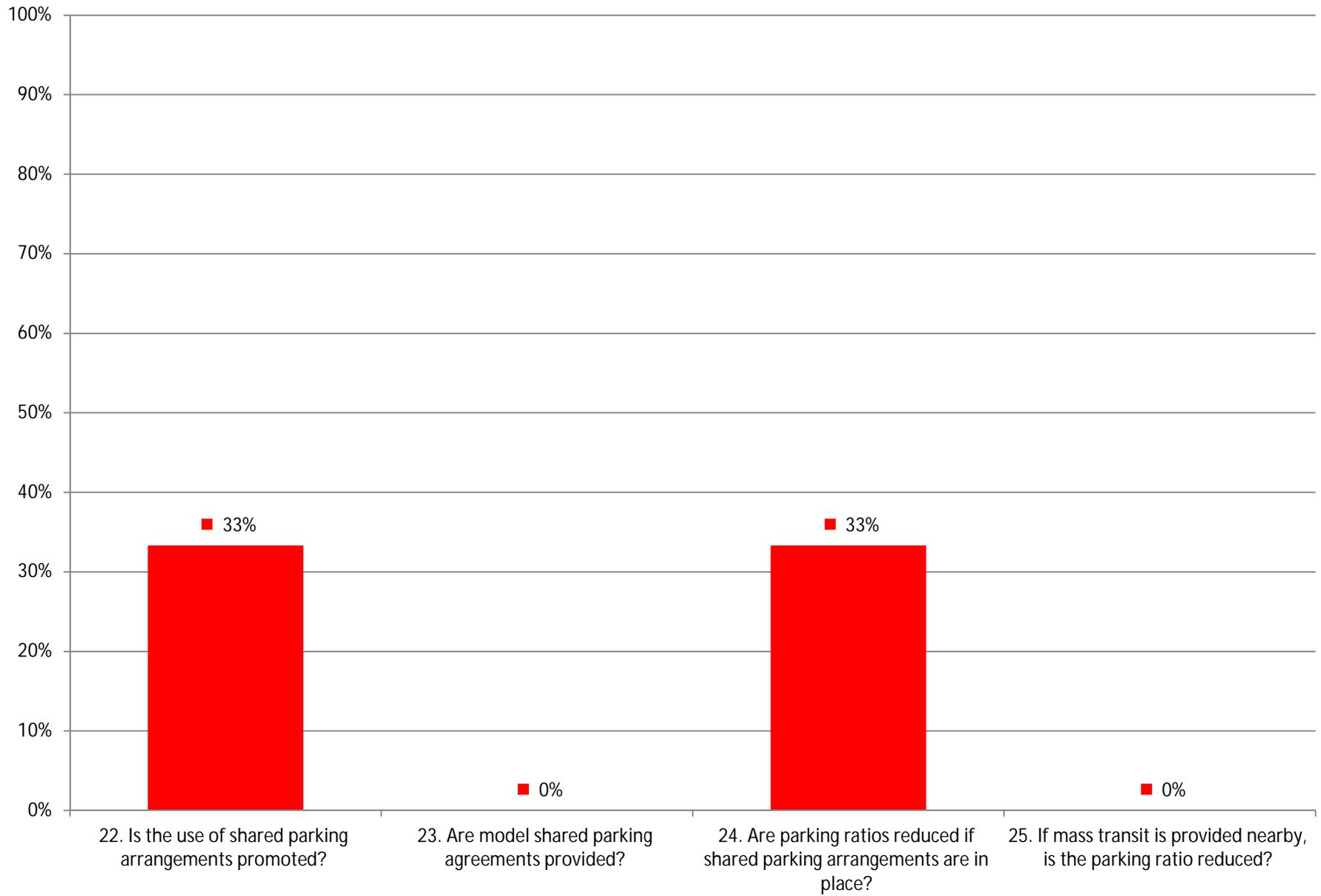
# Driveways



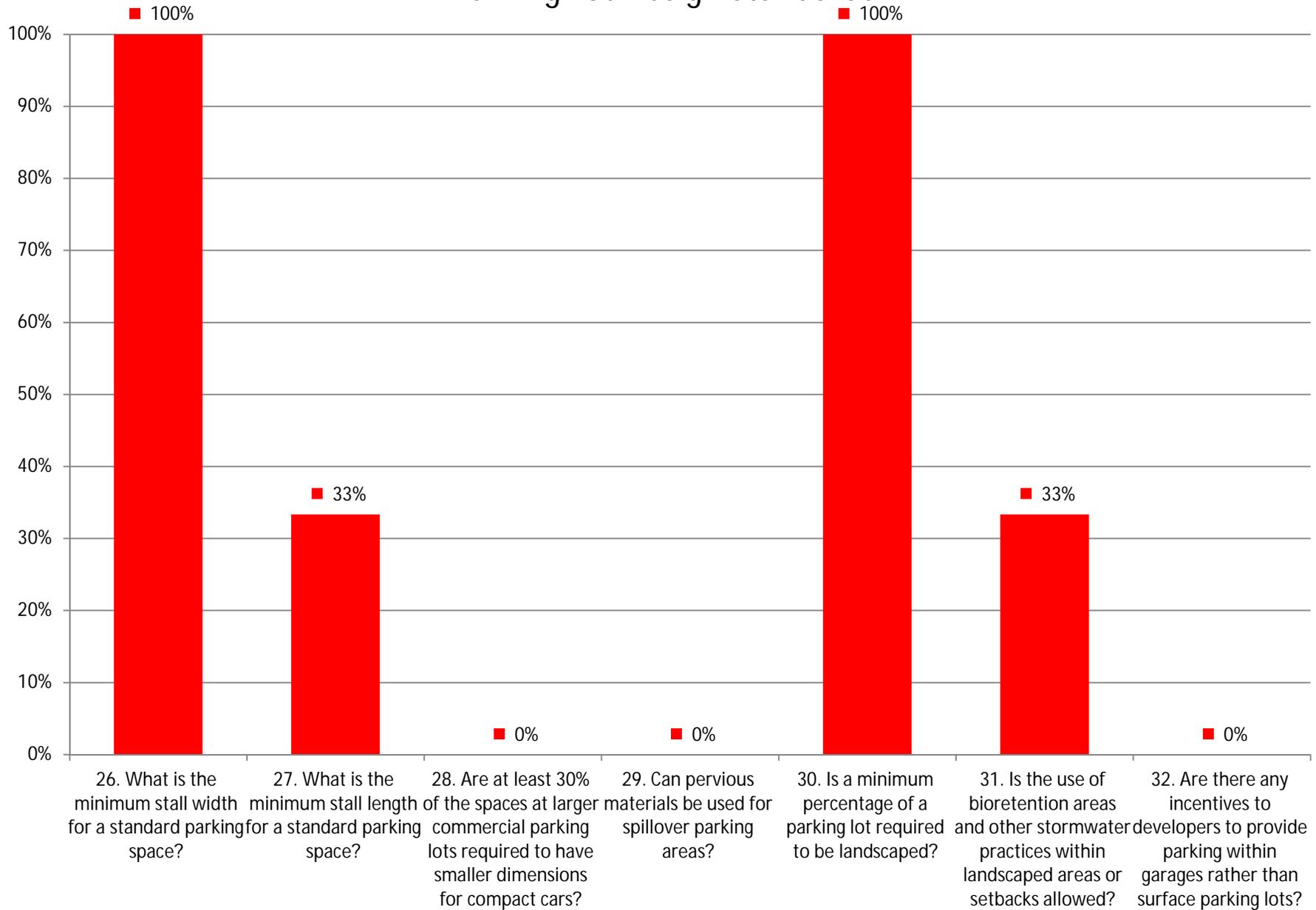
# Parking Ratios



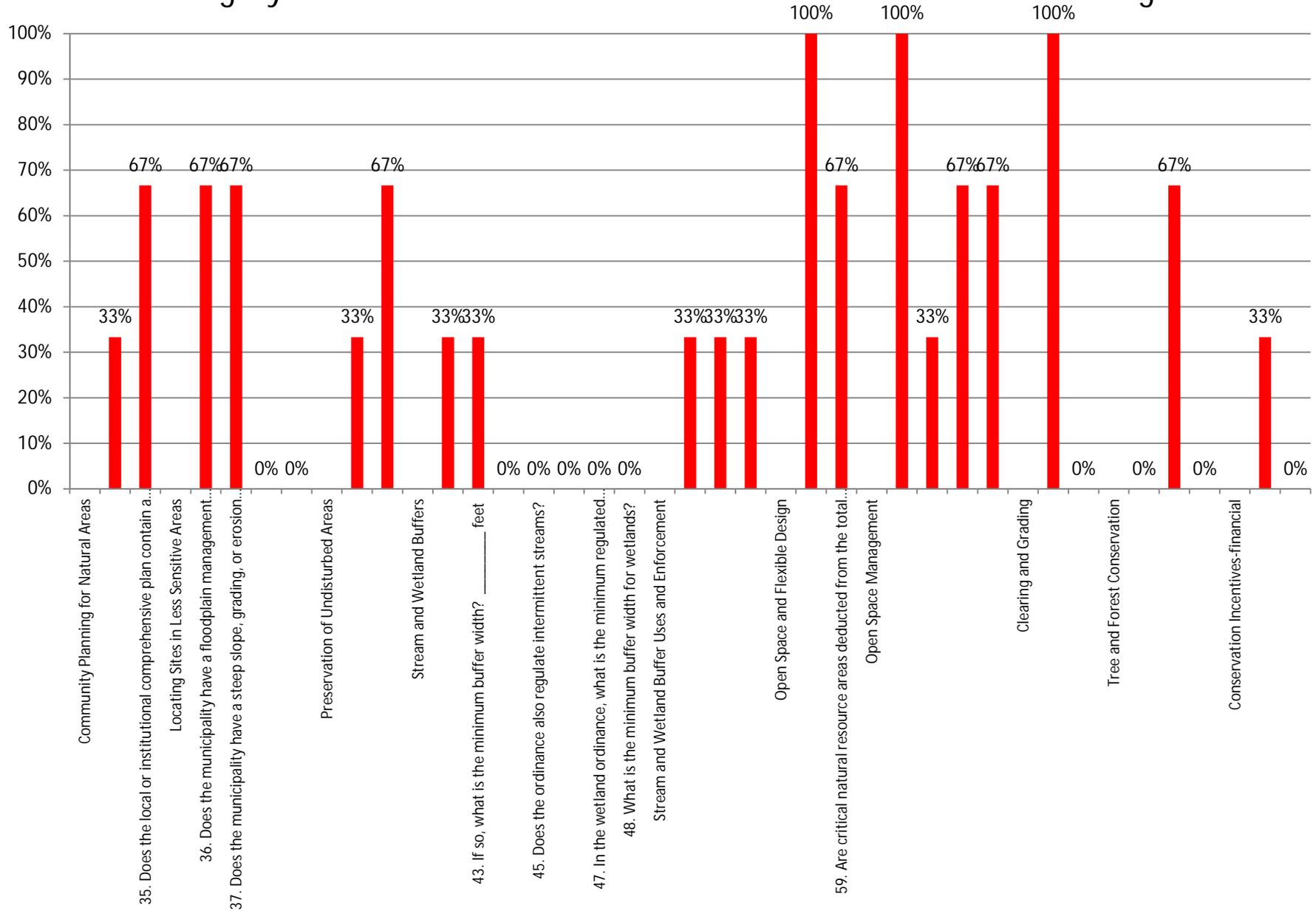
# Shared Parking



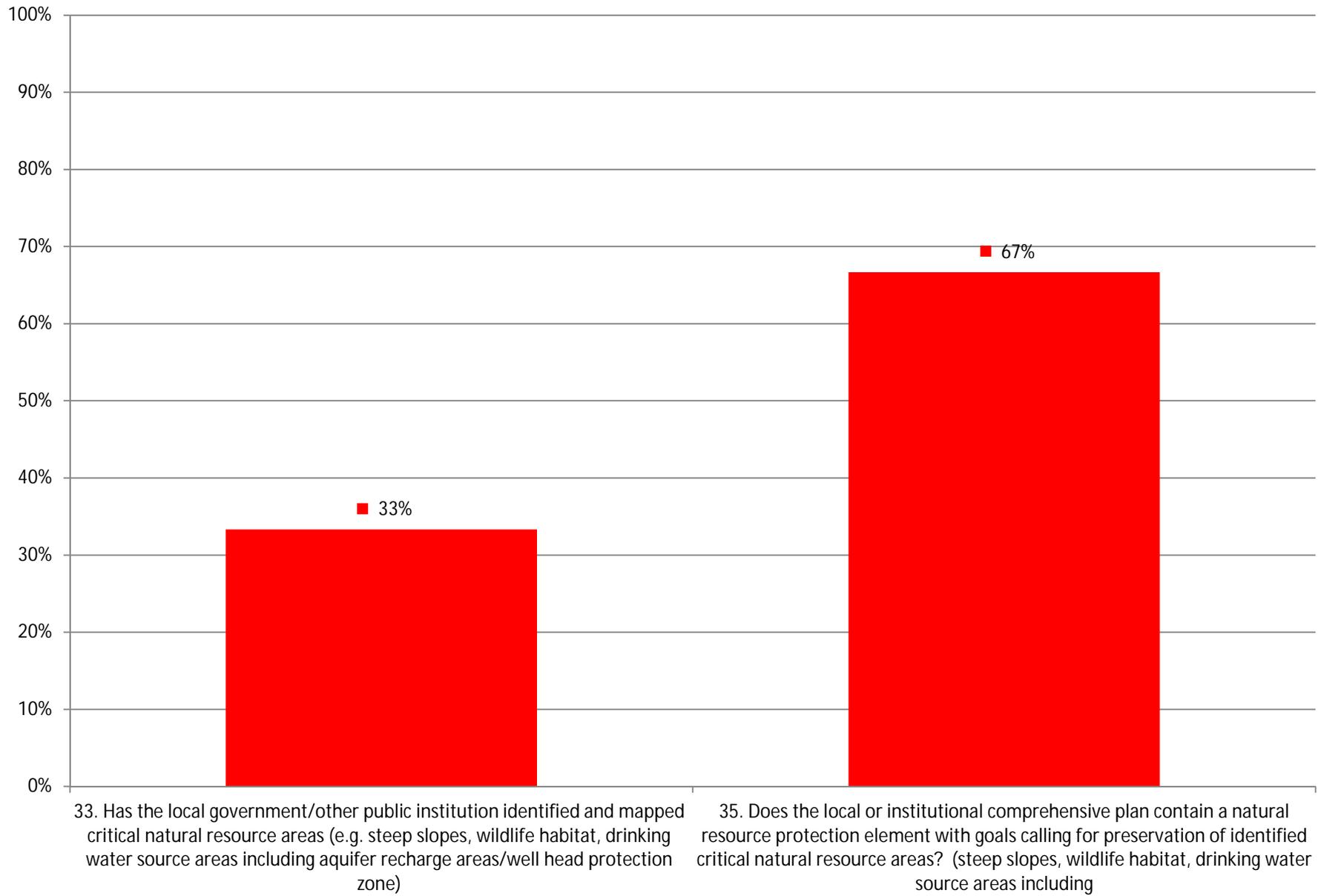
## Parking Lot Design Standards



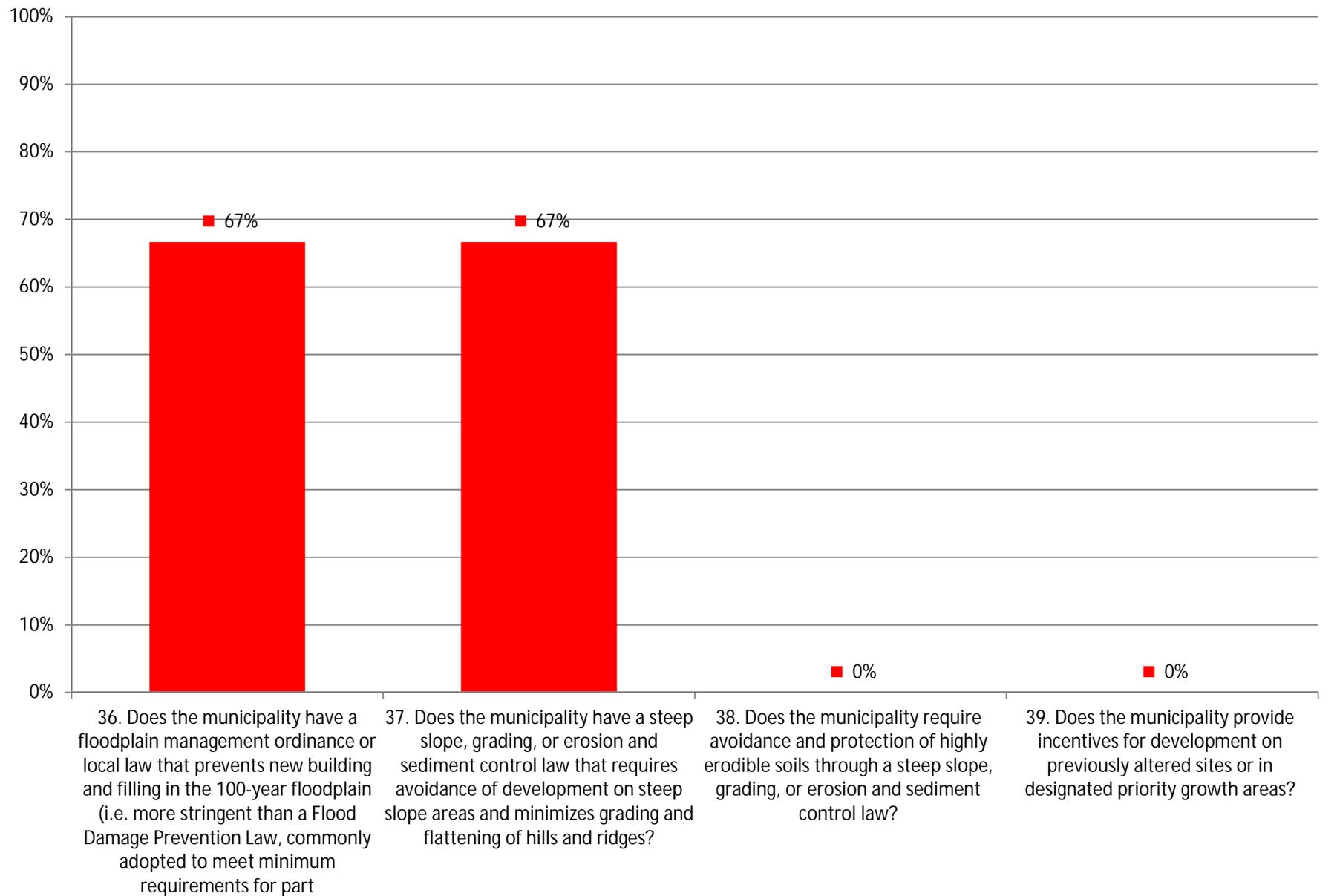
## Category II: Preservation of Natural Features and Conservation Design



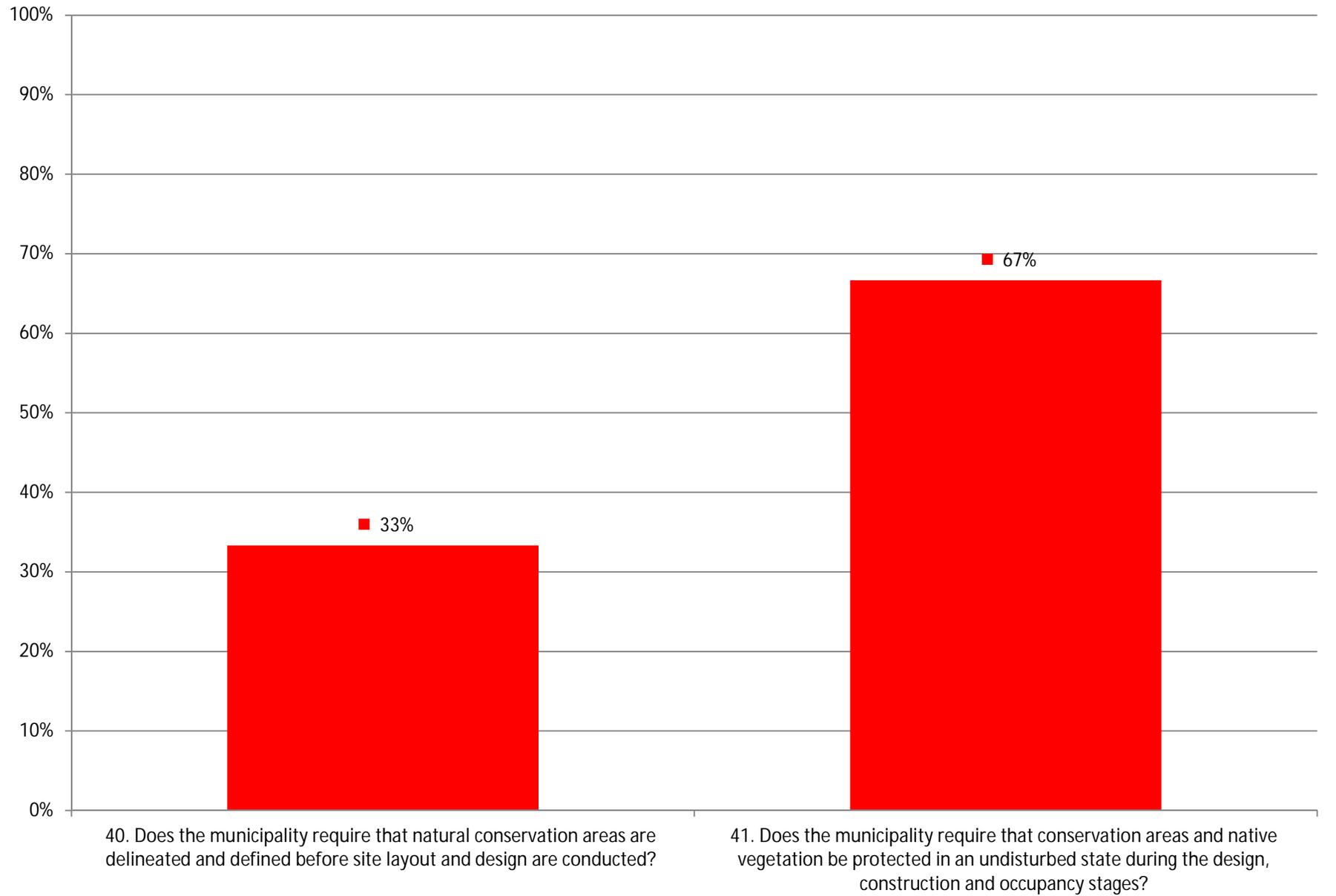
# Community Planning for Natural Areas



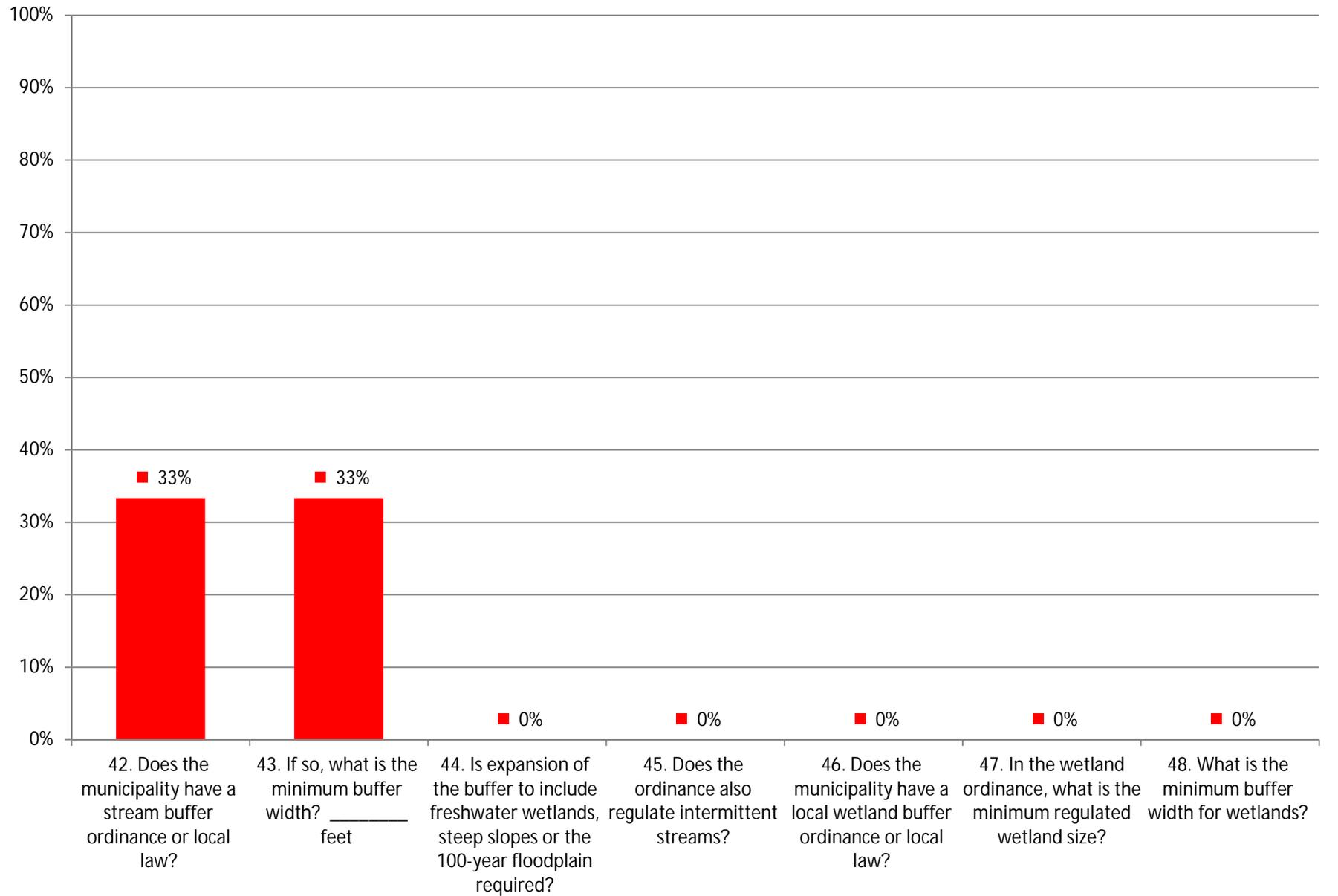
## Locating Sites in Less Sensitive Areas



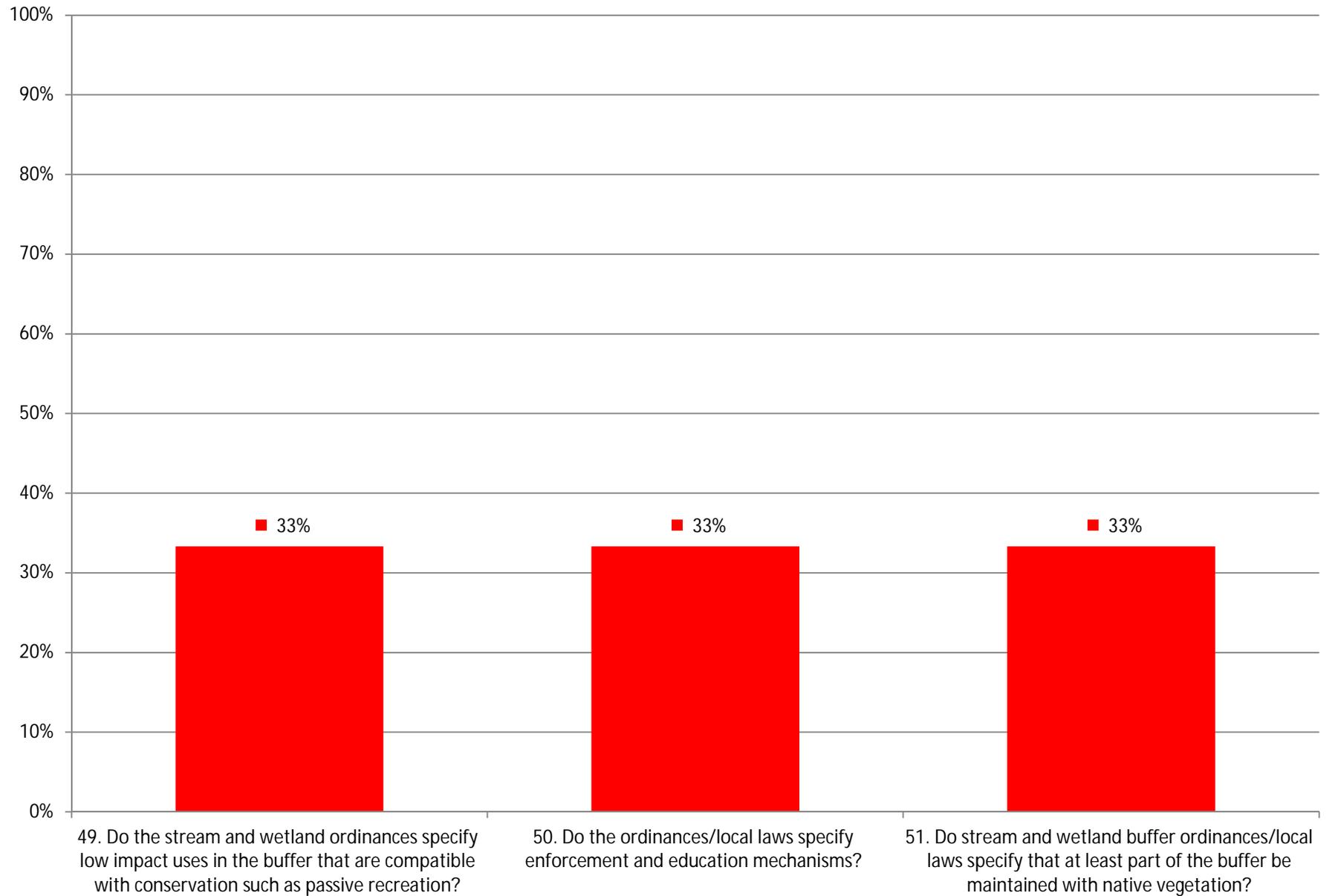
## Preservation of Undisturbed Areas



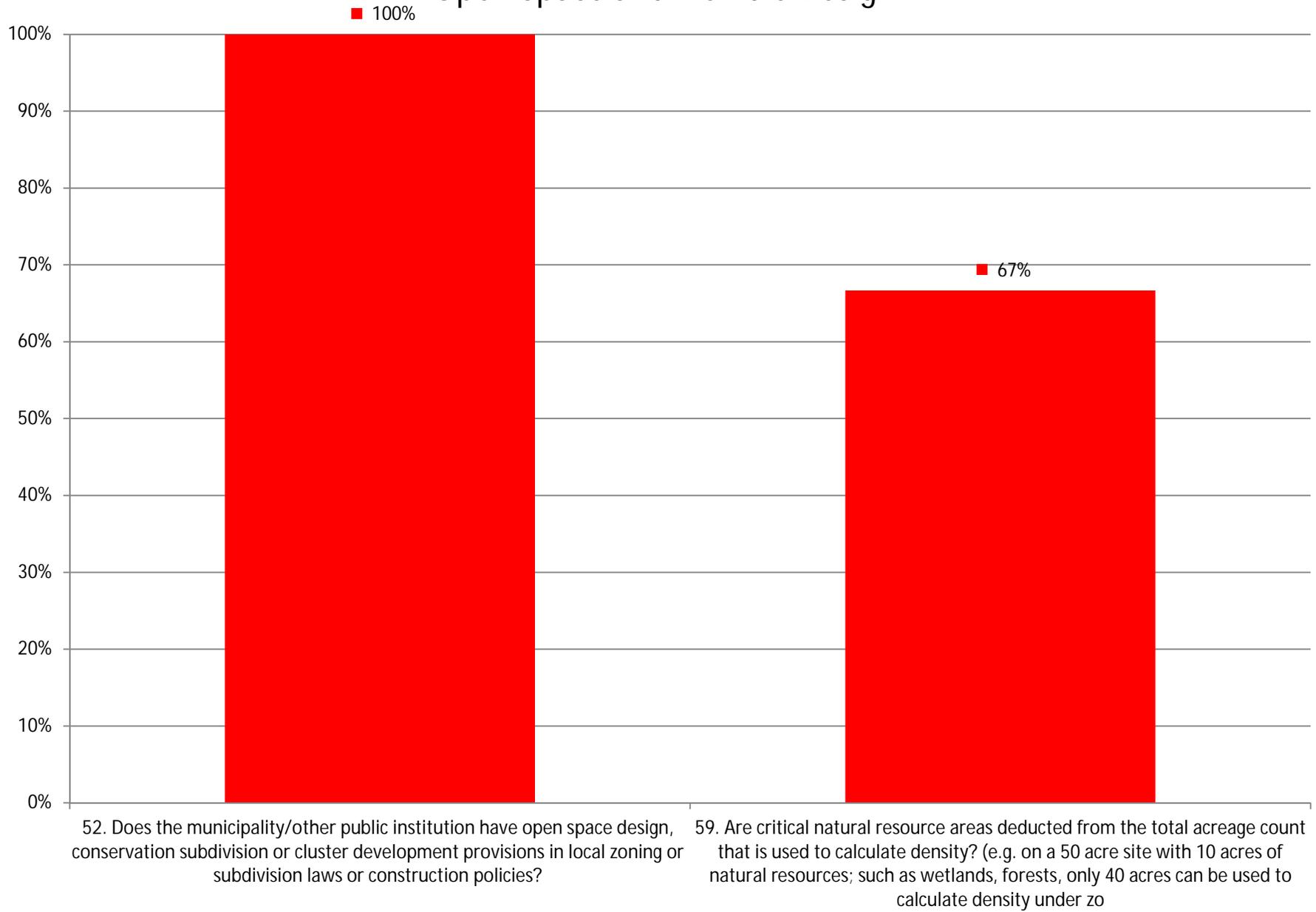
## Stream and Wetland Buffers



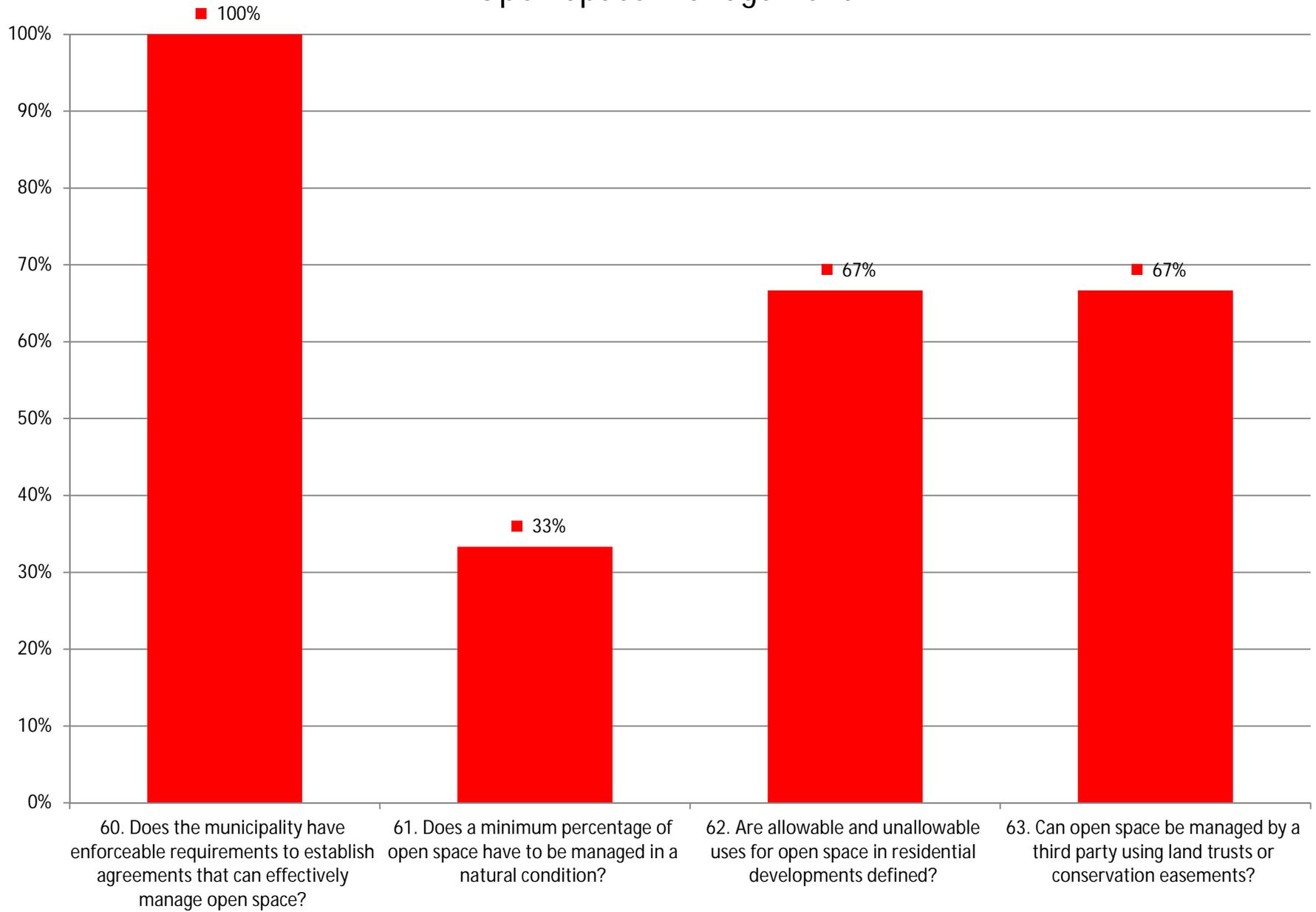
## Stream and Wetland Buffer Uses and Enforcement



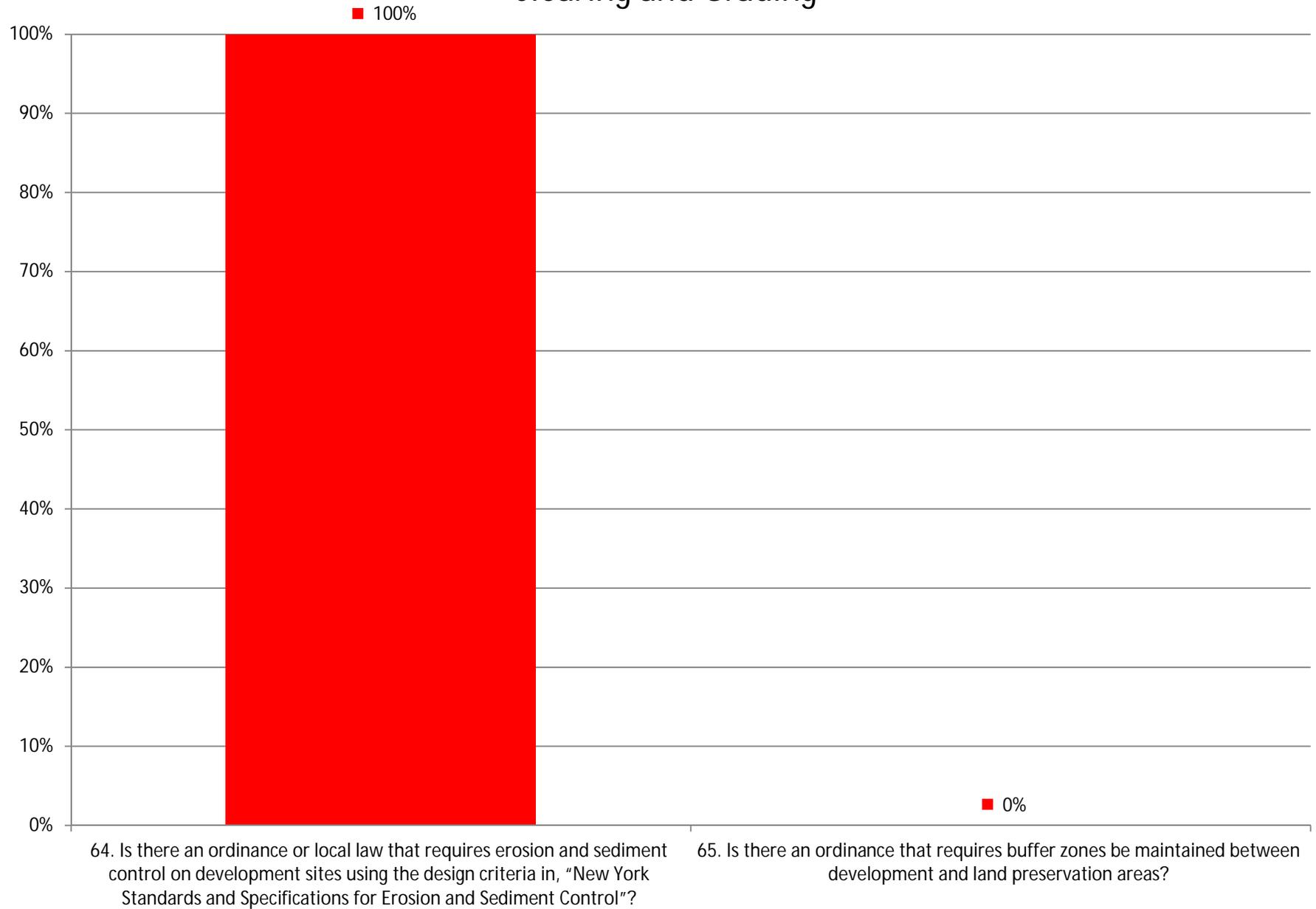
## Open Space and Flexible Design



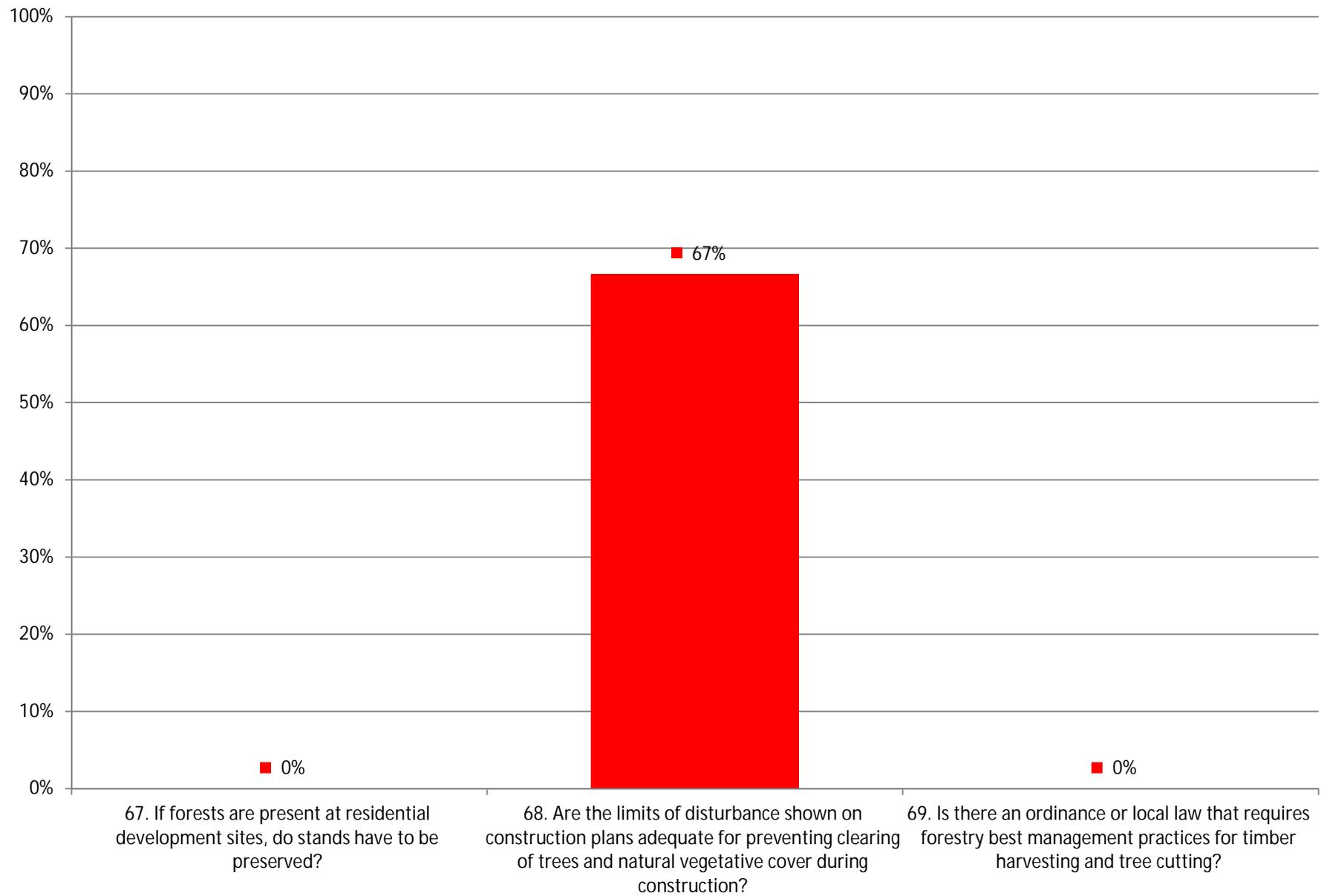
# Open Space Management



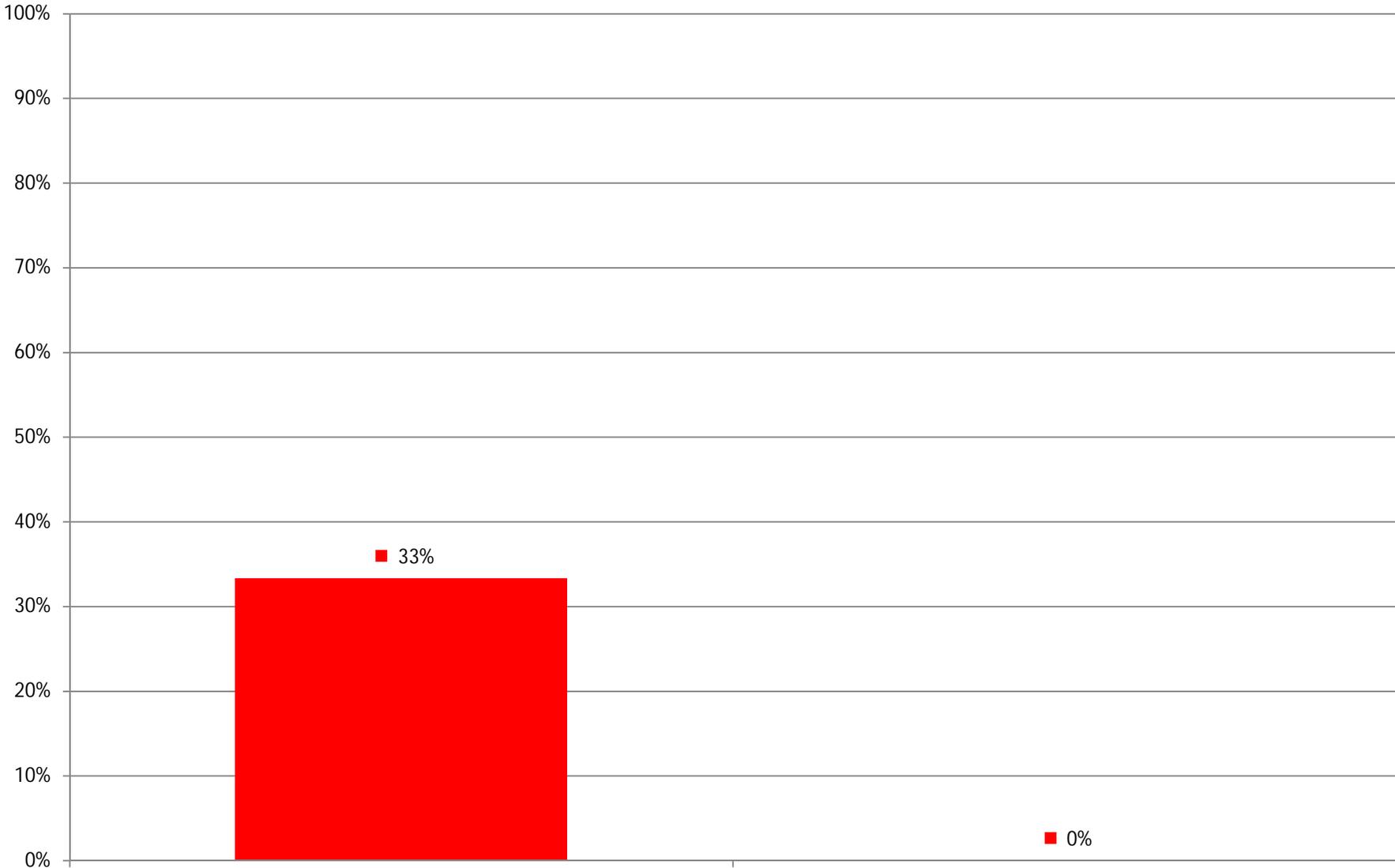
## Clearing and Grading



# Tree and Forest Conservation



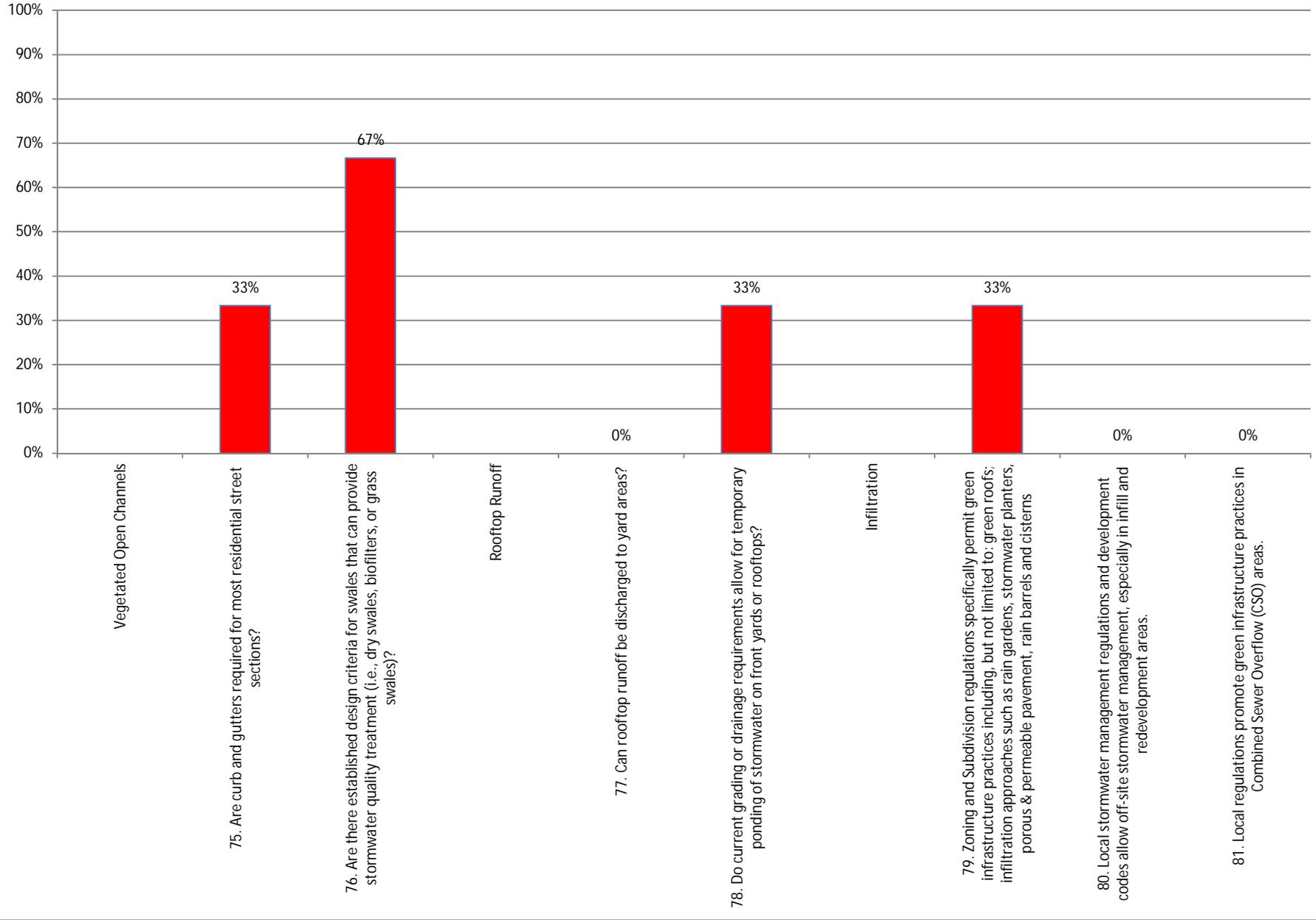
# Conservation Incentives-financial



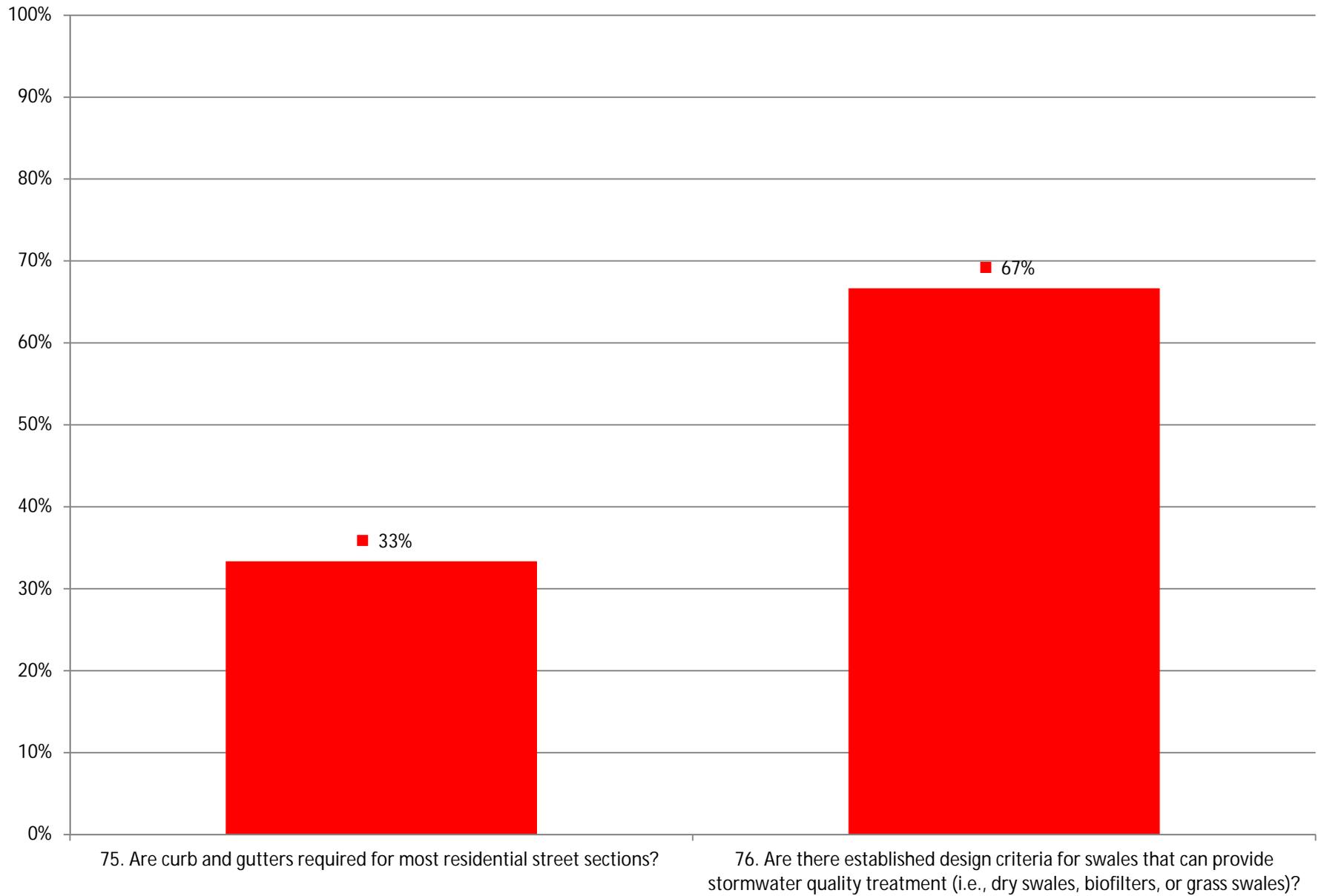
70. Does the municipality have a local open space fund through bonding, real estate transfer tax, or other funding mechanism to encourage open space protection?

71. Does the municipality use local, county, state, federal or private open space funding for purchase or transfer of development rights programs?

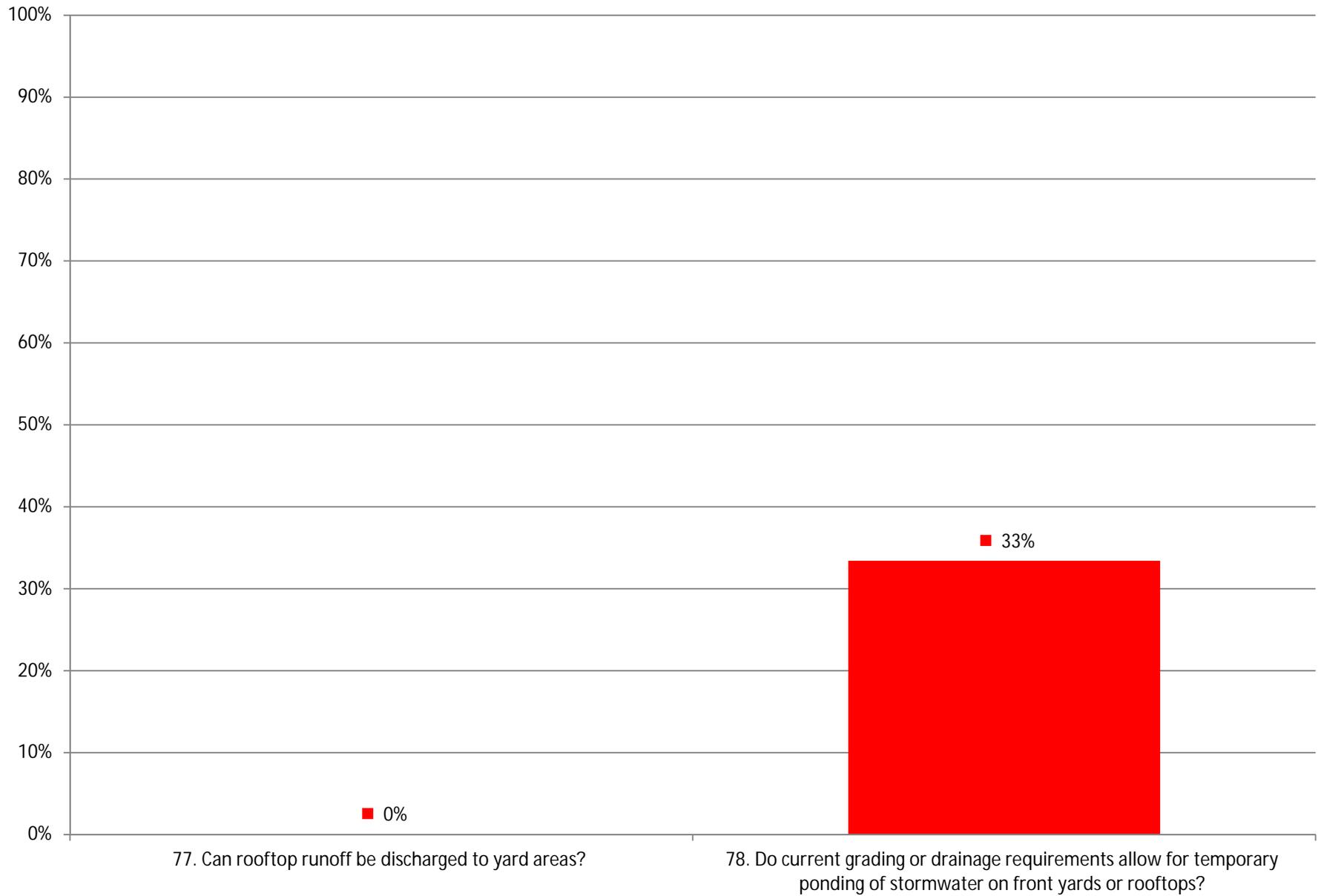
### Category III: Design Elements for Stormwater Management



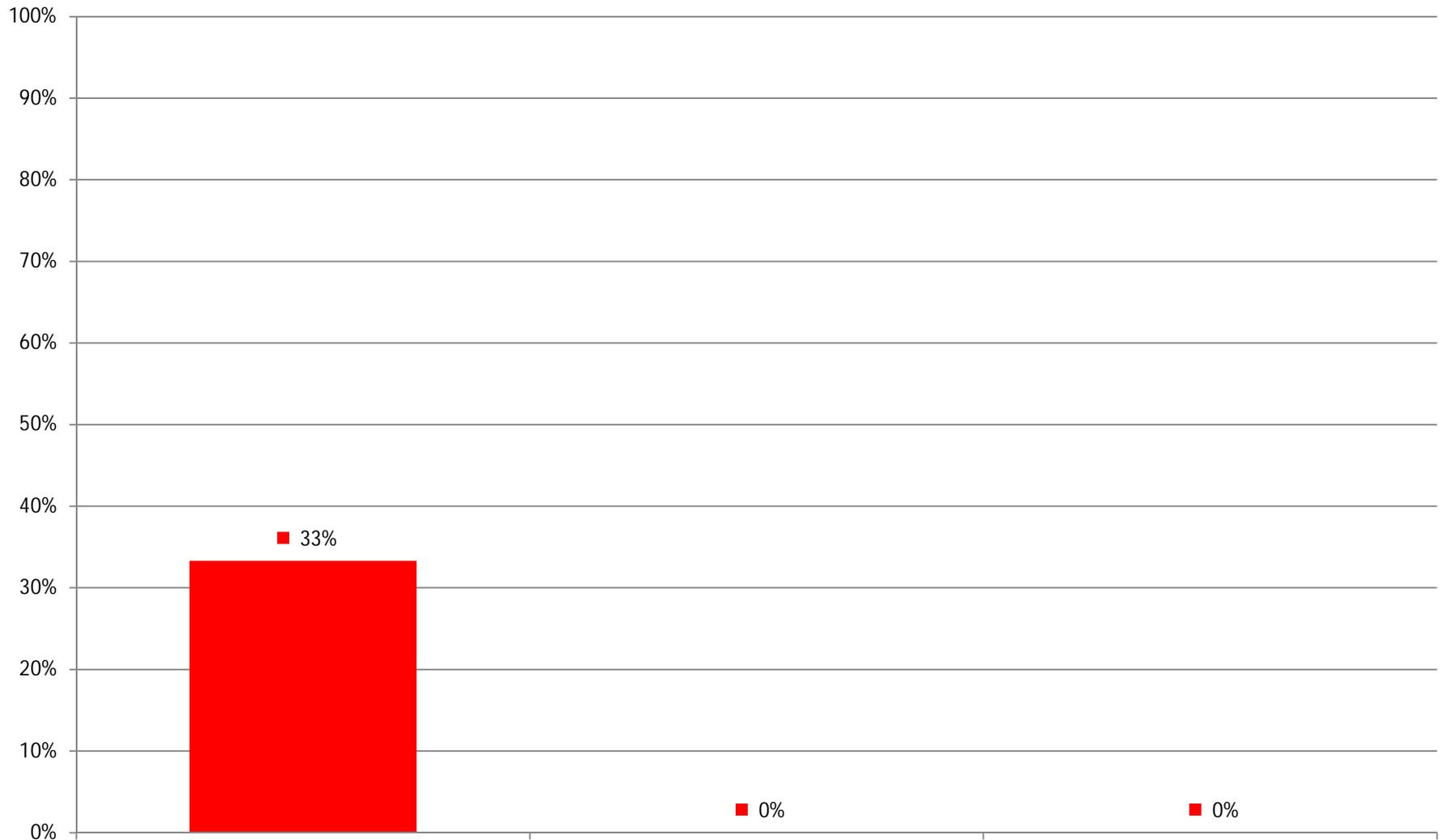
# Vegetated Open Channels



# Rooftop Runoff



# Infiltration

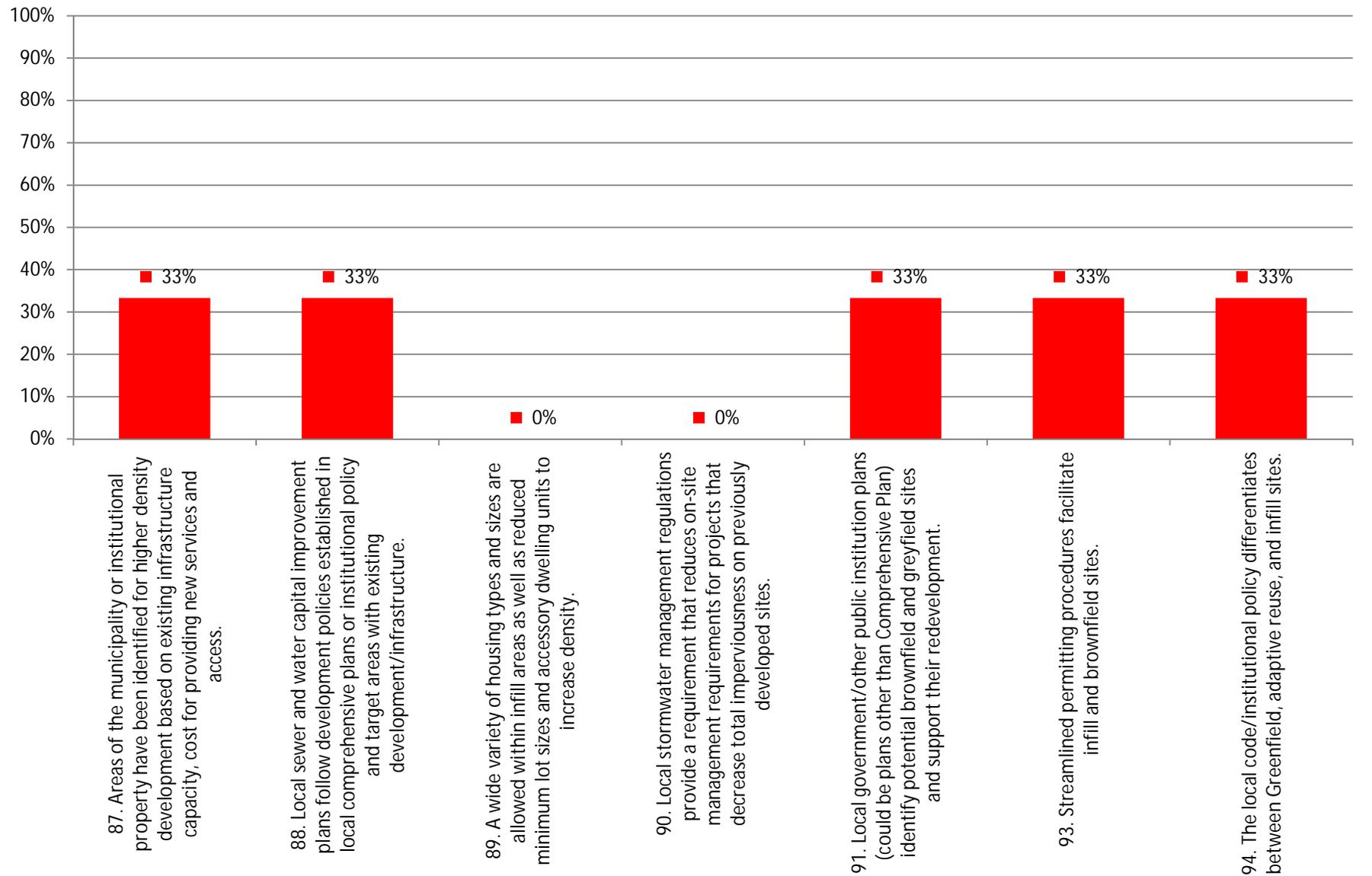


79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns

80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.

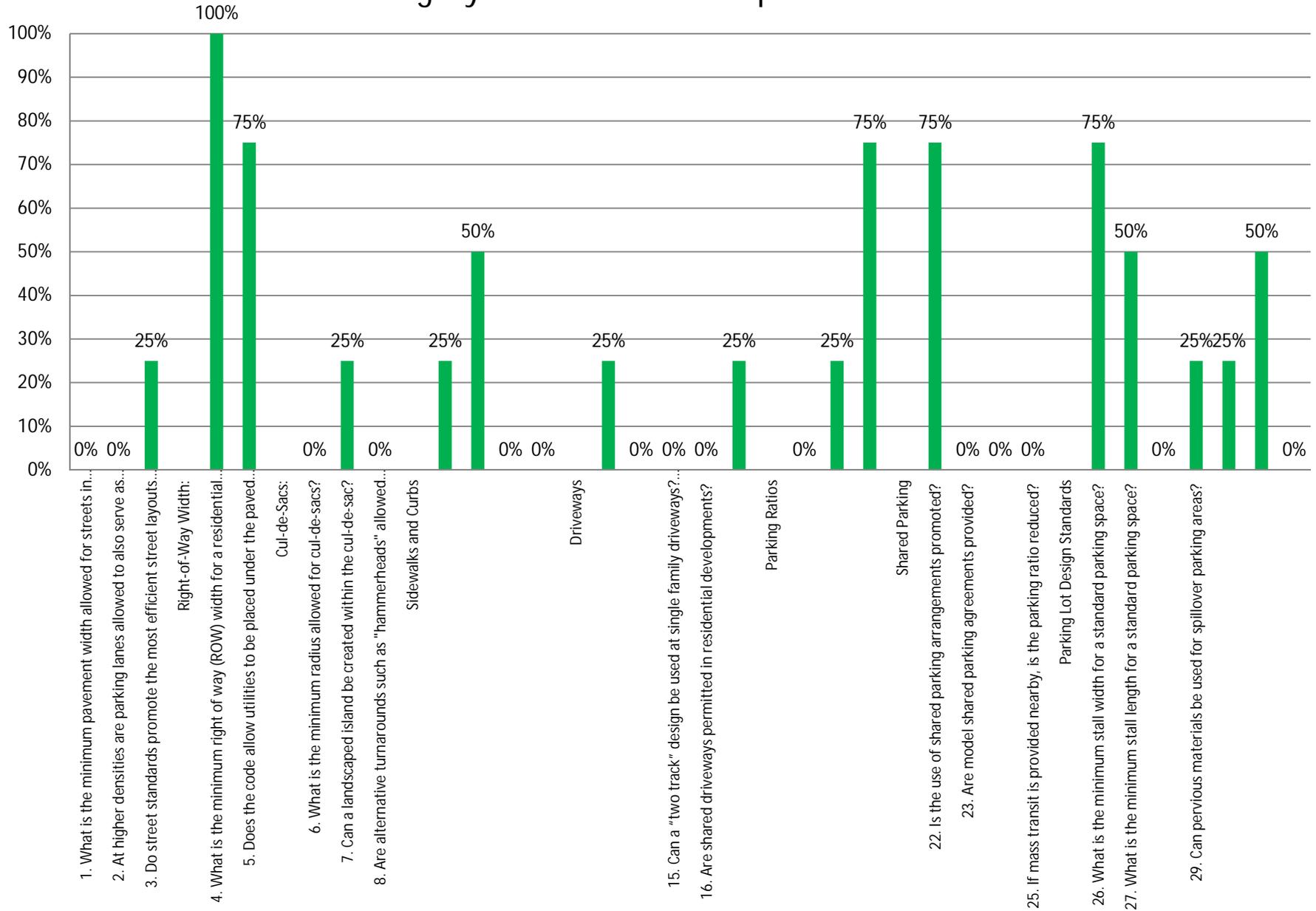
81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.

## Category IV: Promotion of efficient, compact development patterns and infill

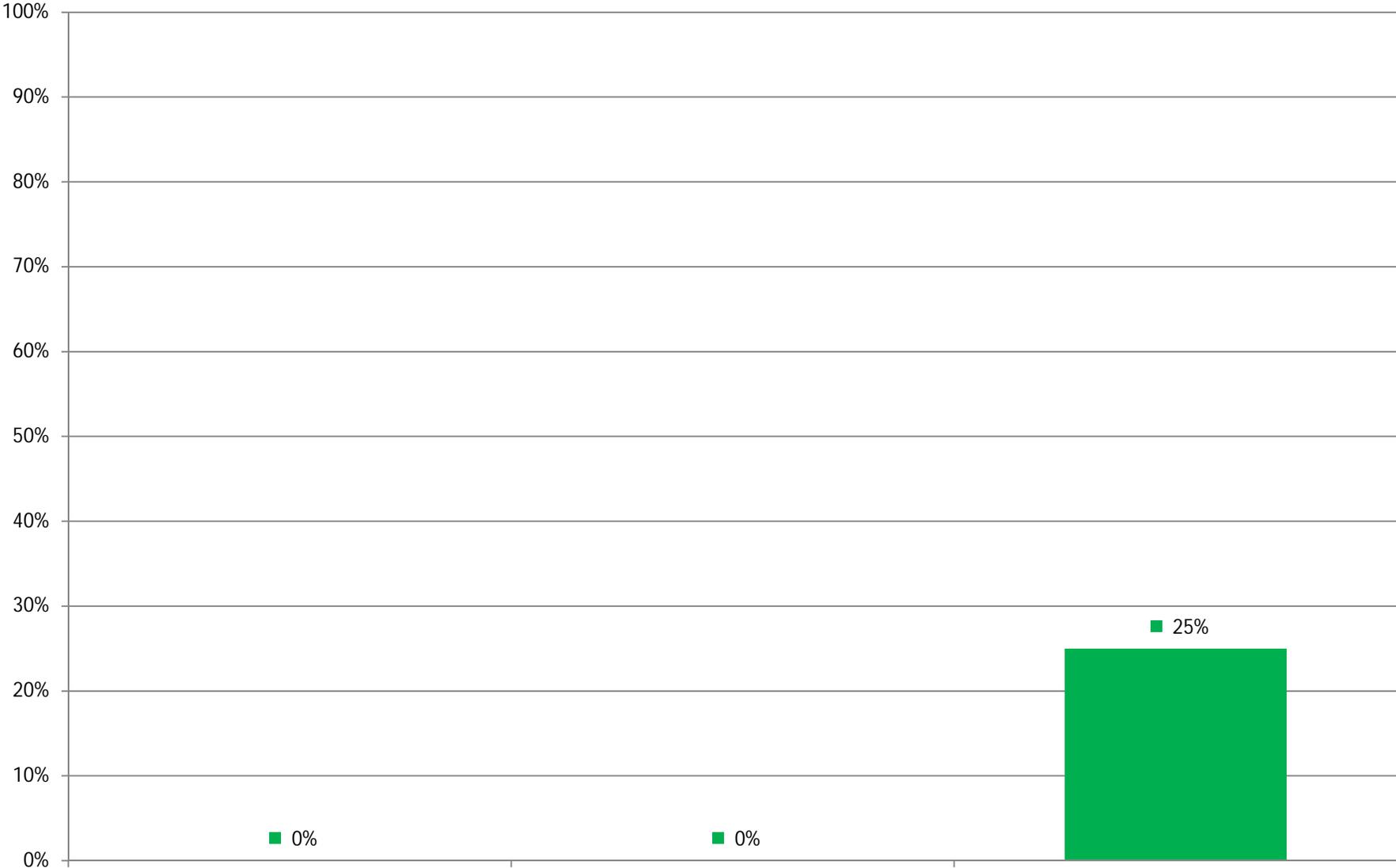


**Appendix I**  
**Villages Gap Analysis**

## Category I: Reduction of Impervious Cover



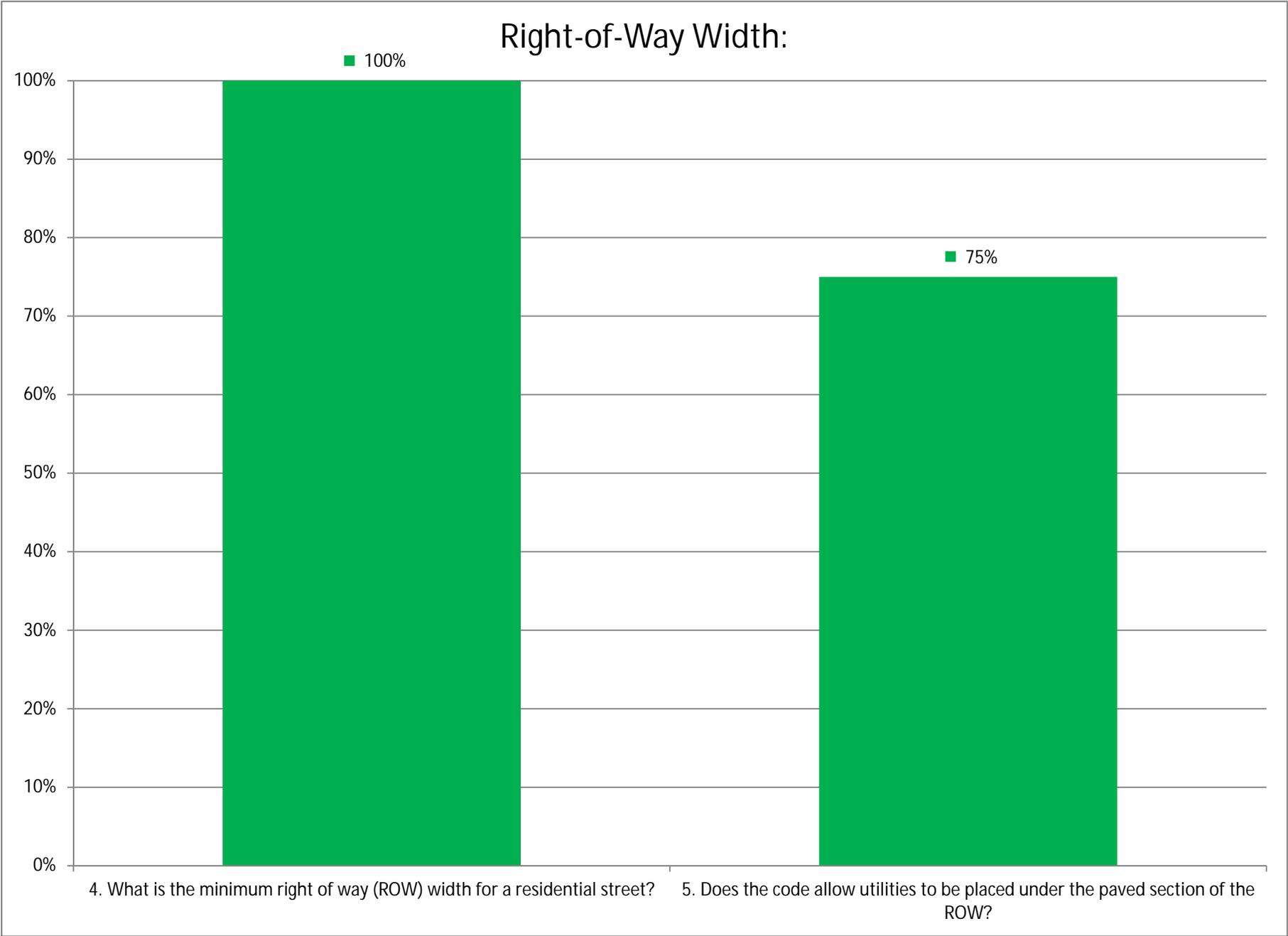
# Street width and length:



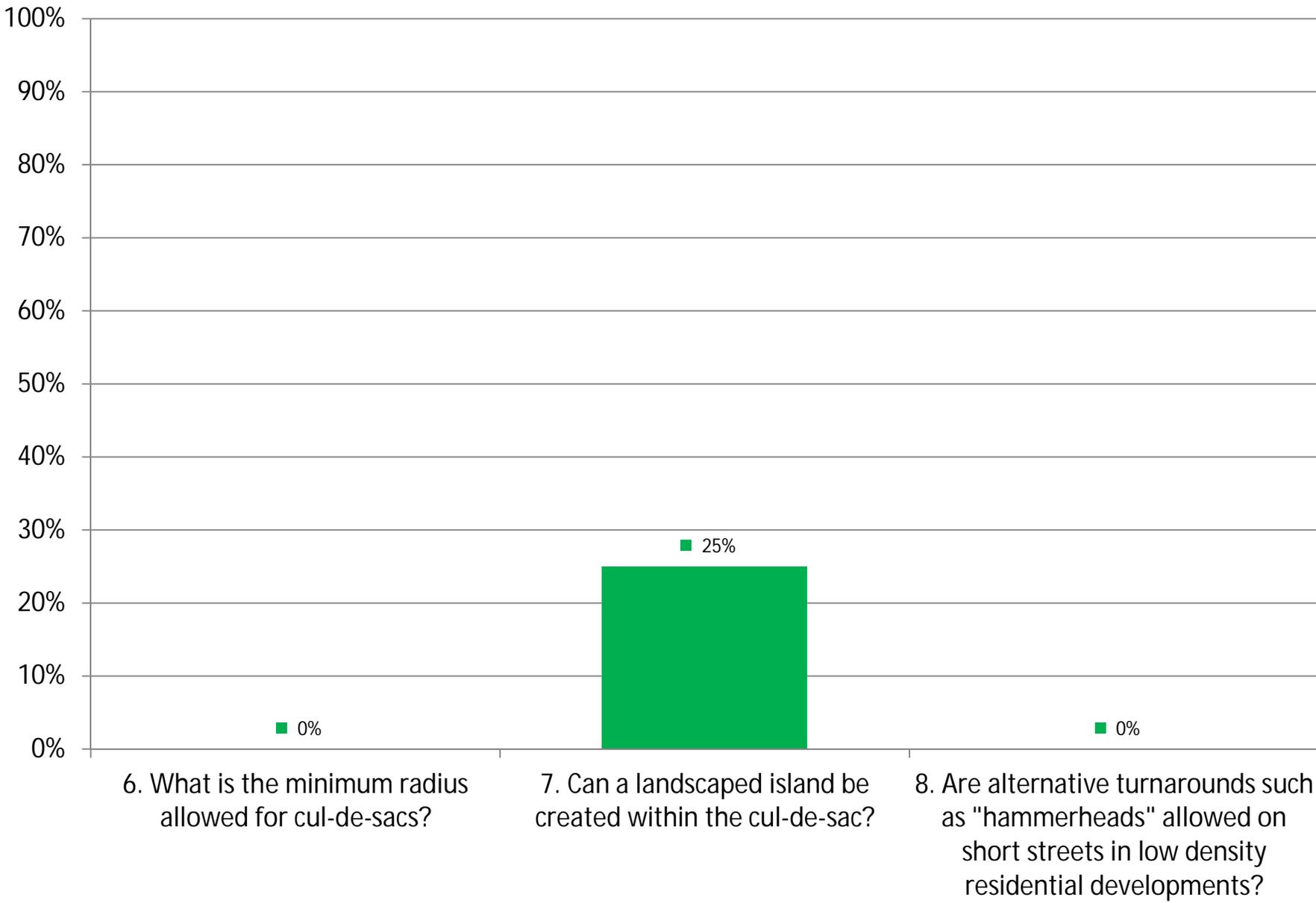
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)?

2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?

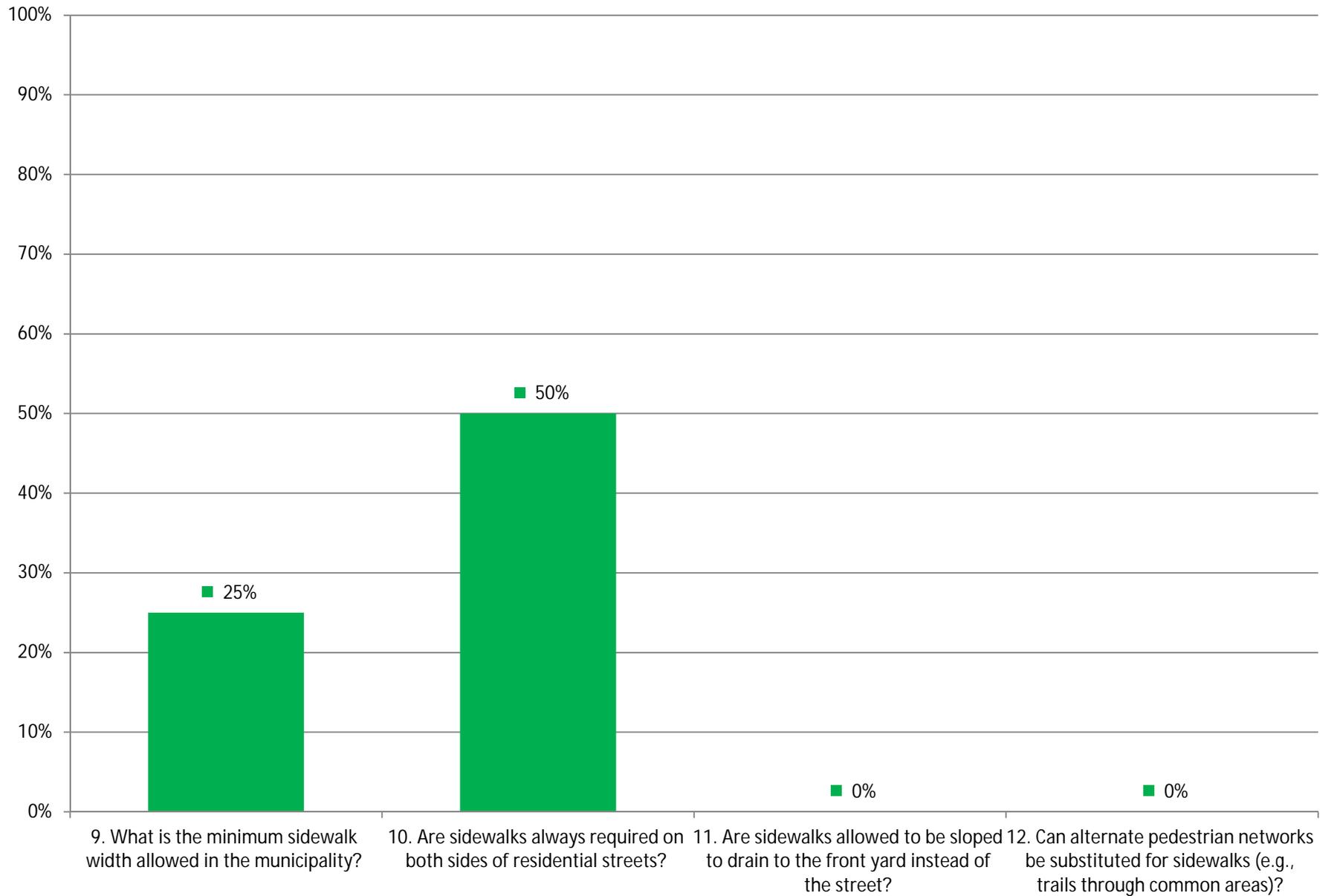
3. Do street standards promote the most efficient street layouts that reduce overall street length?



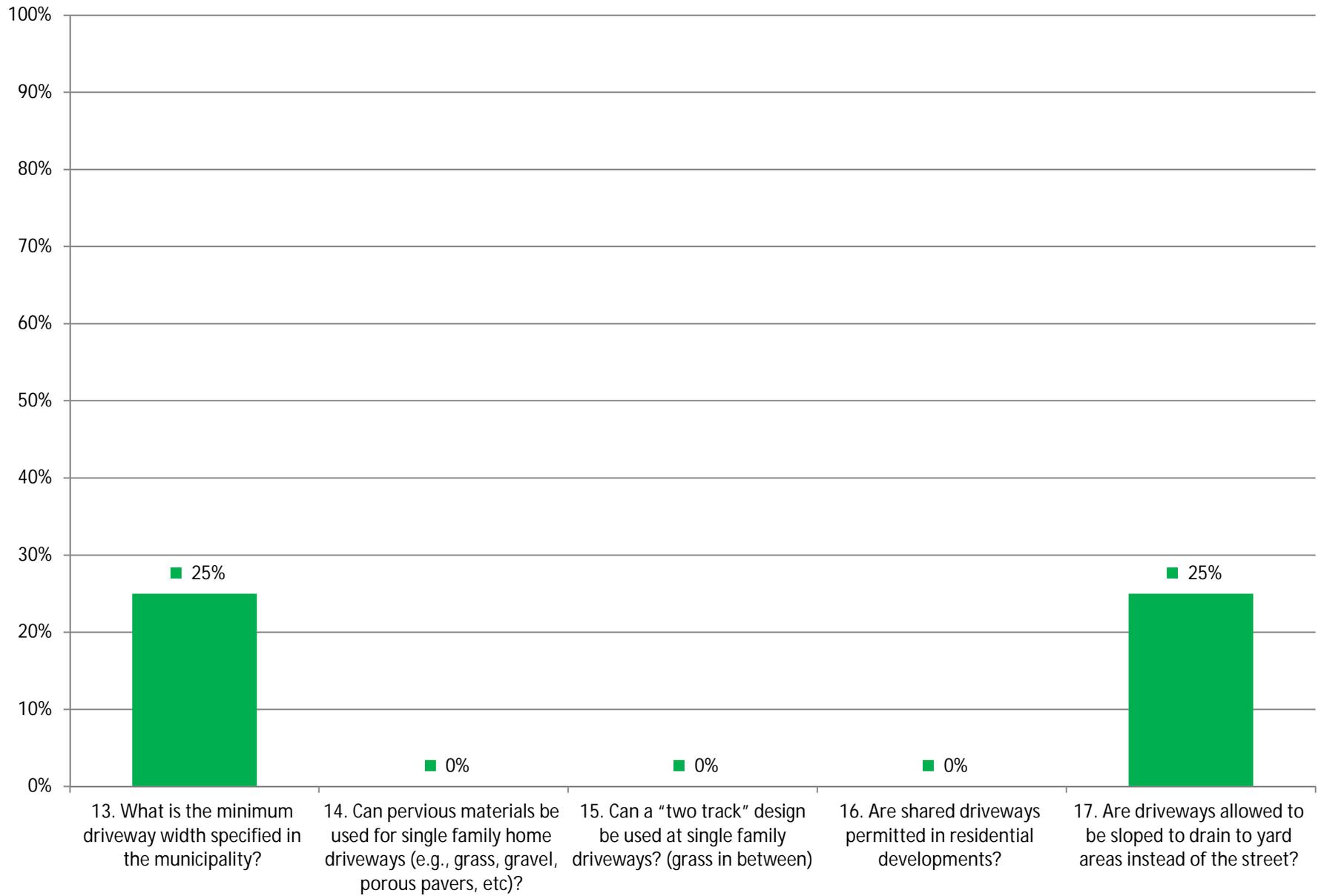
### Cul-de-Sacs:



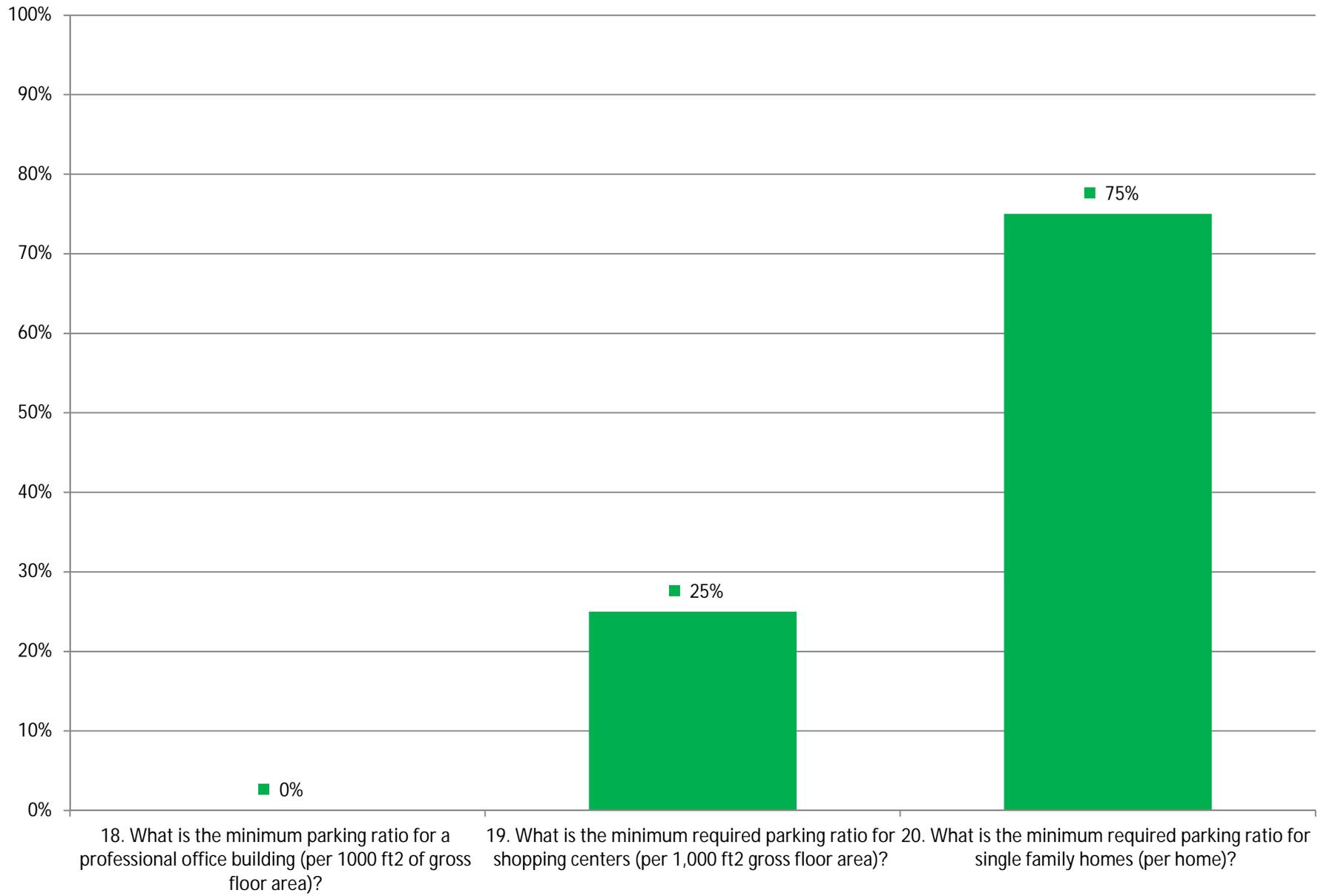
## Sidewalks and Curbs



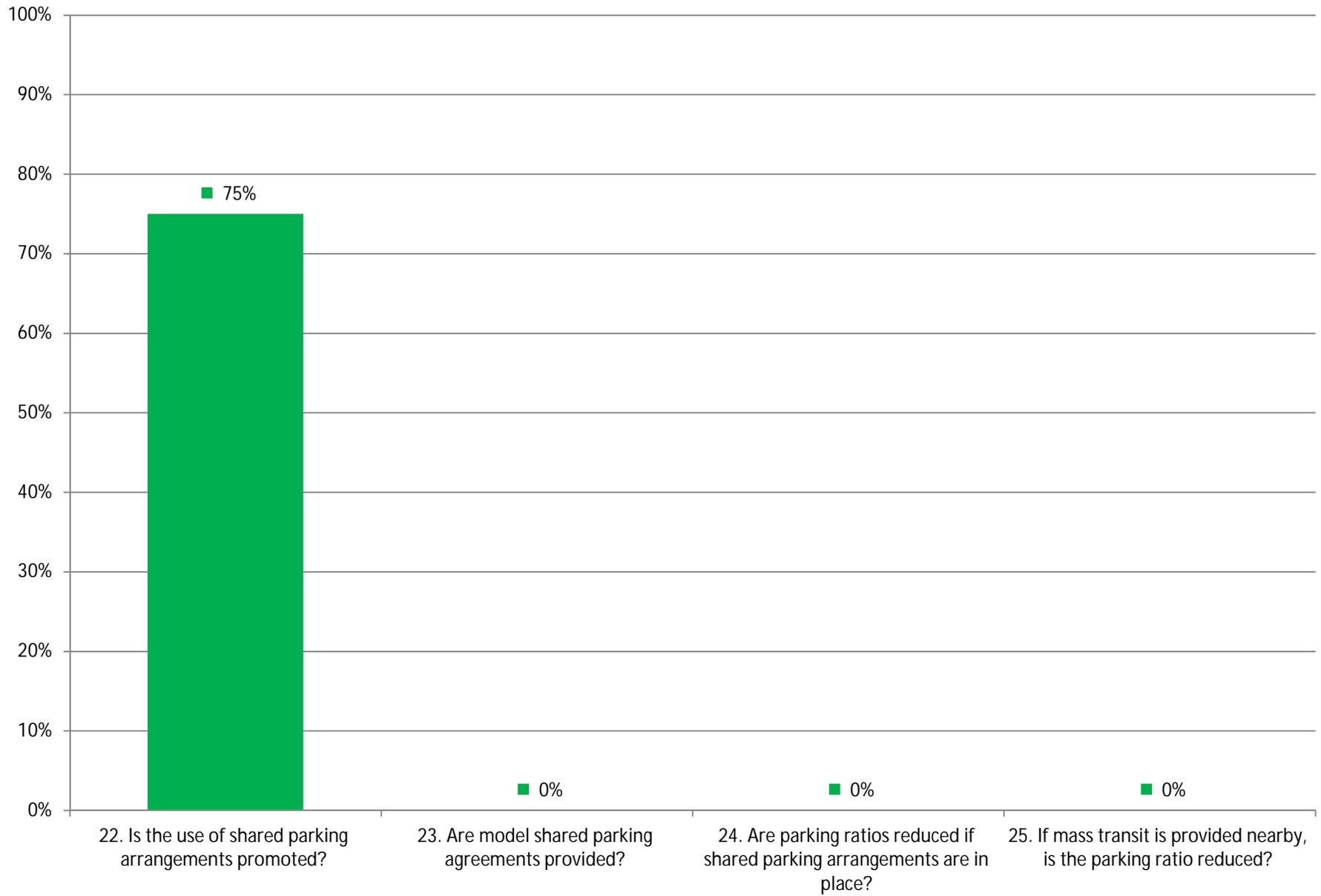
# Driveways



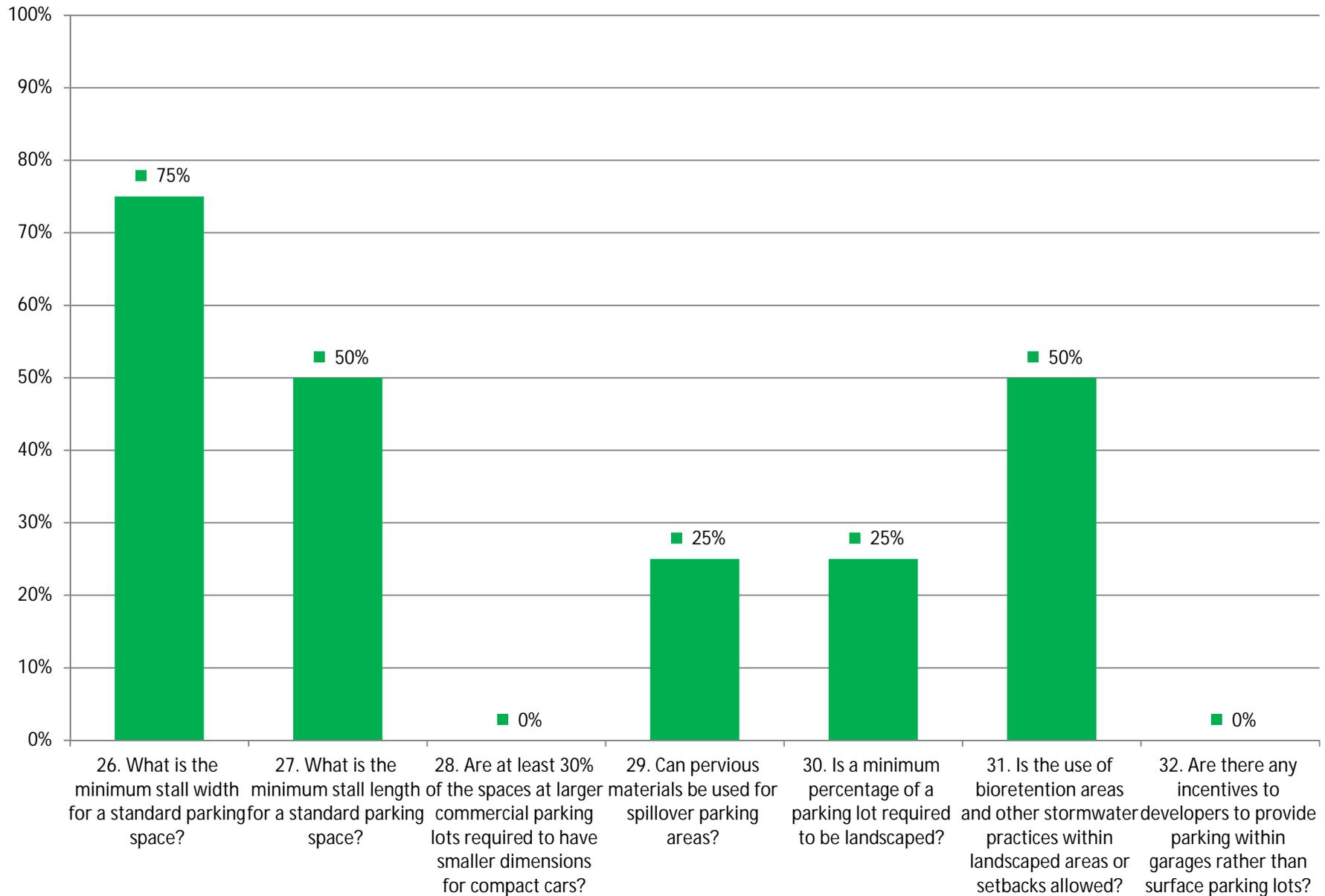
# Parking Ratios



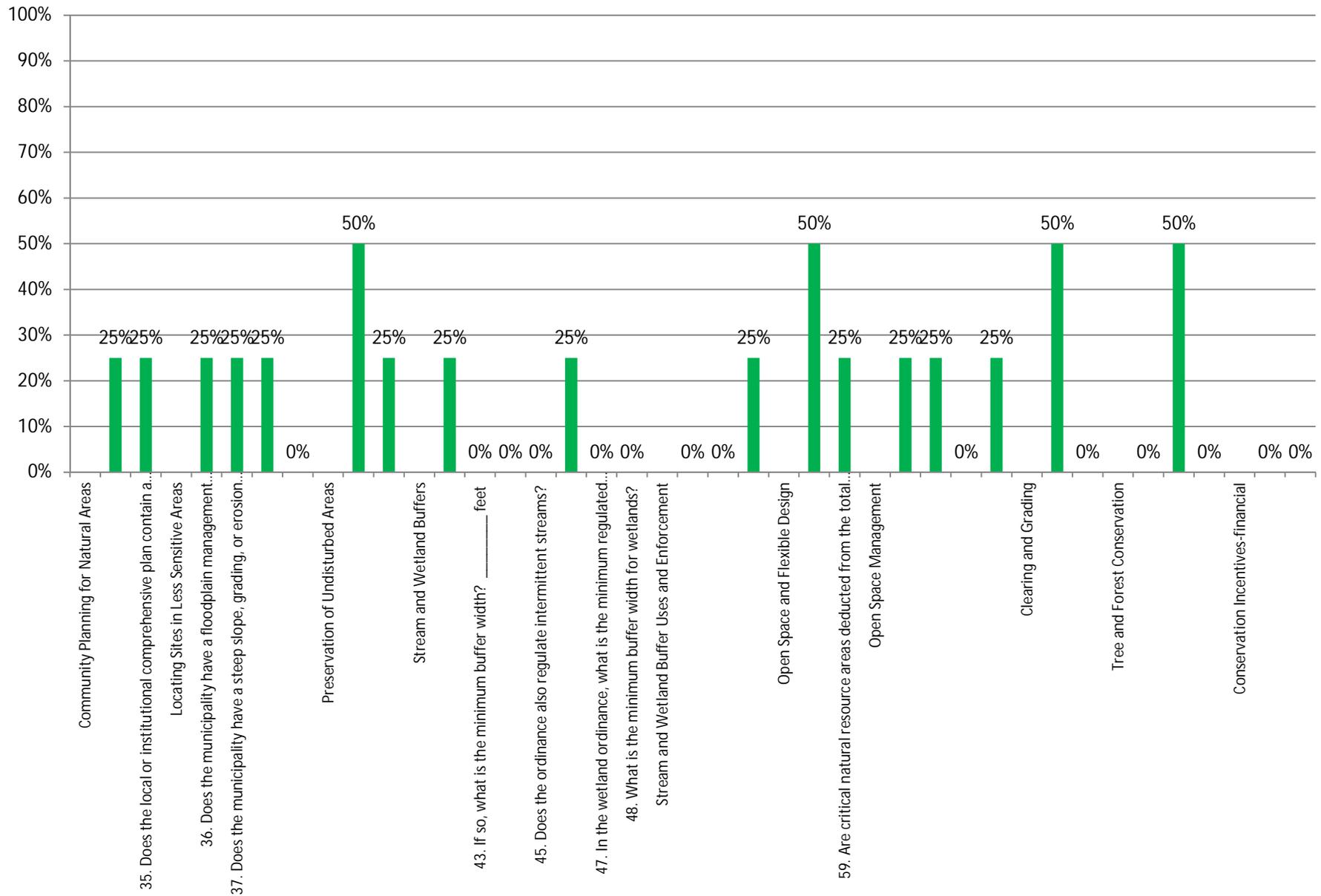
# Shared Parking



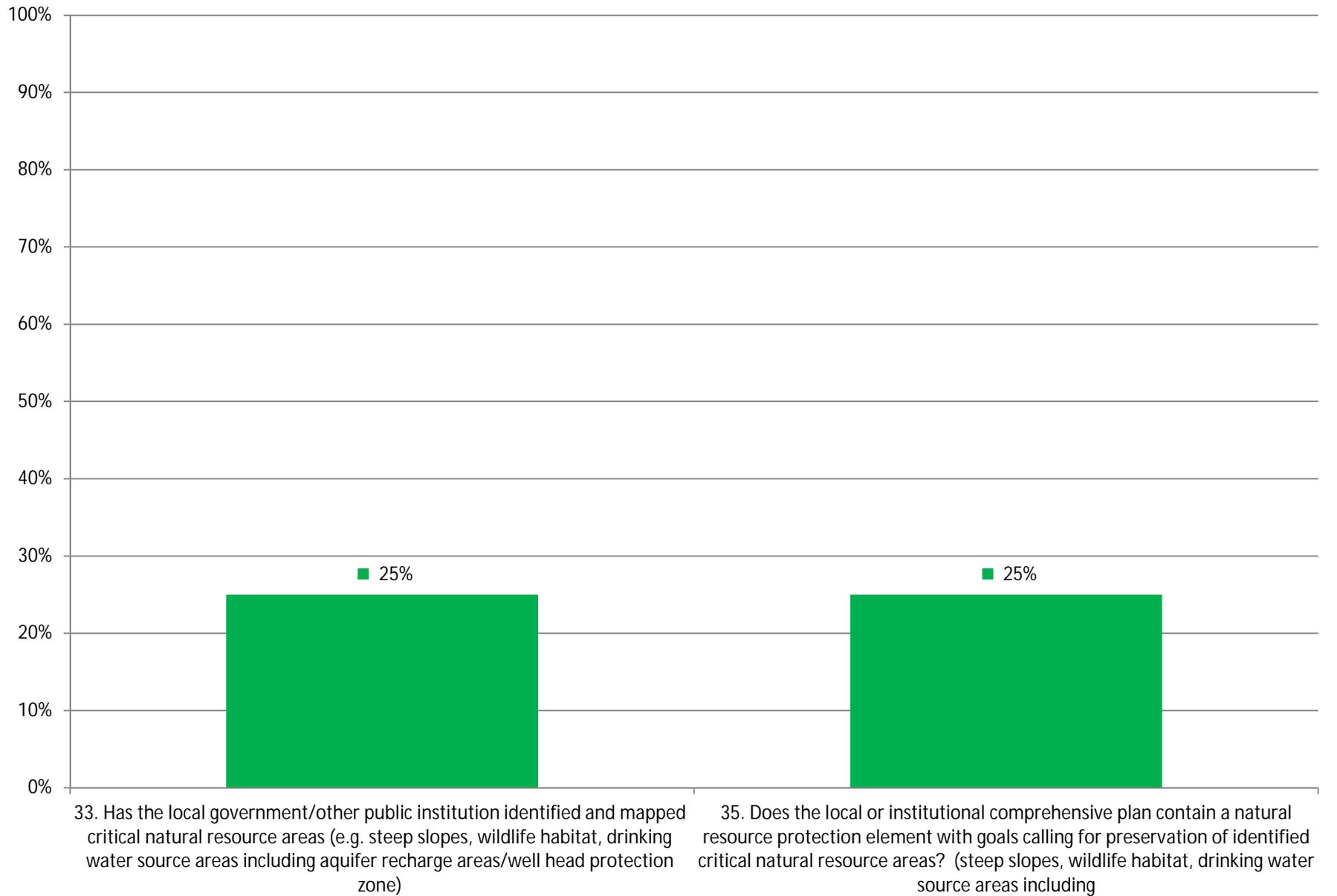
## Parking Lot Design Standards



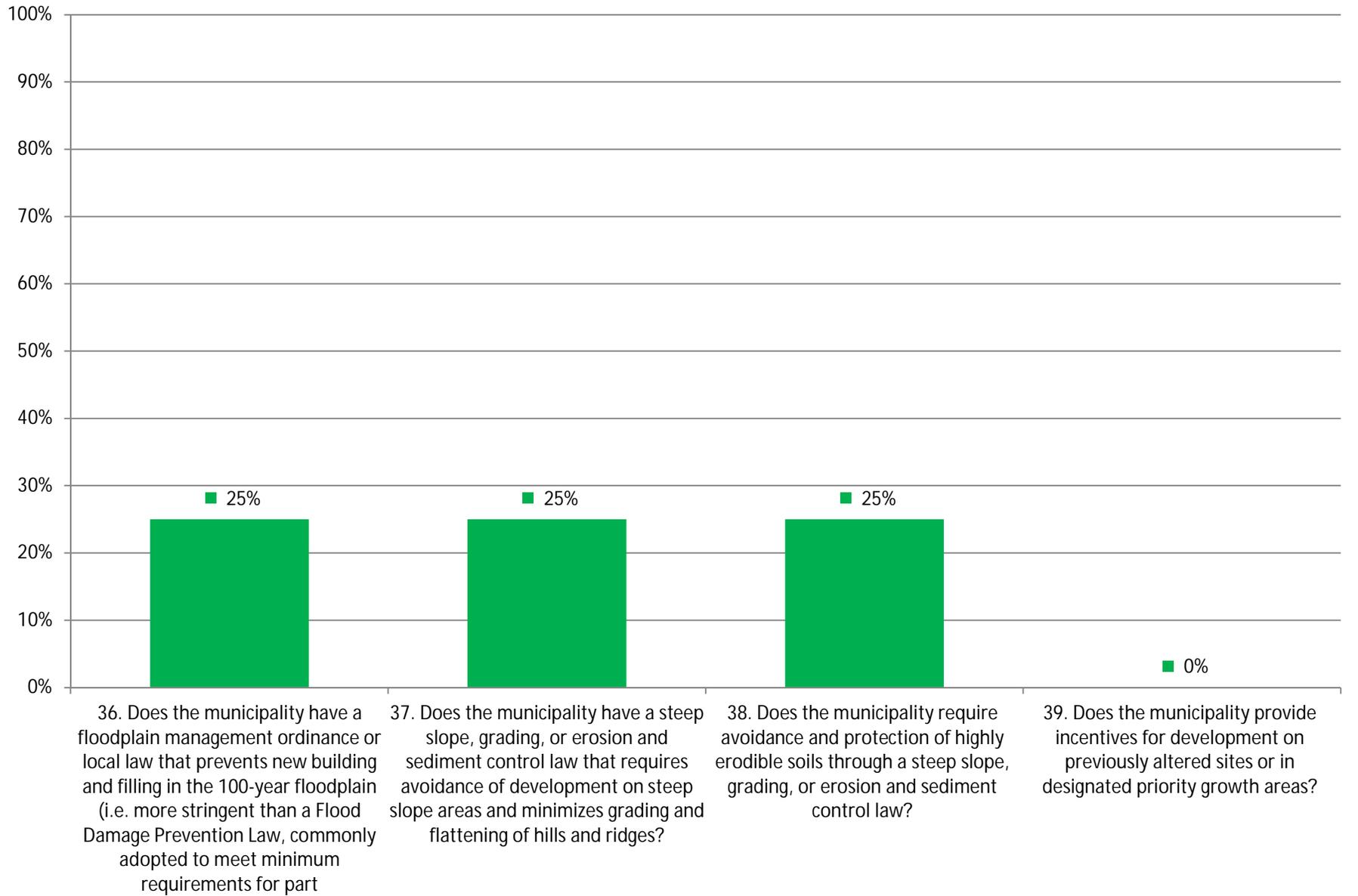
## Category II: Preservation of Natural Features and Conservation Design



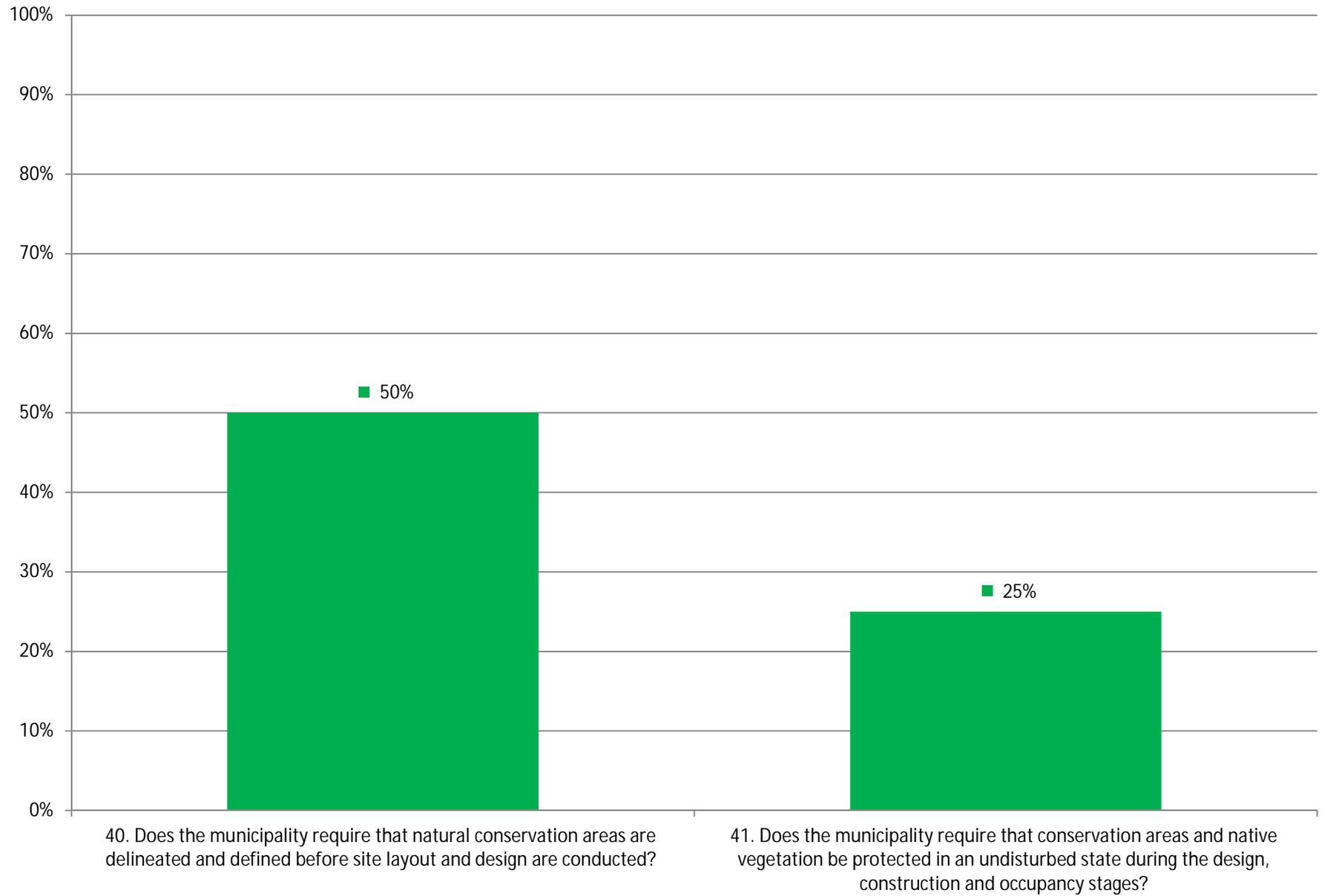
## Community Planning for Natural Areas



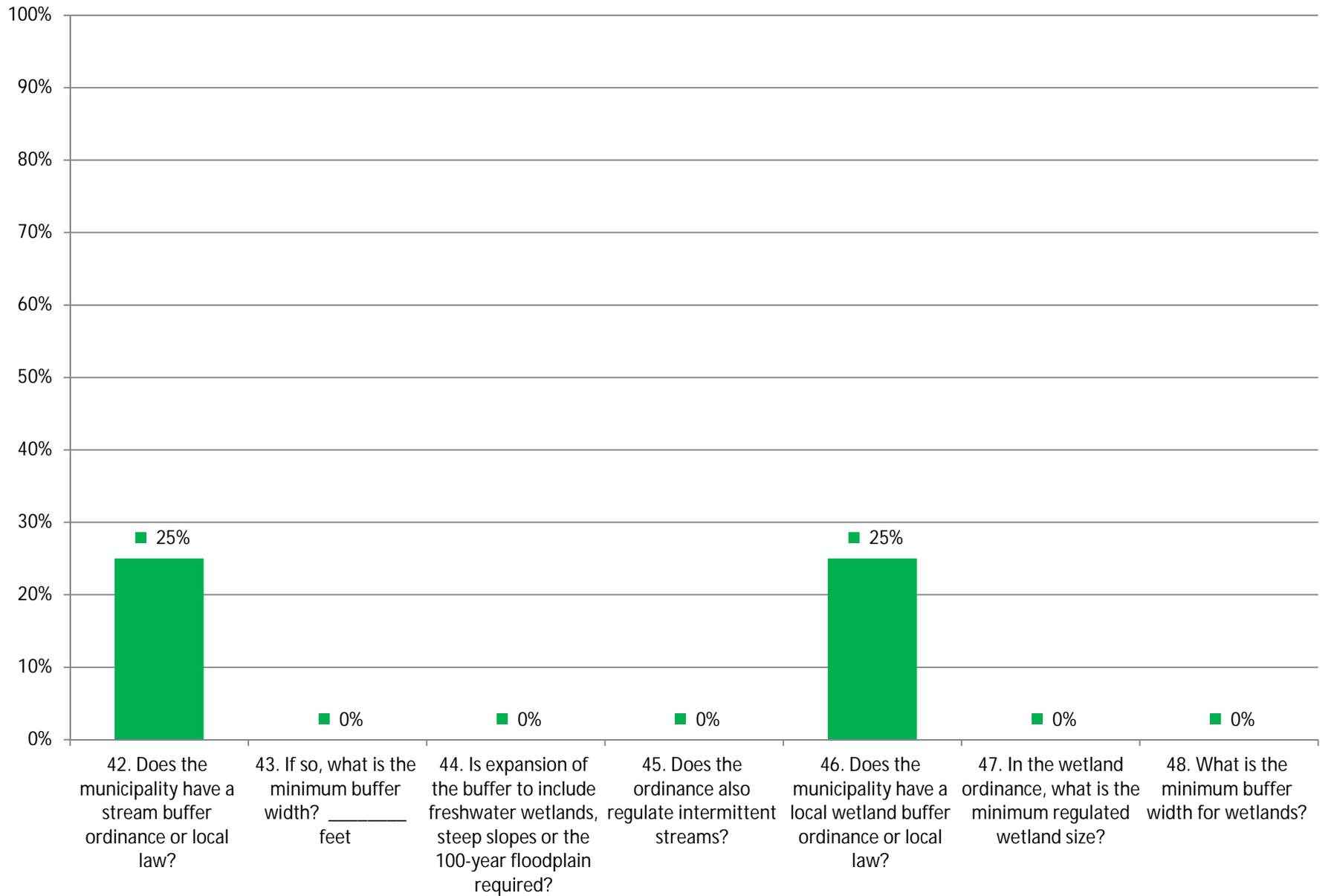
## Locating Sites in Less Sensitive Areas

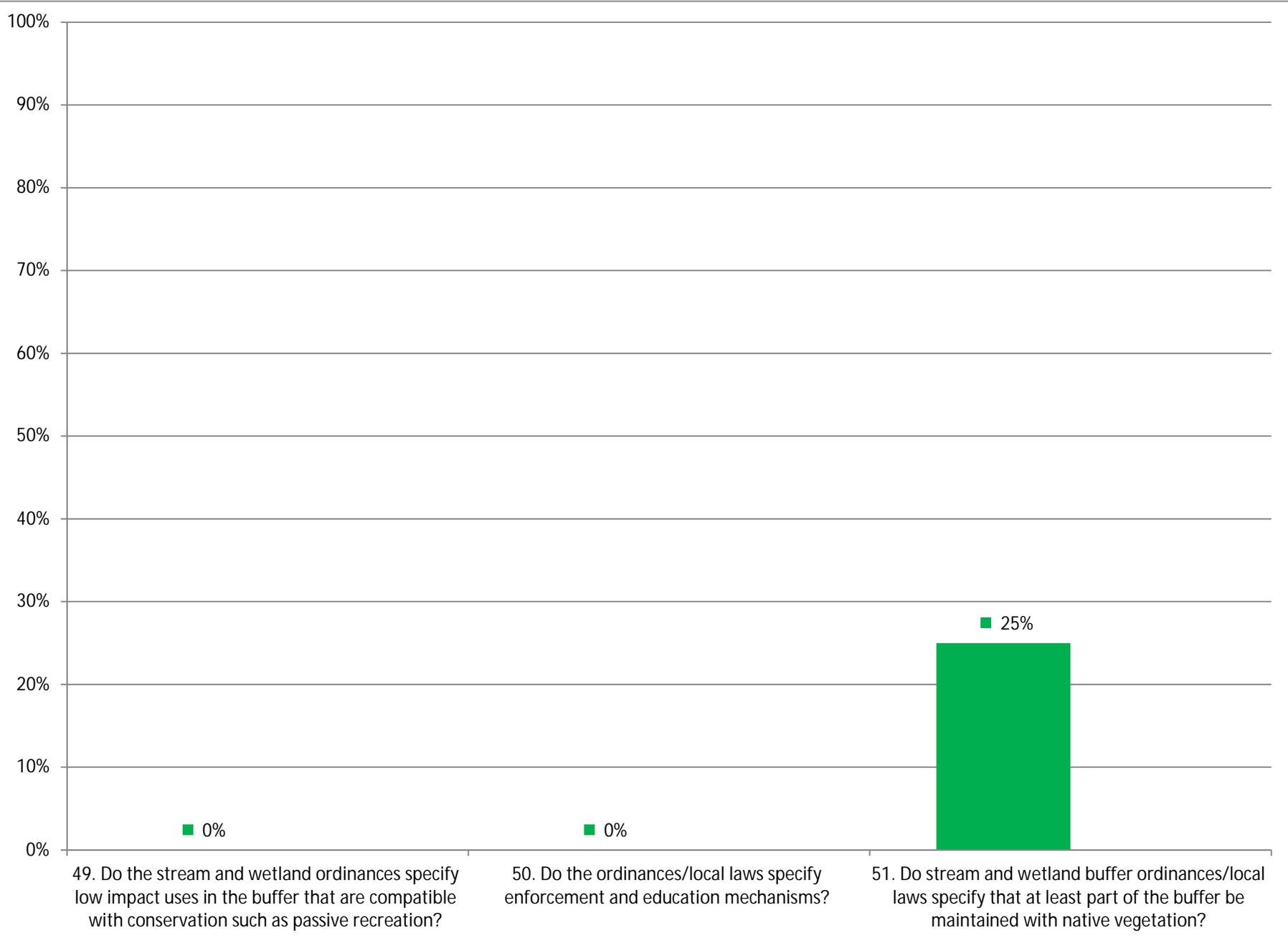


## Preservation of Undisturbed Areas

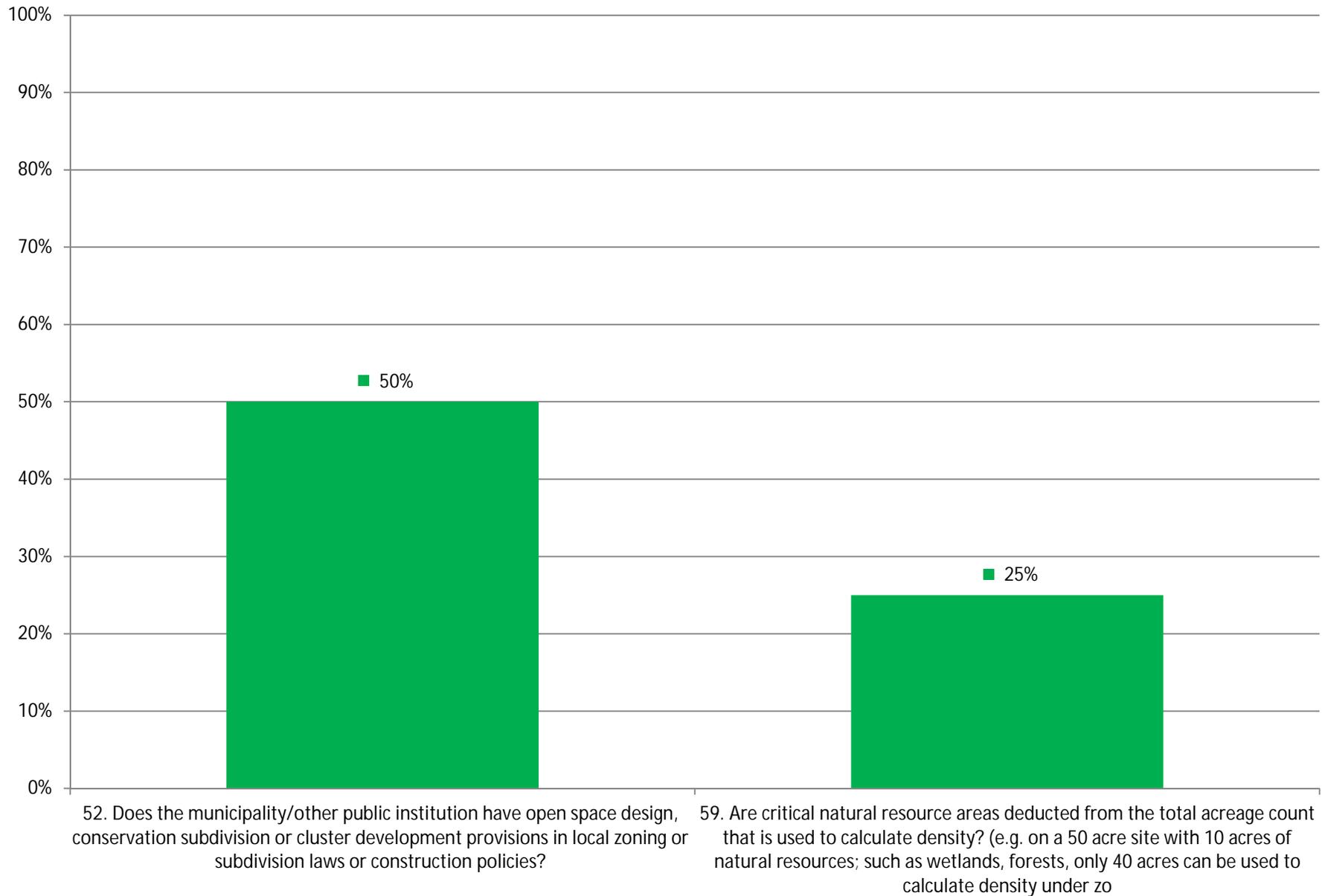


## Stream and Wetland Buffers

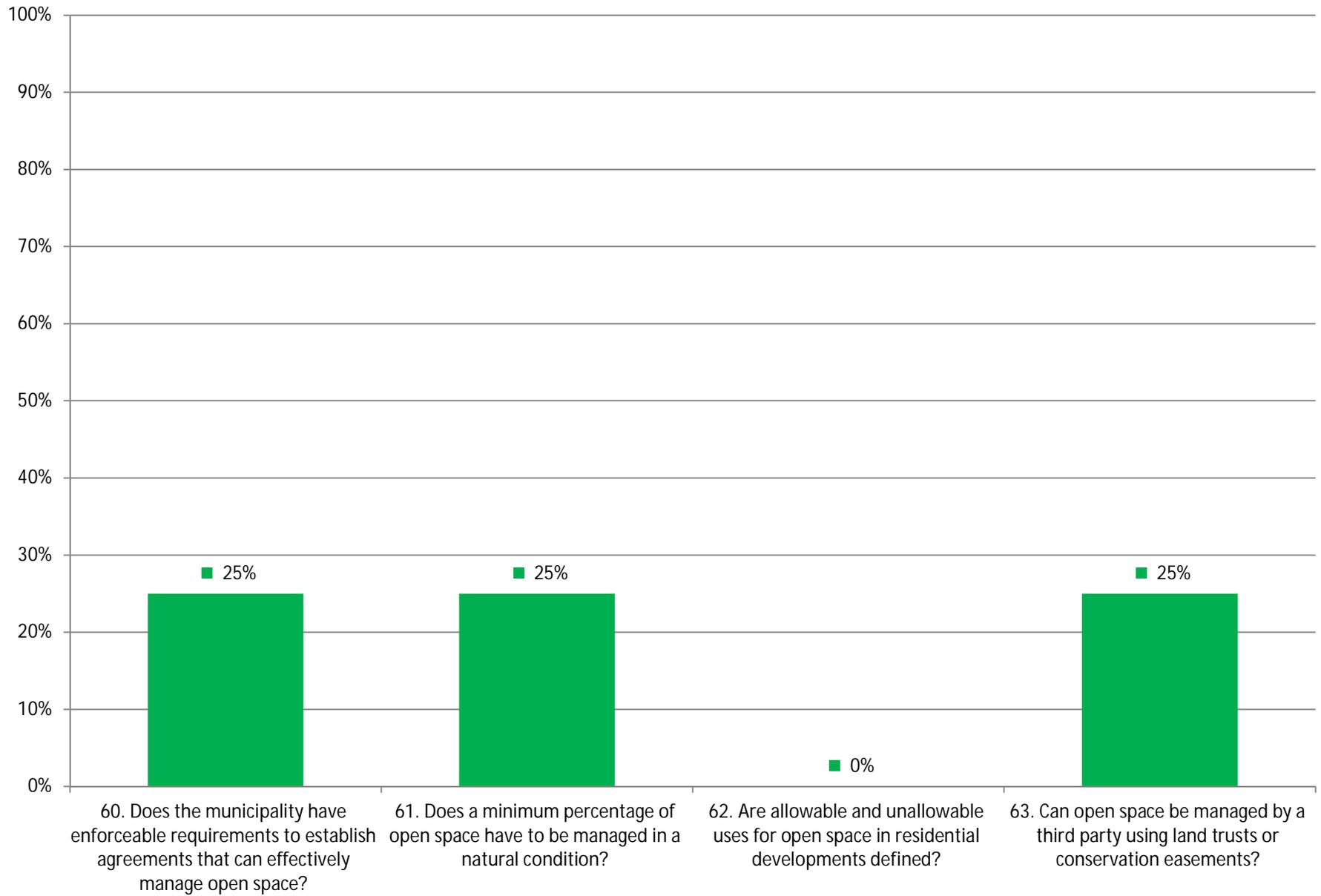


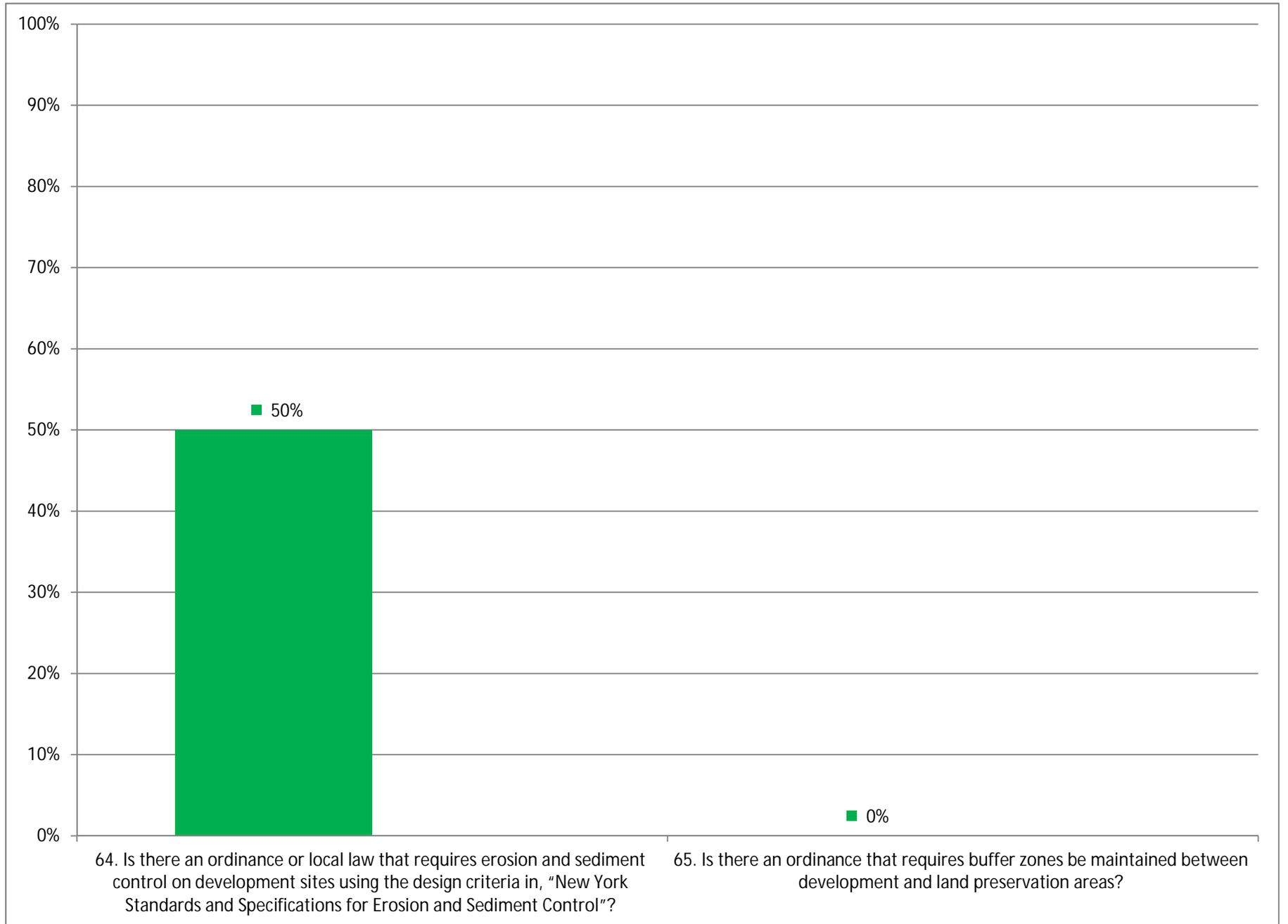


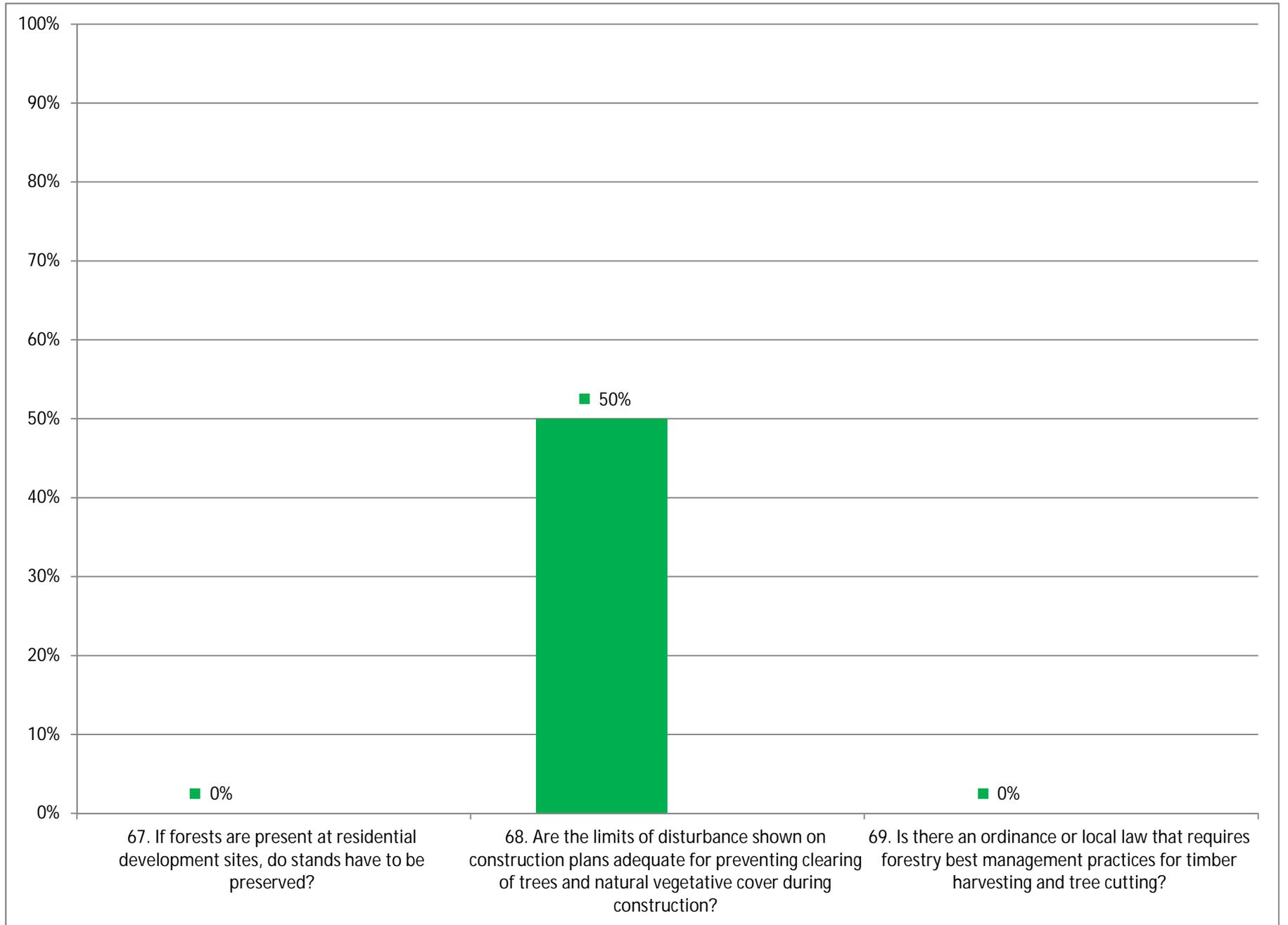
## Open Space and Flexible Design

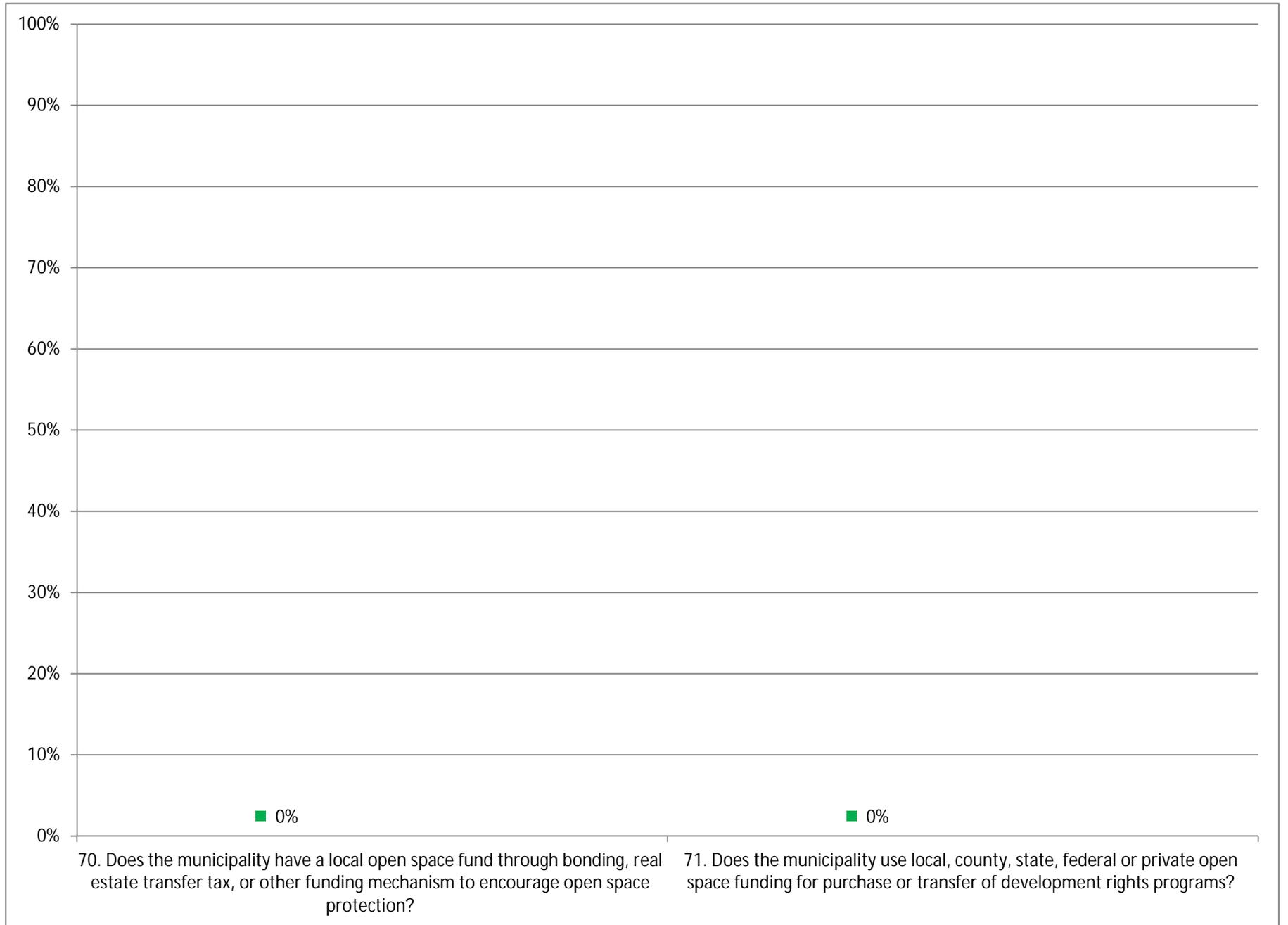


# Open Space Management

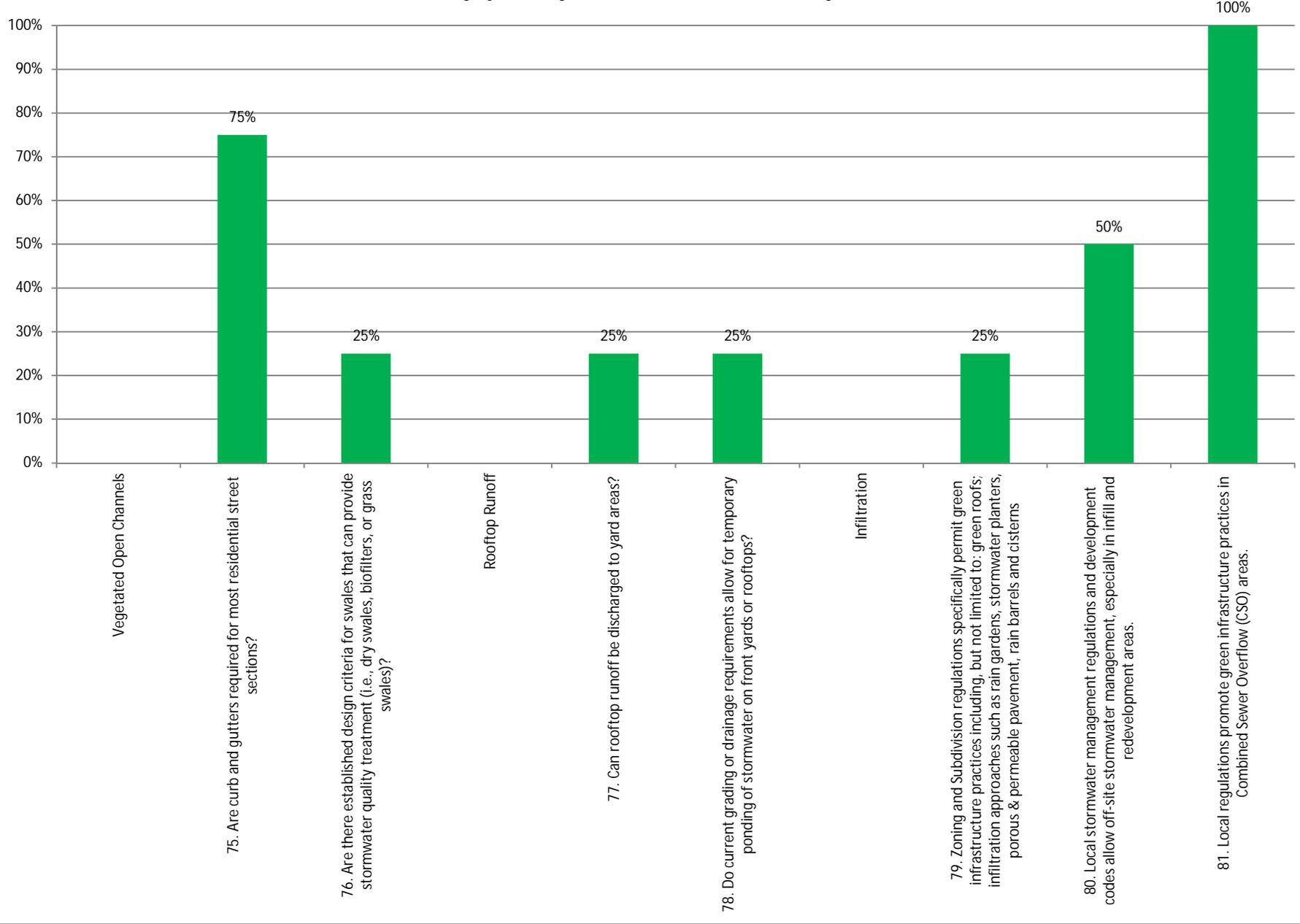




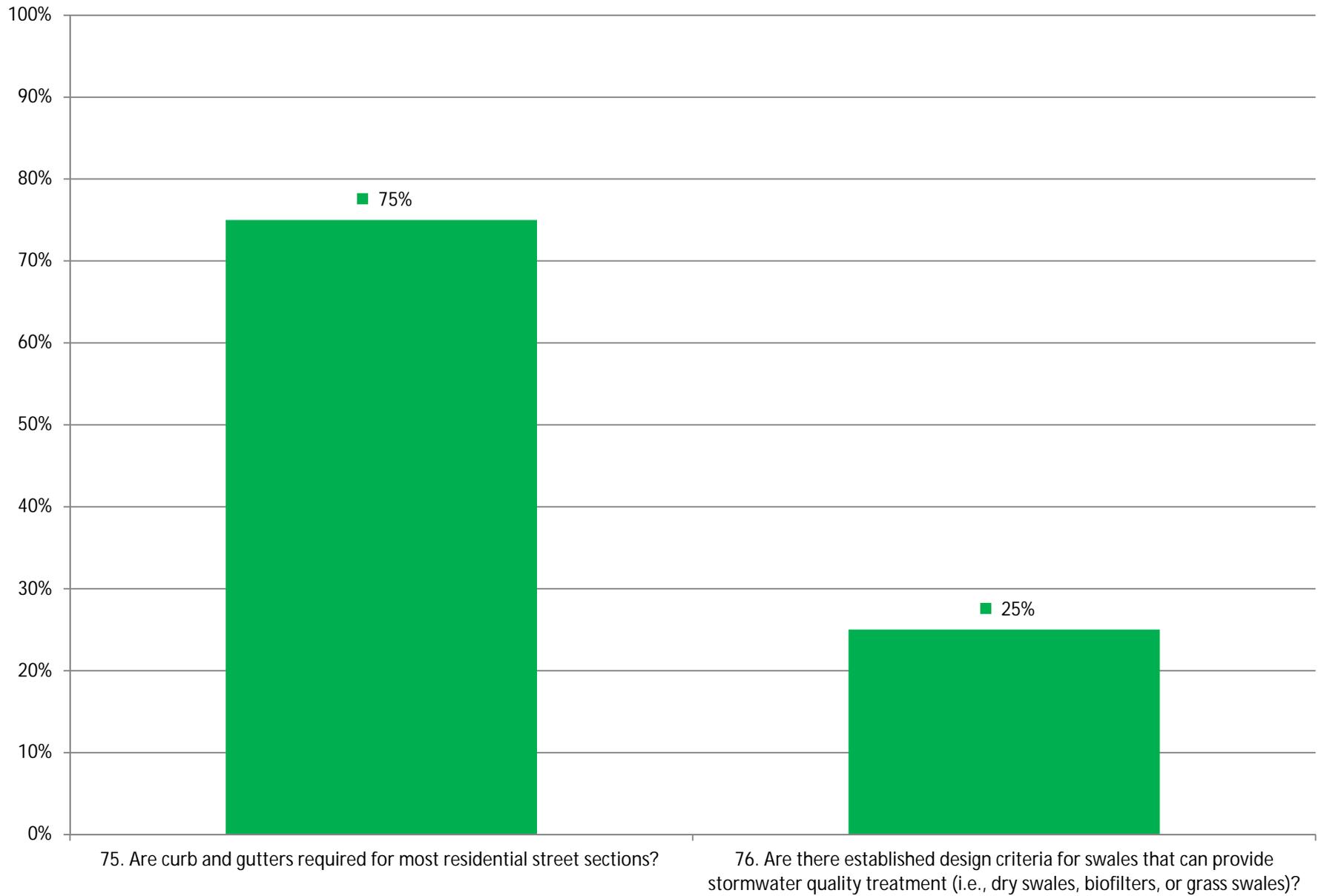




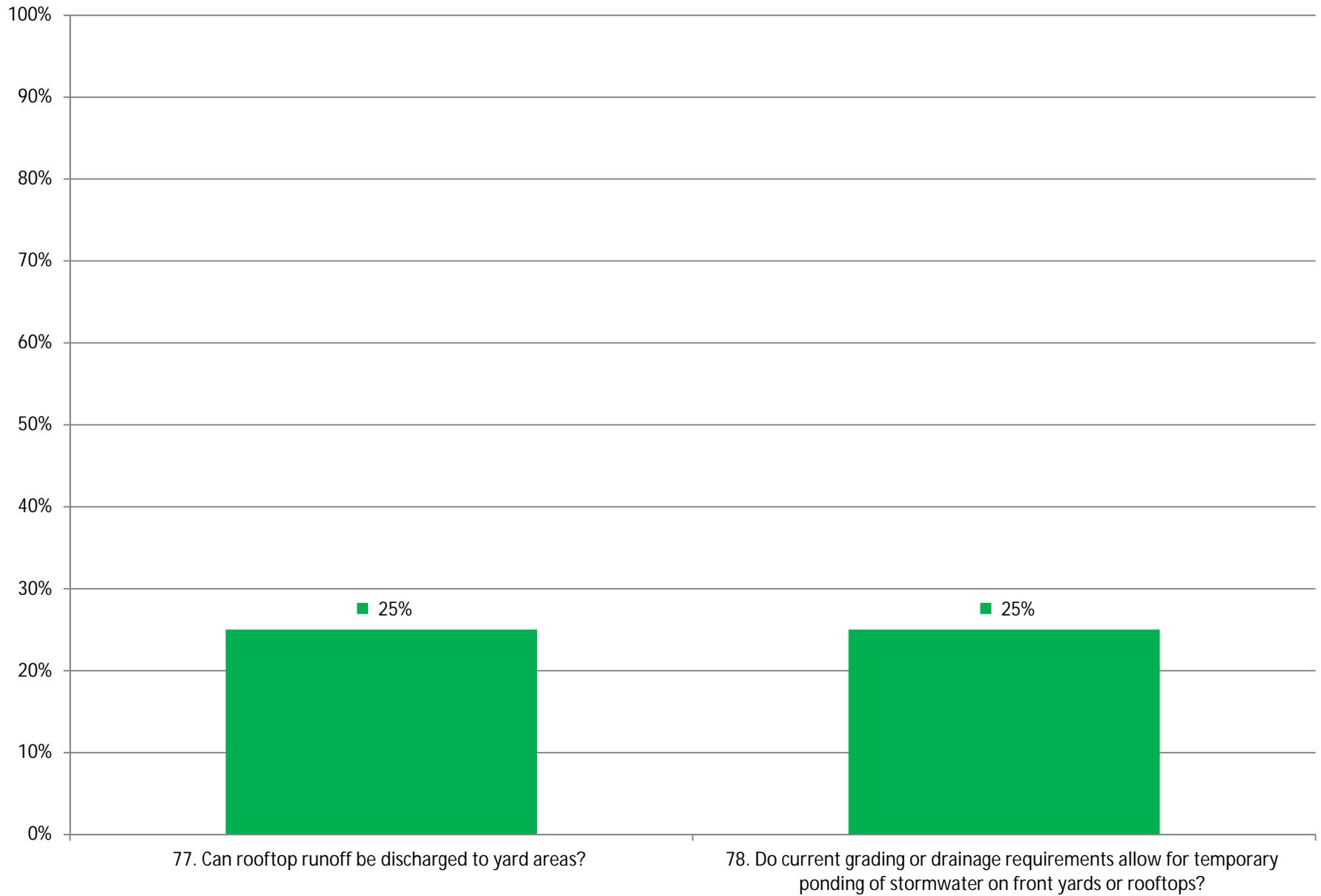
Category III: Design Elements for Stormwater Management



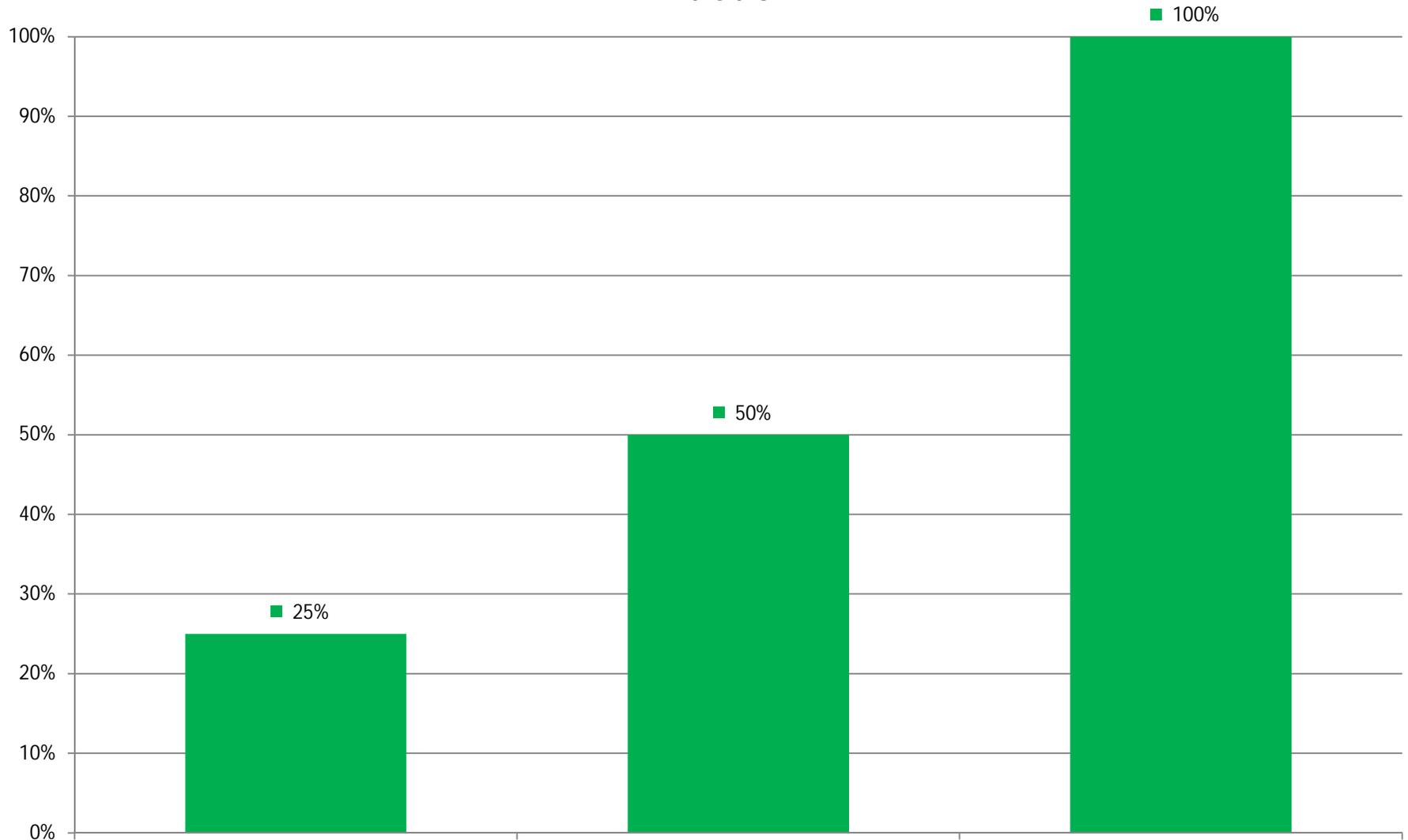
# Vegetated Open Channels



# Rooftop Runoff



# Infiltration

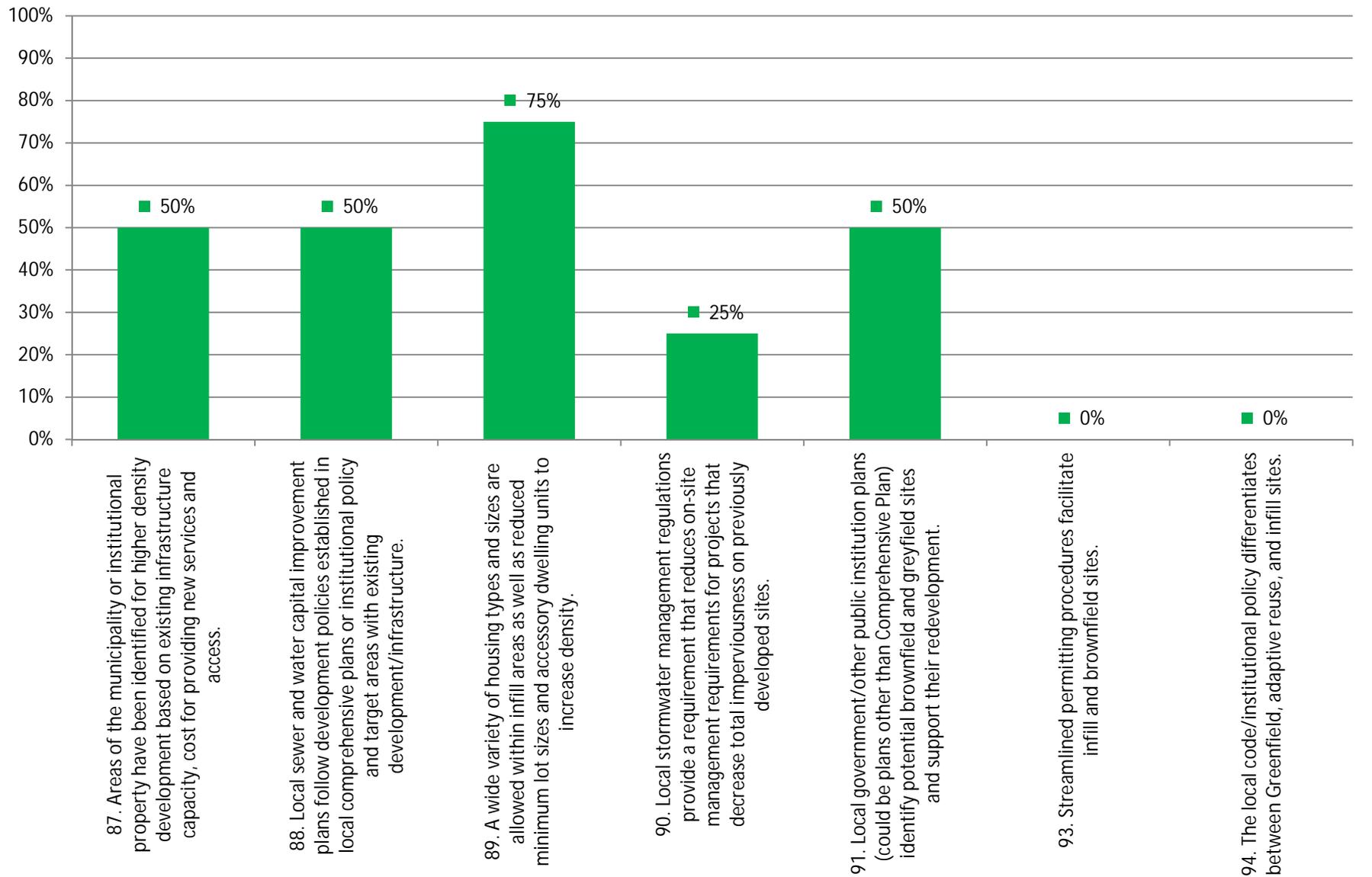


79. Zoning and Subdivision regulations specifically permit green infrastructure practices including, but not limited to: green roofs; infiltration approaches such as rain gardens, stormwater planters, porous & permeable pavement, rain barrels and cisterns

80. Local stormwater management regulations and development codes allow off-site stormwater management, especially in infill and redevelopment areas.

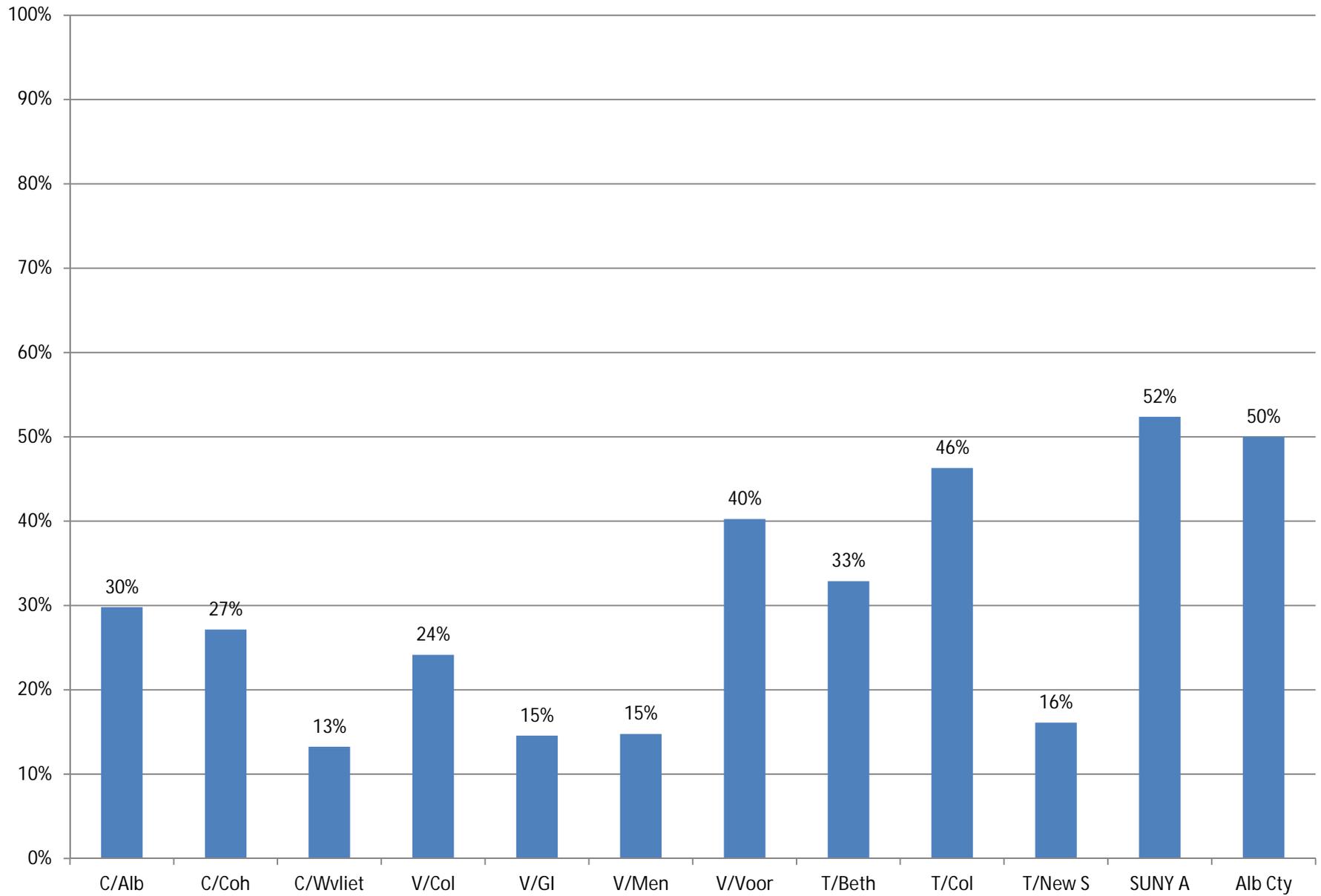
81. Local regulations promote green infrastructure practices in Combined Sewer Overflow (CSO) areas.

## Category IV: Promotion of efficient, compact development patterns and infill

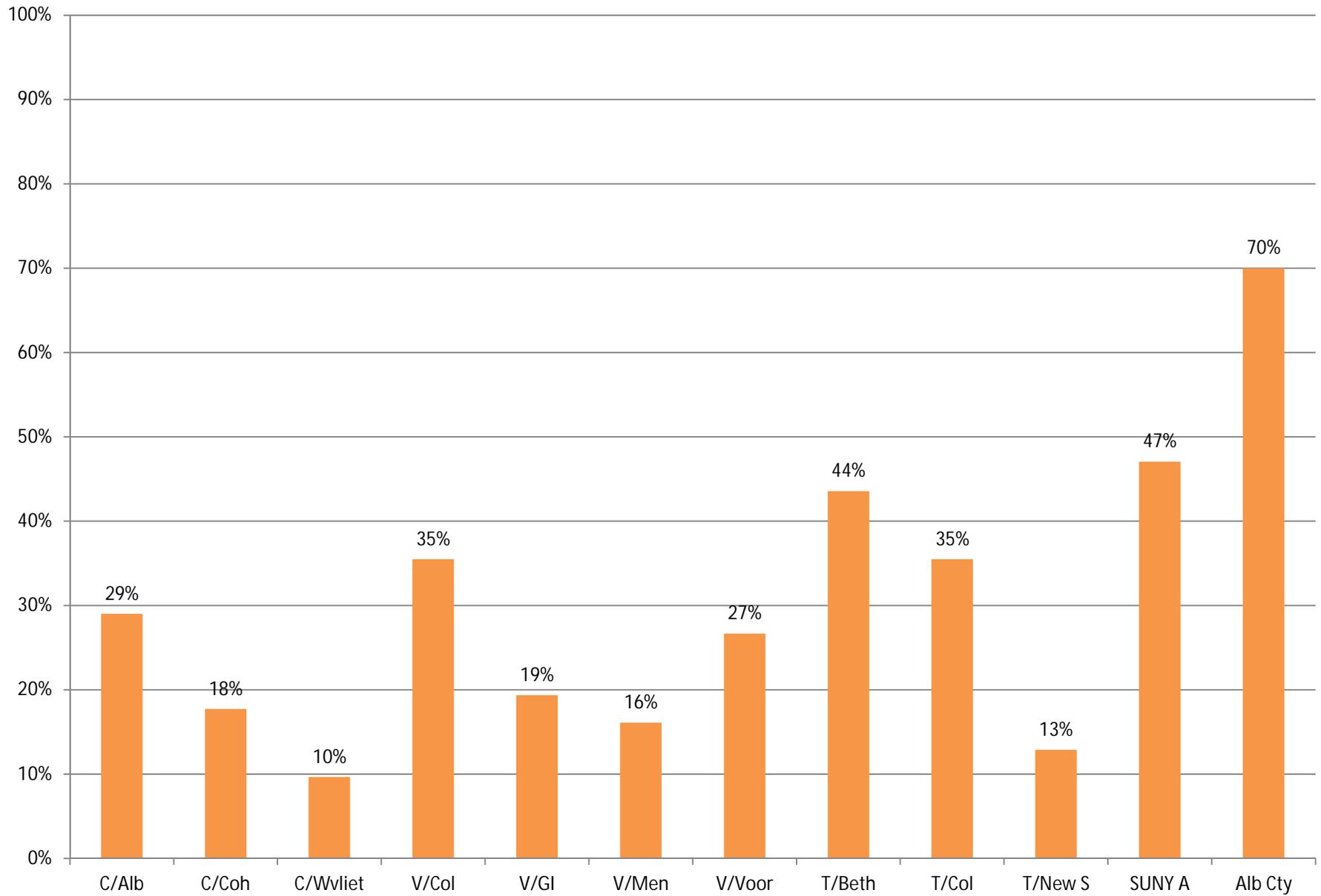


**Appendix J**  
**Municipal Scores by Category**

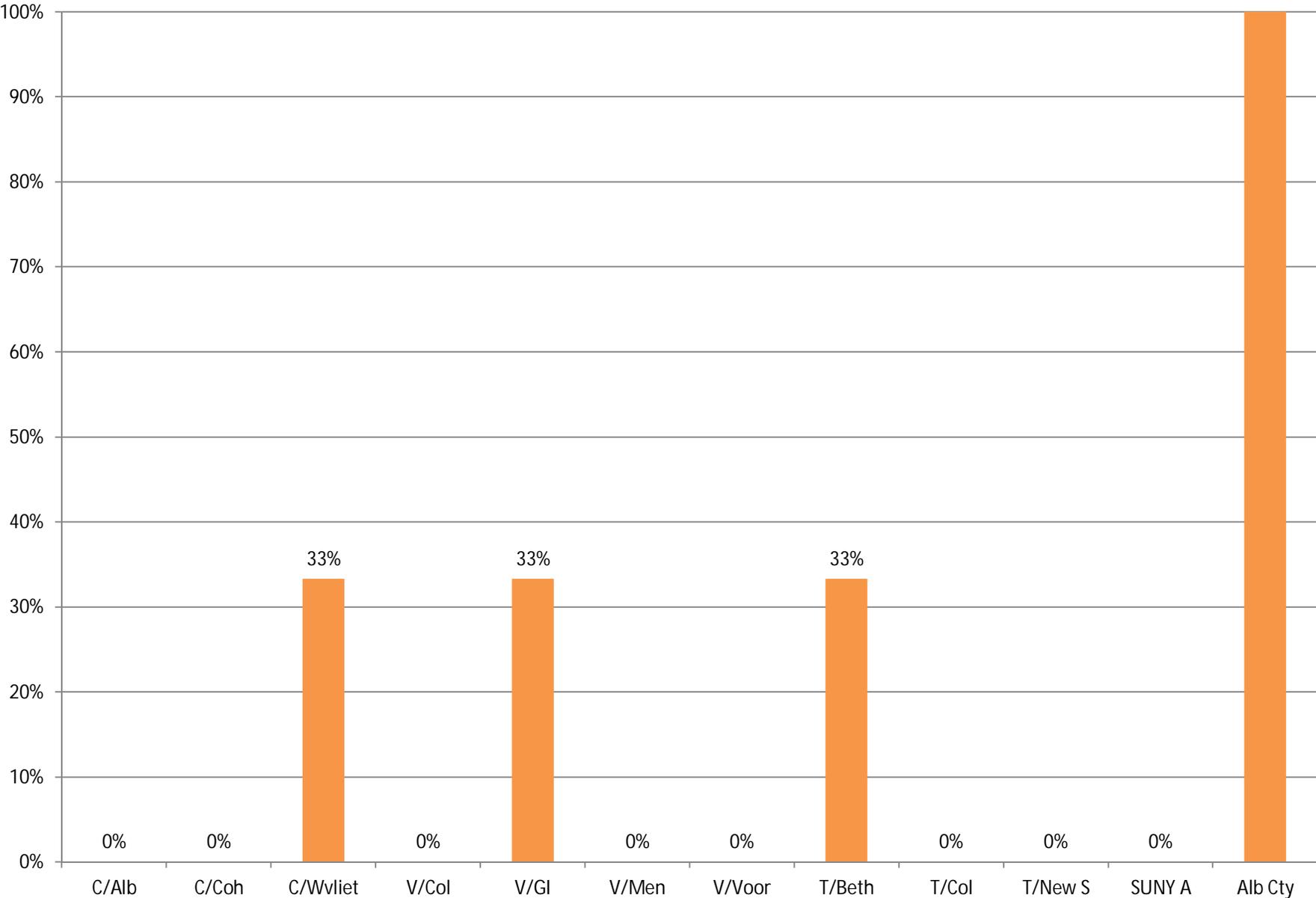
# Total Overall Scorecard Score

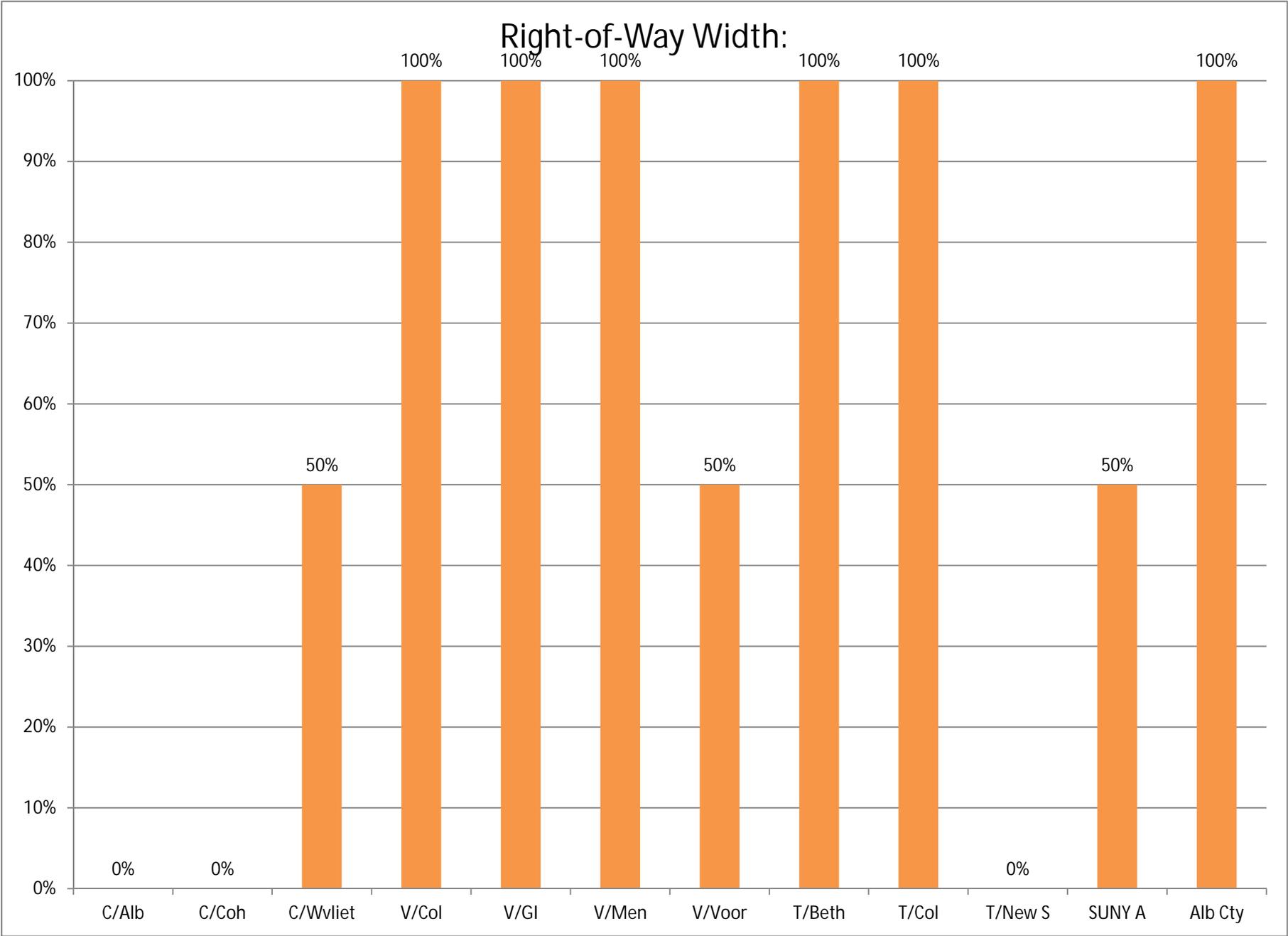


# Total Overall Category 1 Score

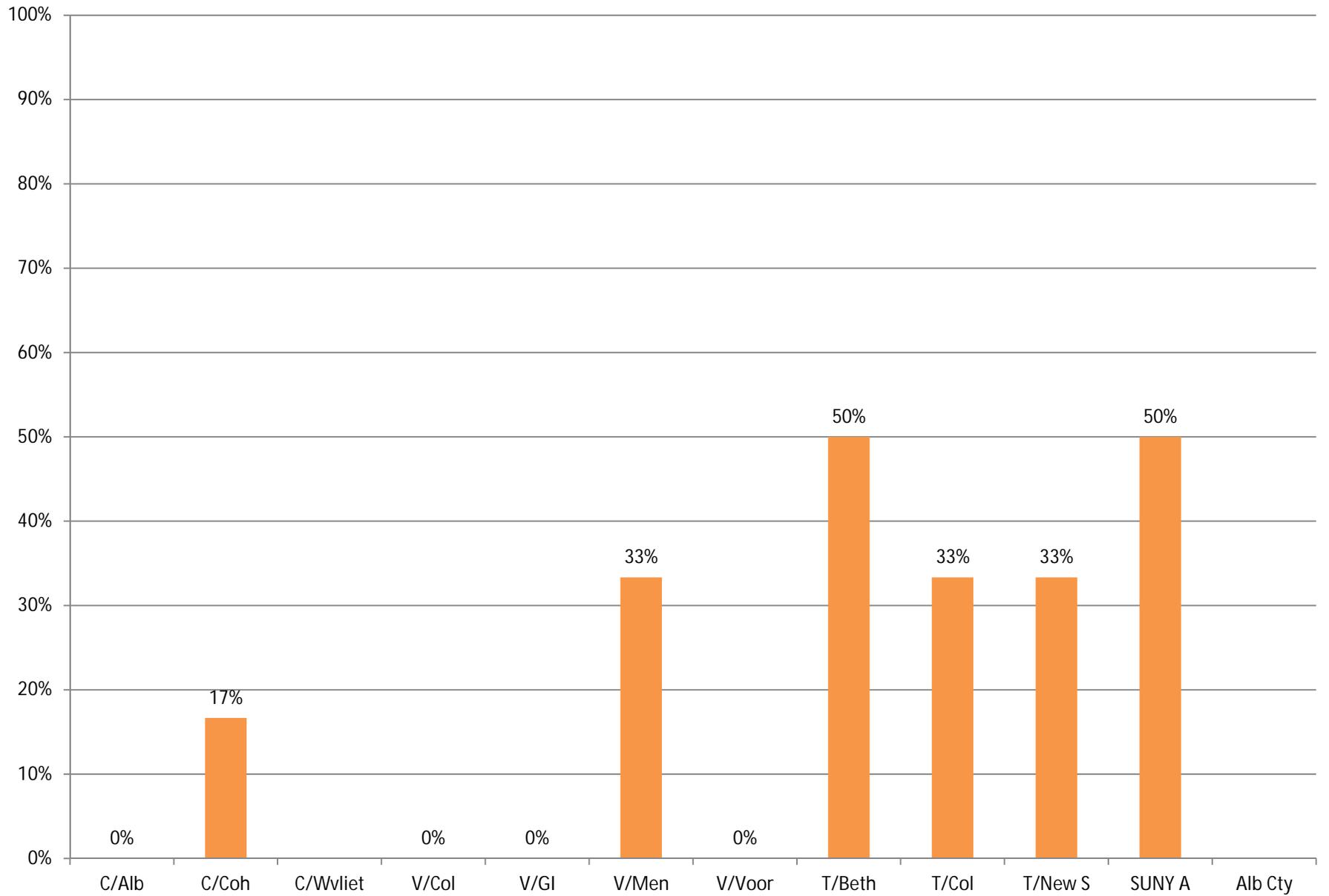


# Street width and length:

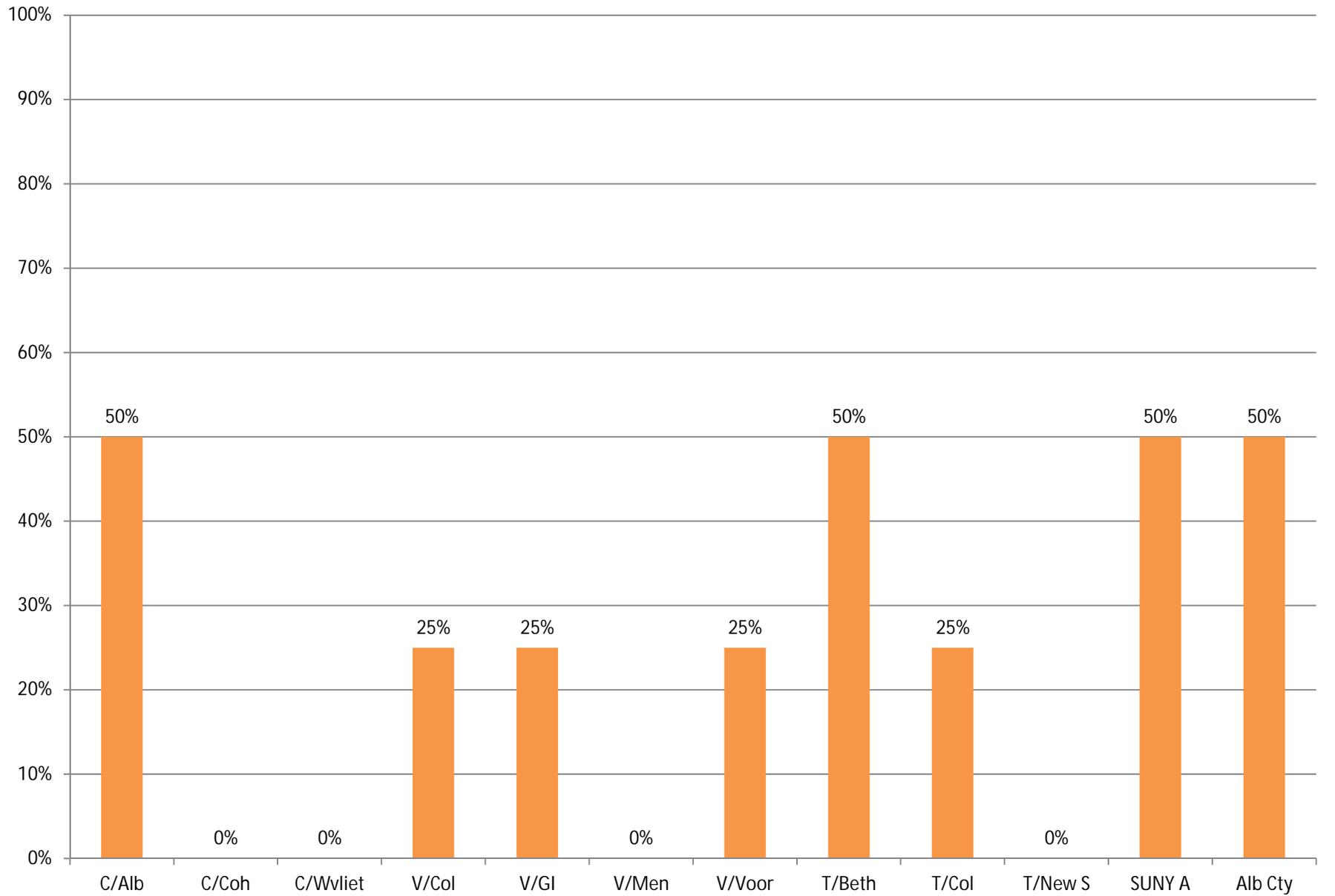




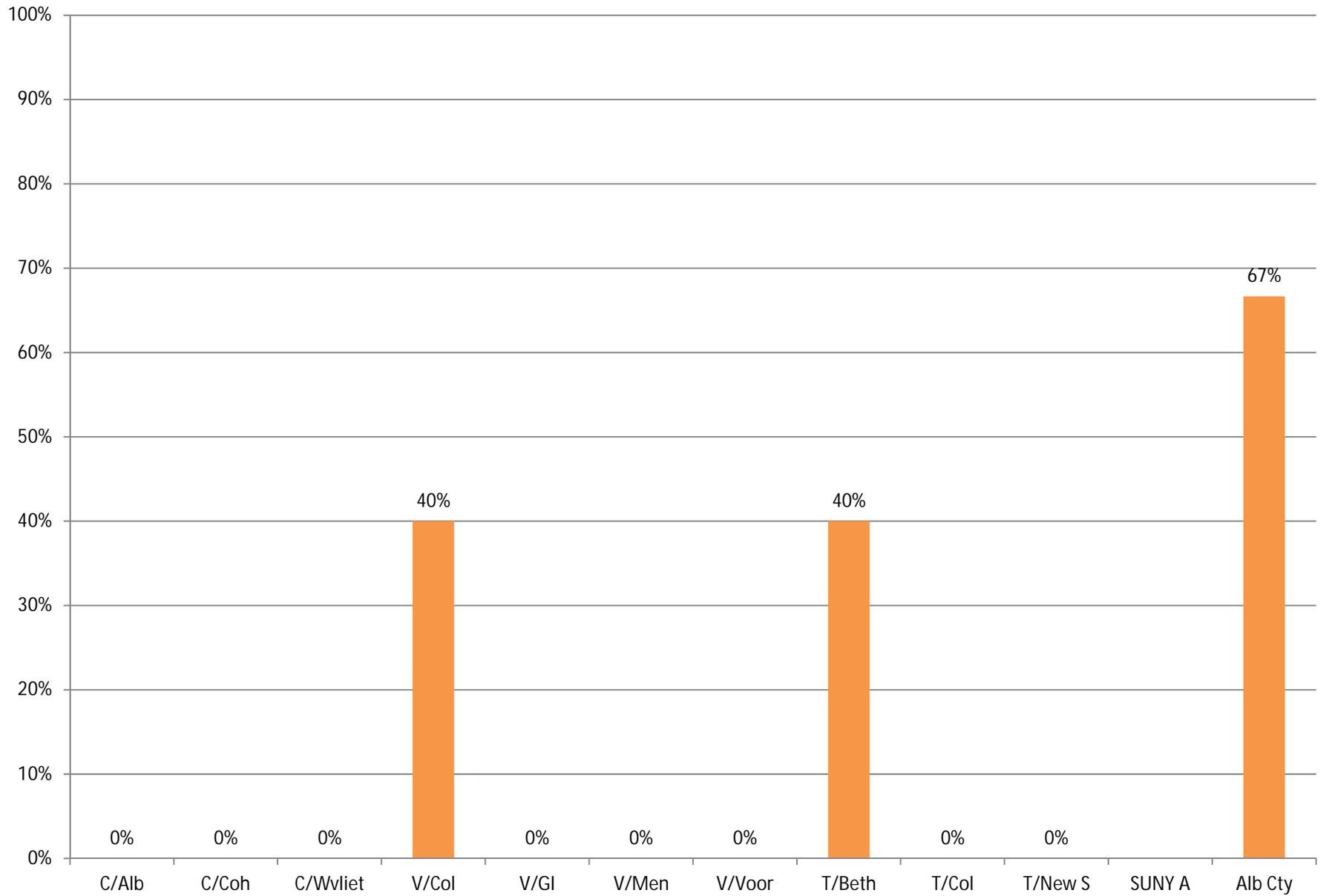
# Cul-de-Sacs:



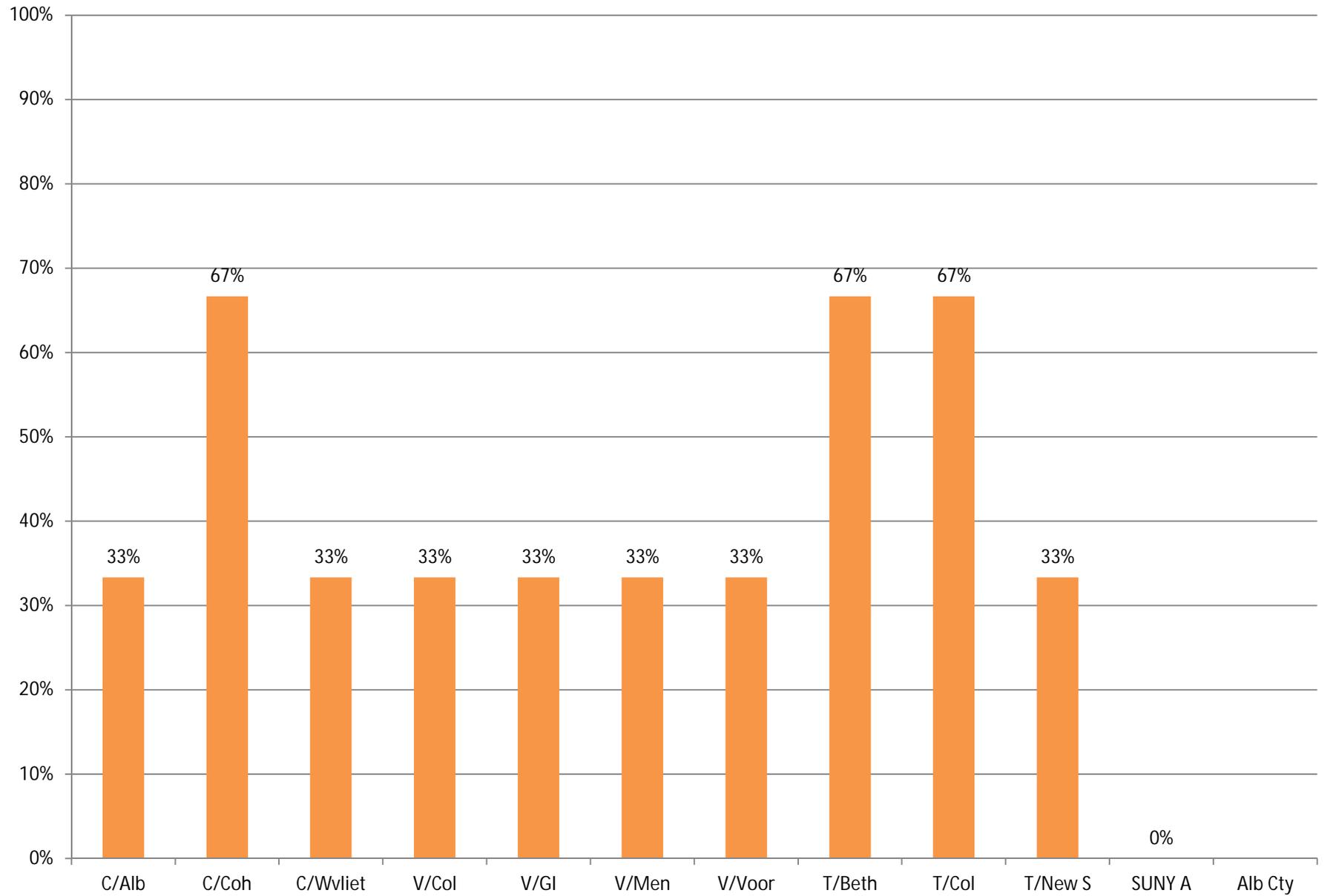
# Sidewalks and Curbs



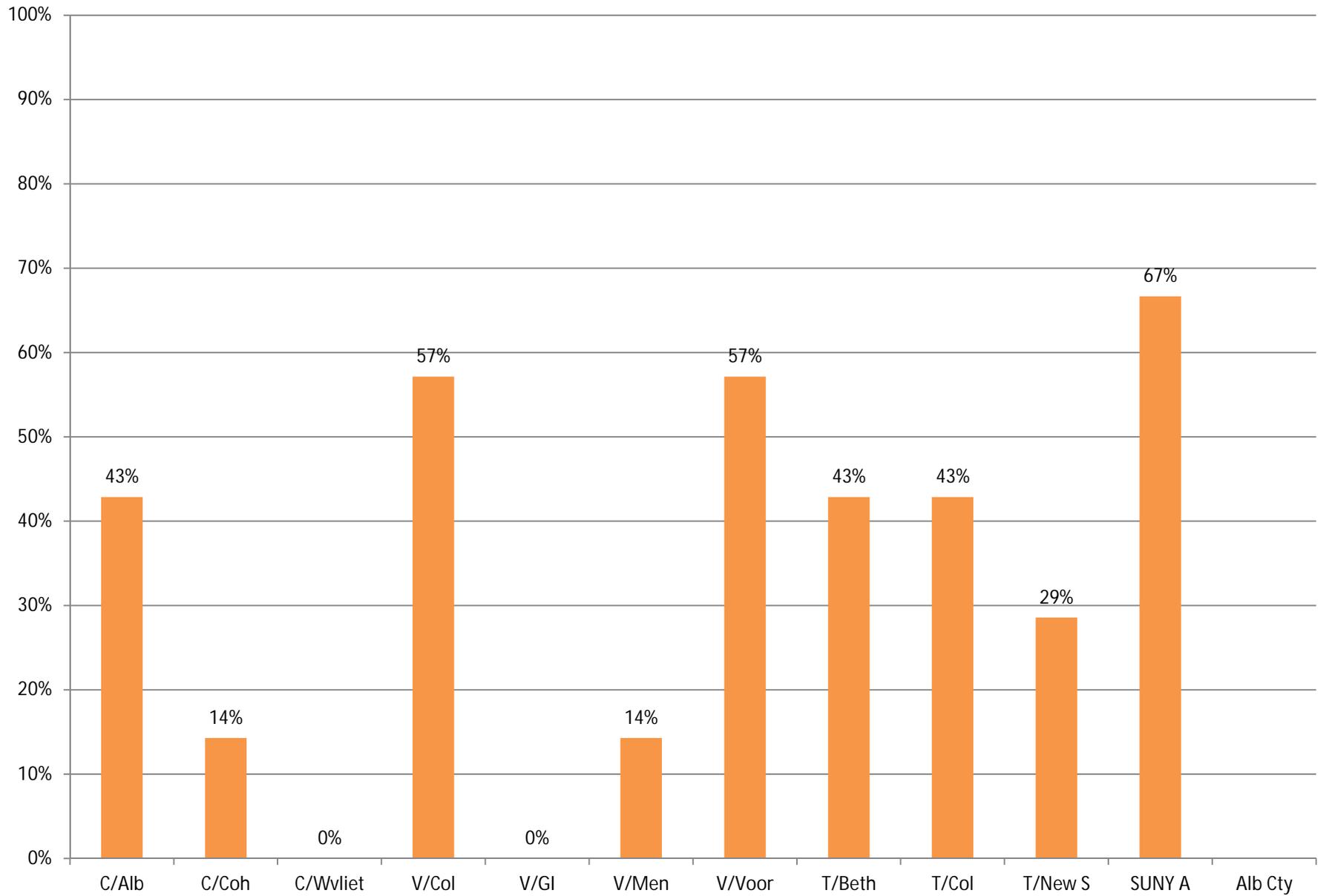
# Driveways



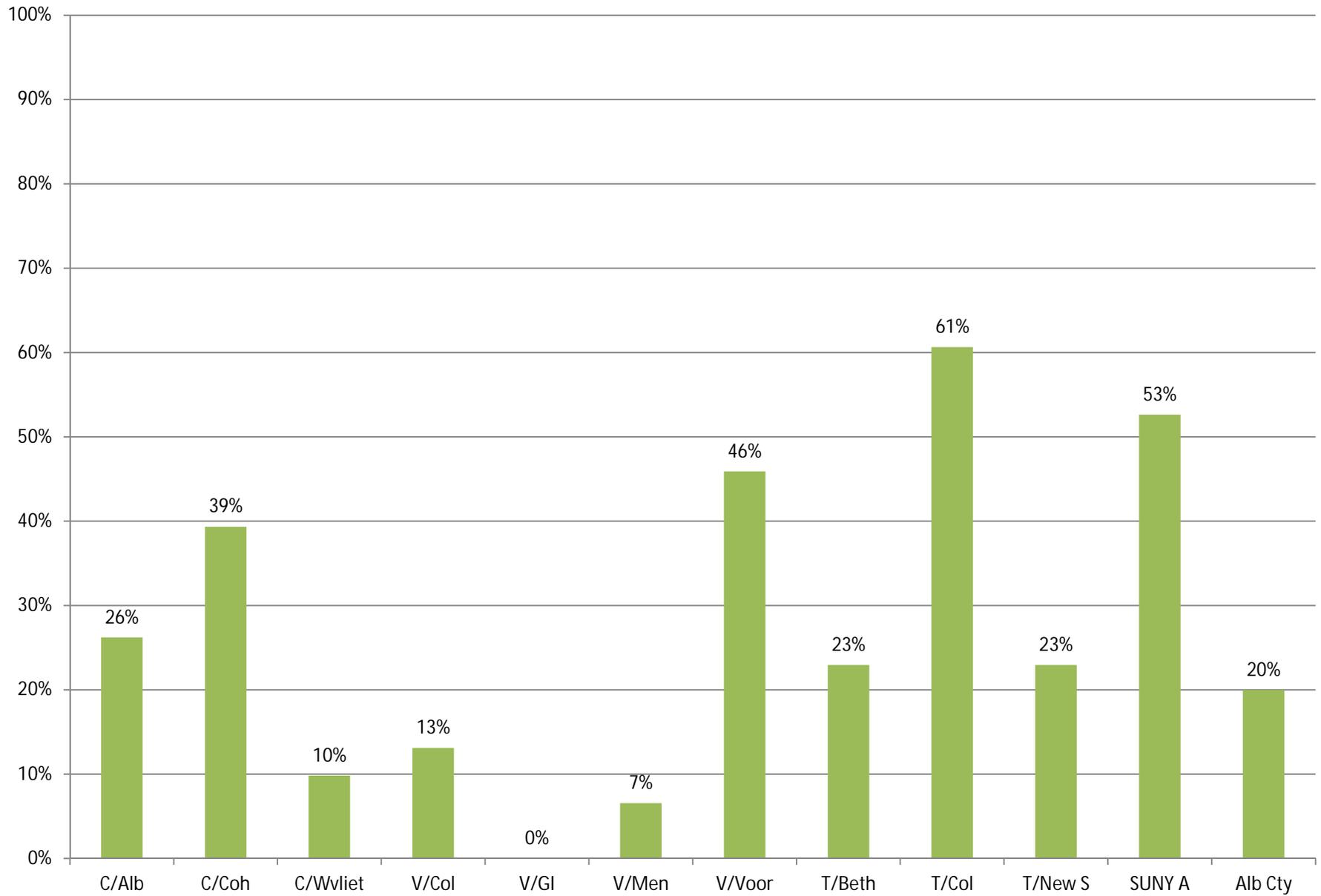
# Parking Ratios



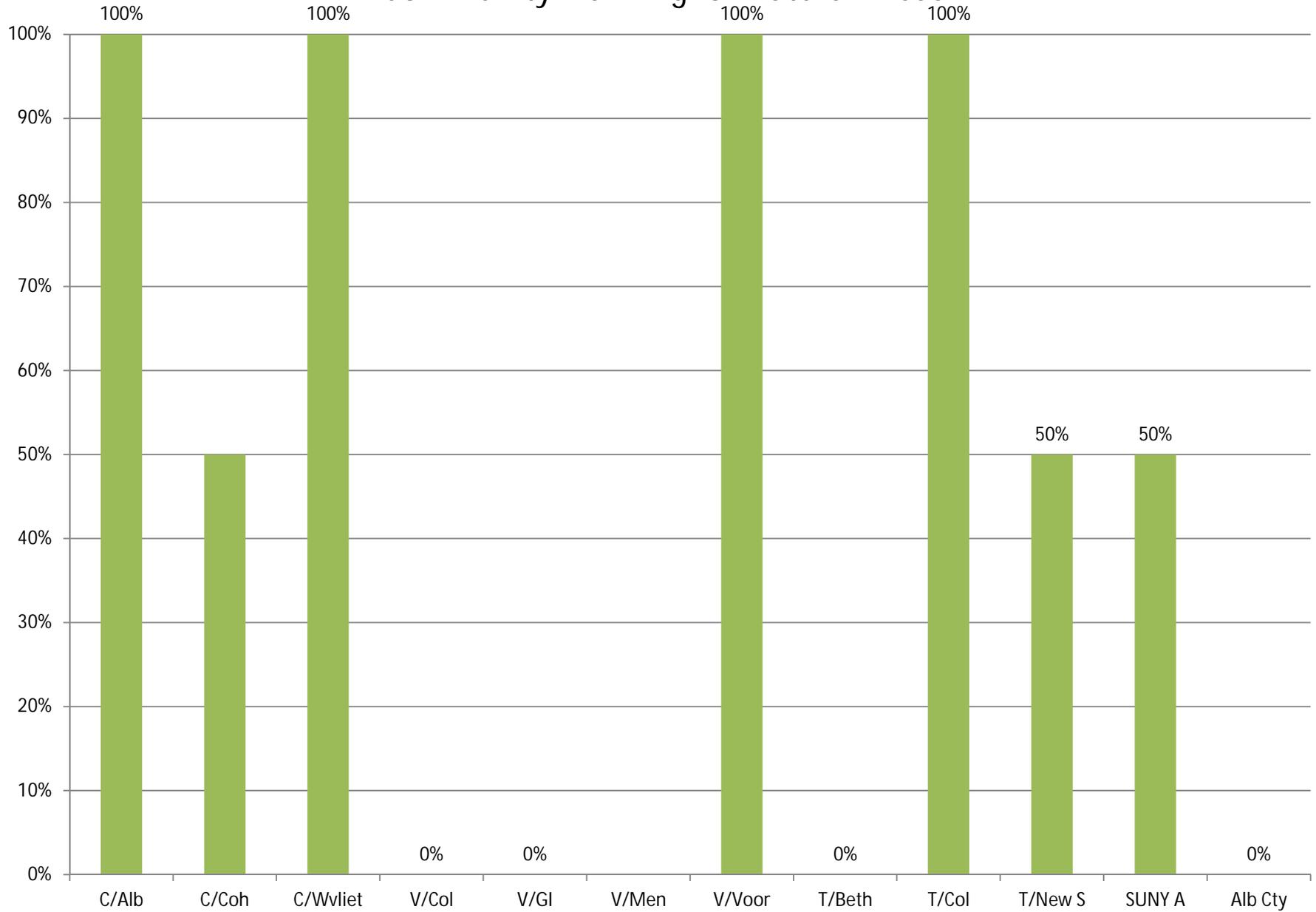
# Parking Lot Design Standards



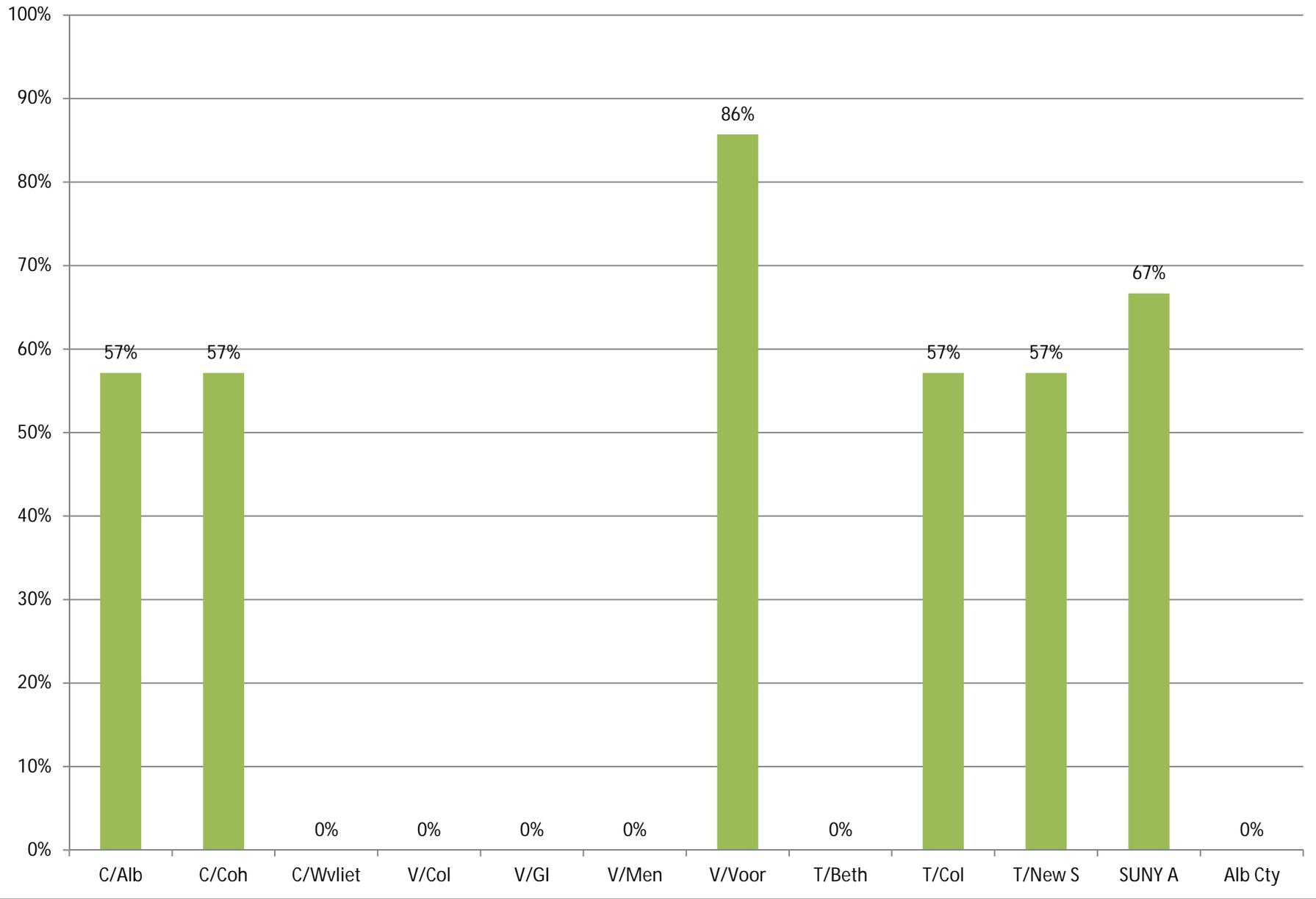
# Total Overall Category 2 Score



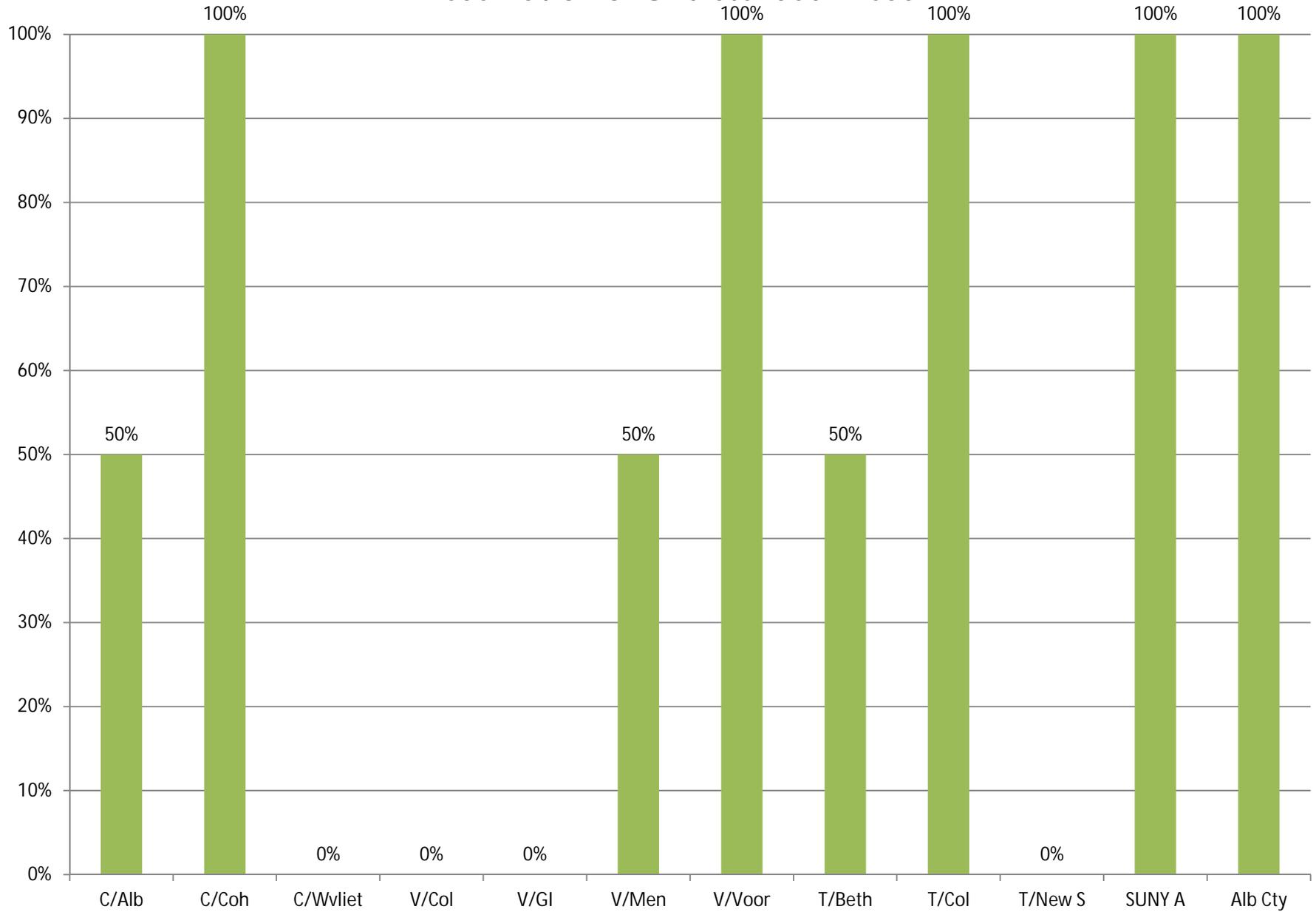
# Community Planning for Natural Areas



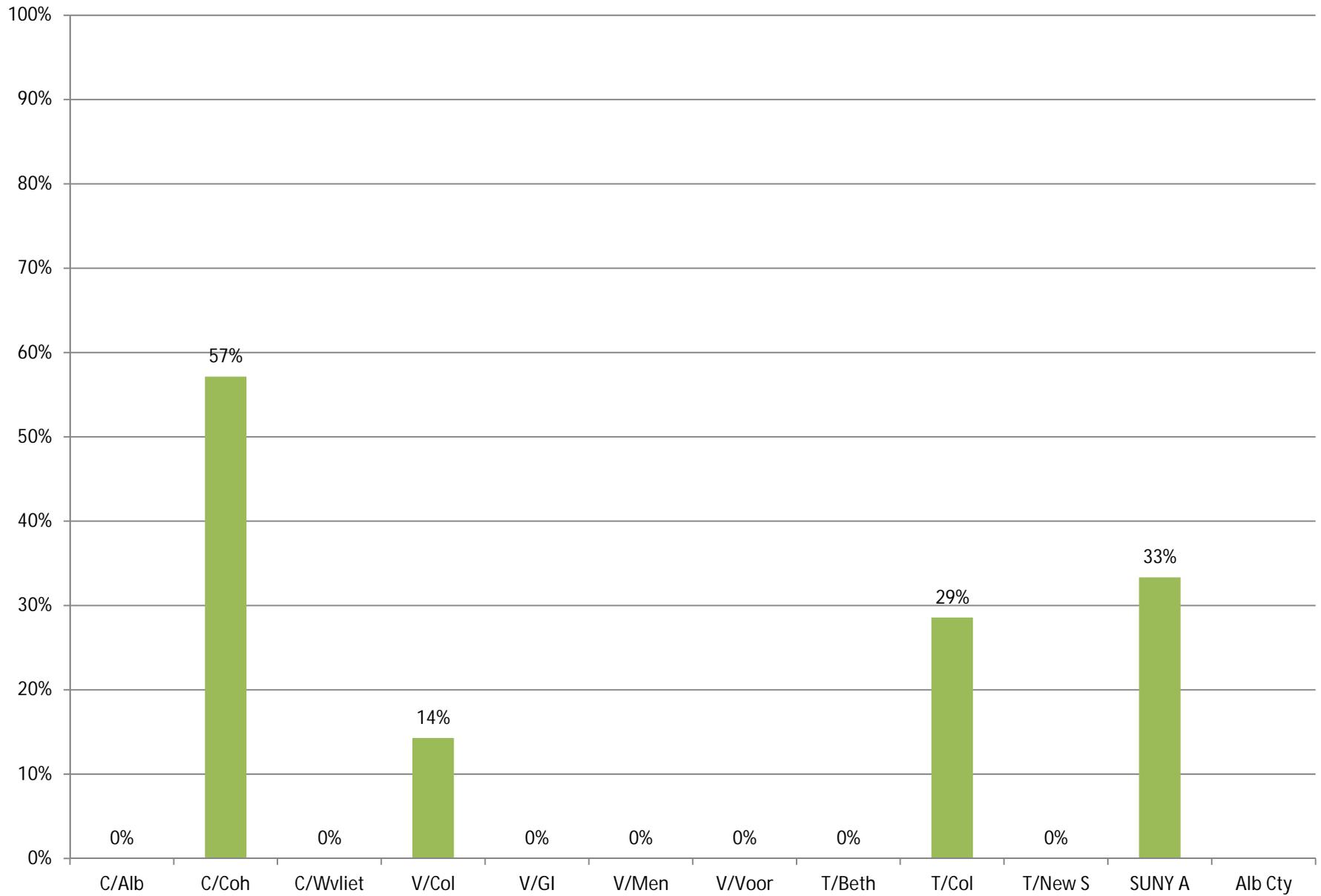
# Locating Sites in Less Sensitive Areas



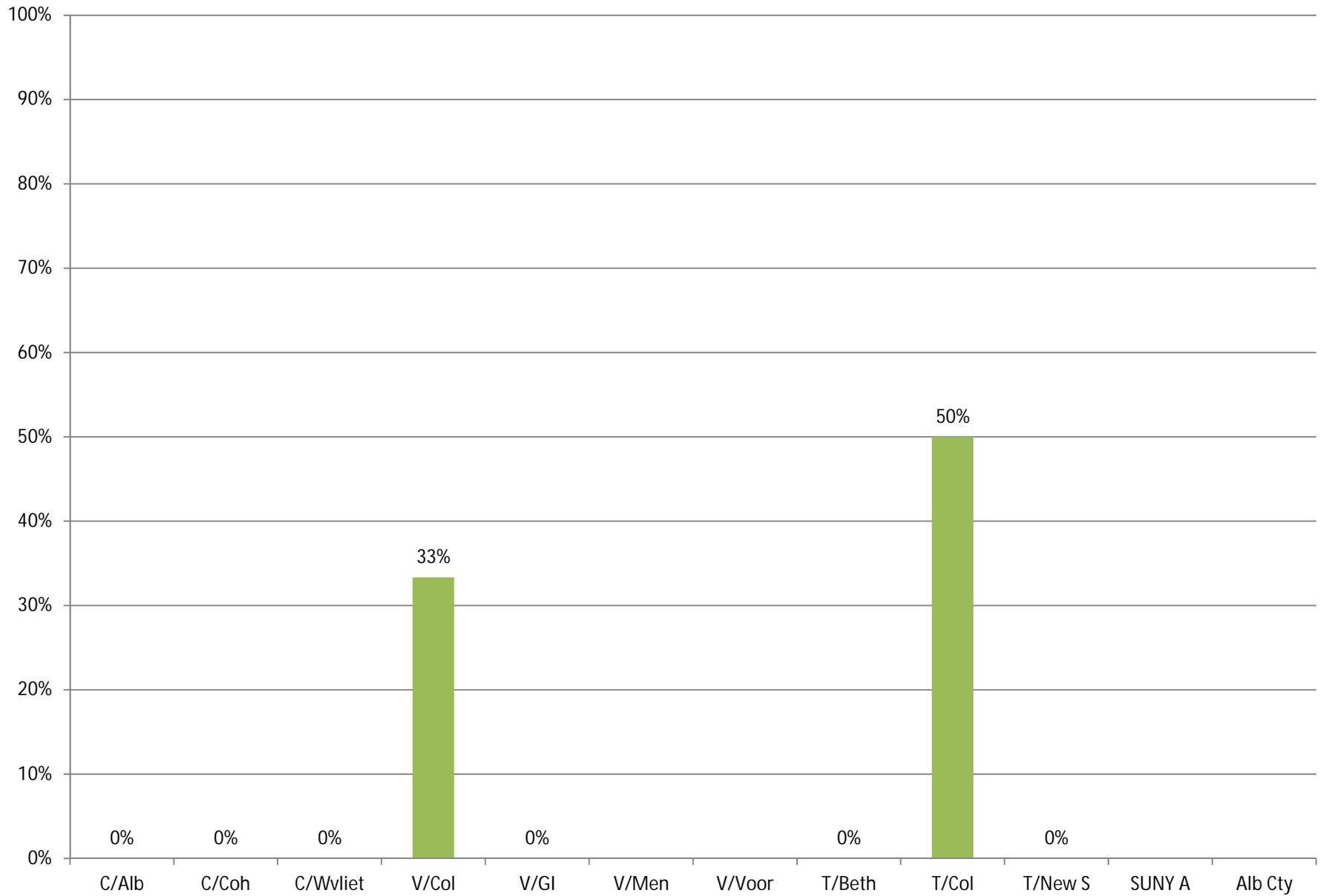
# Preservation of Undisturbed Areas



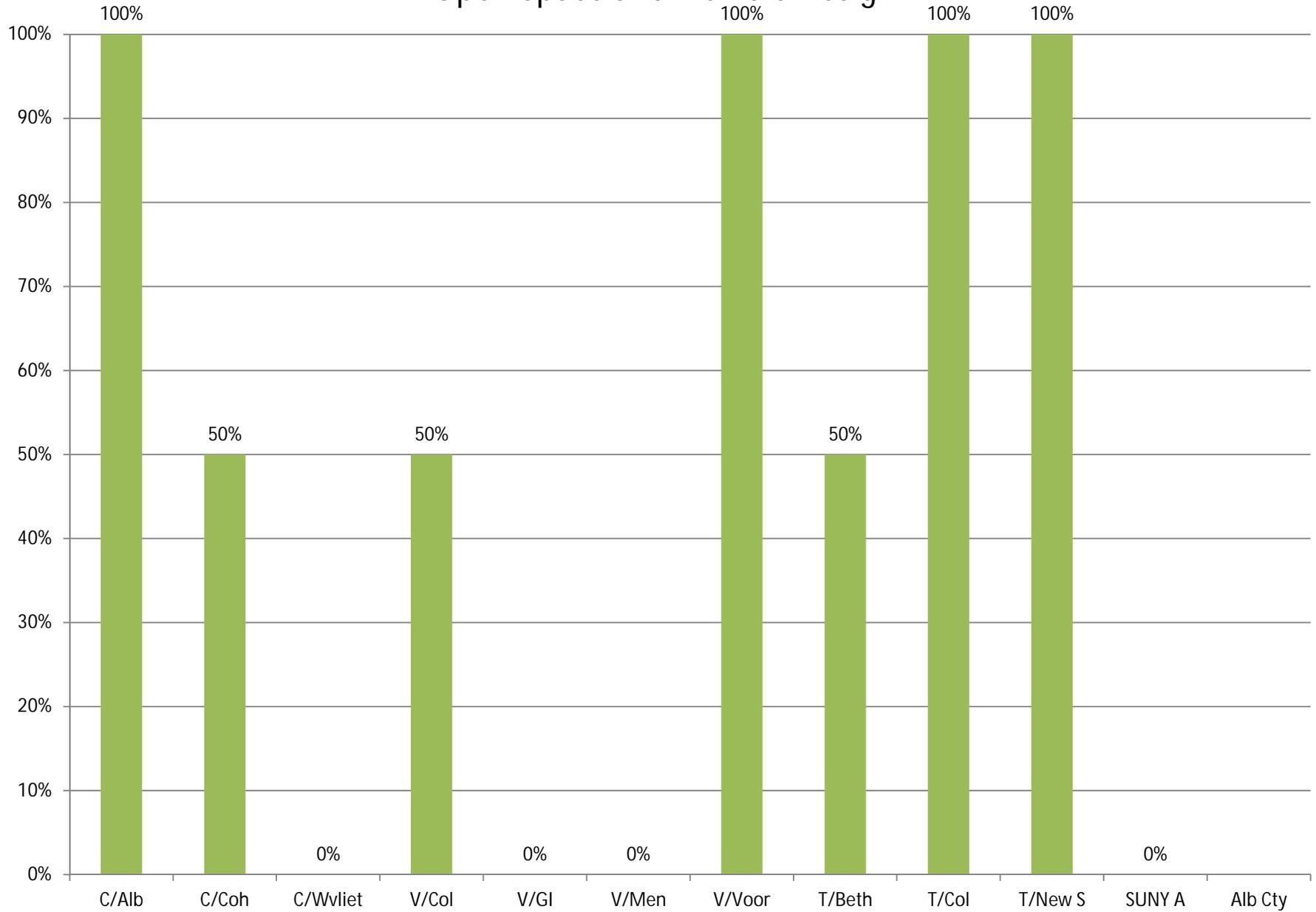
# Stream and Wetland Buffers



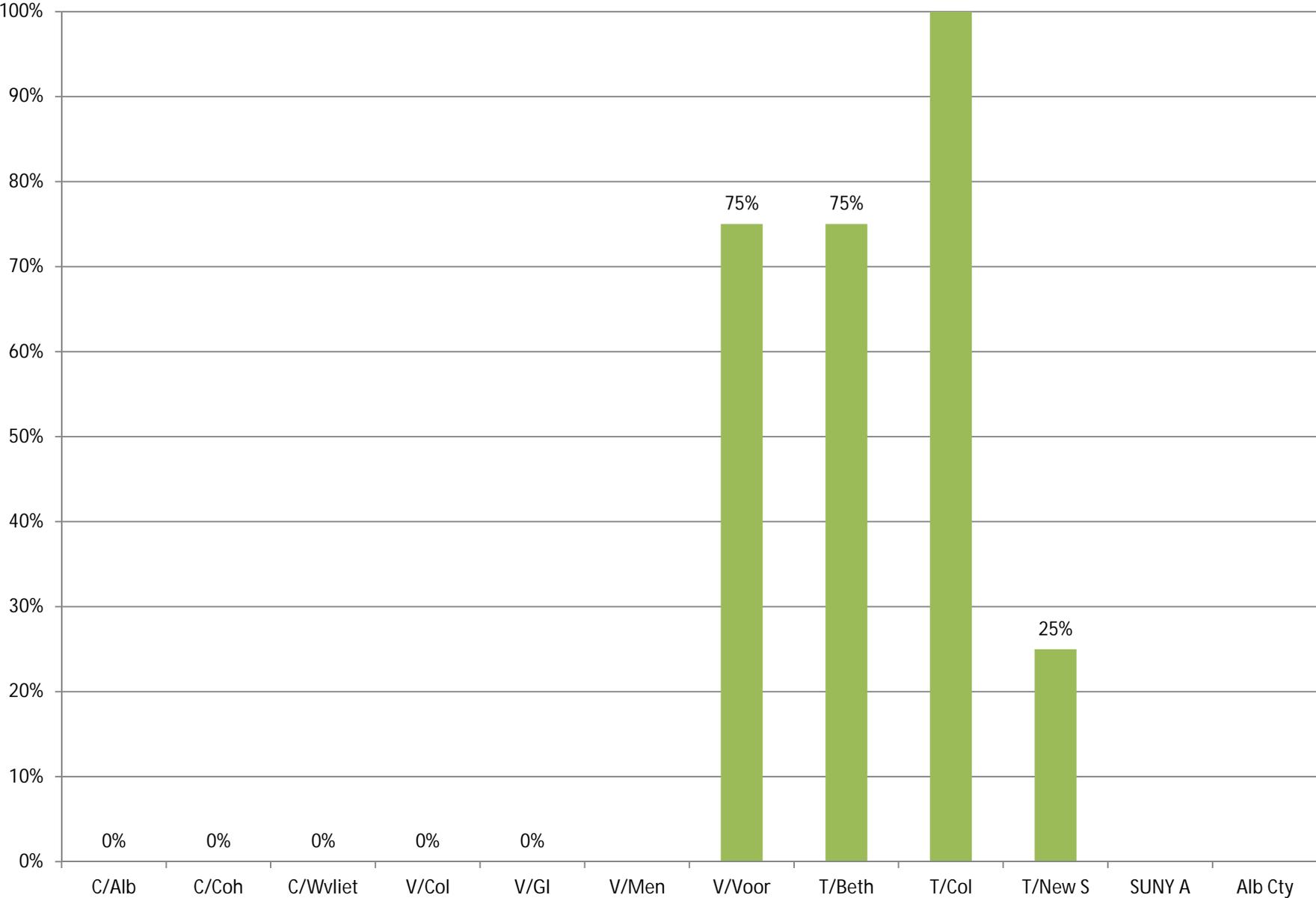
# Stream and Wetland Buffer Uses and Enforcement



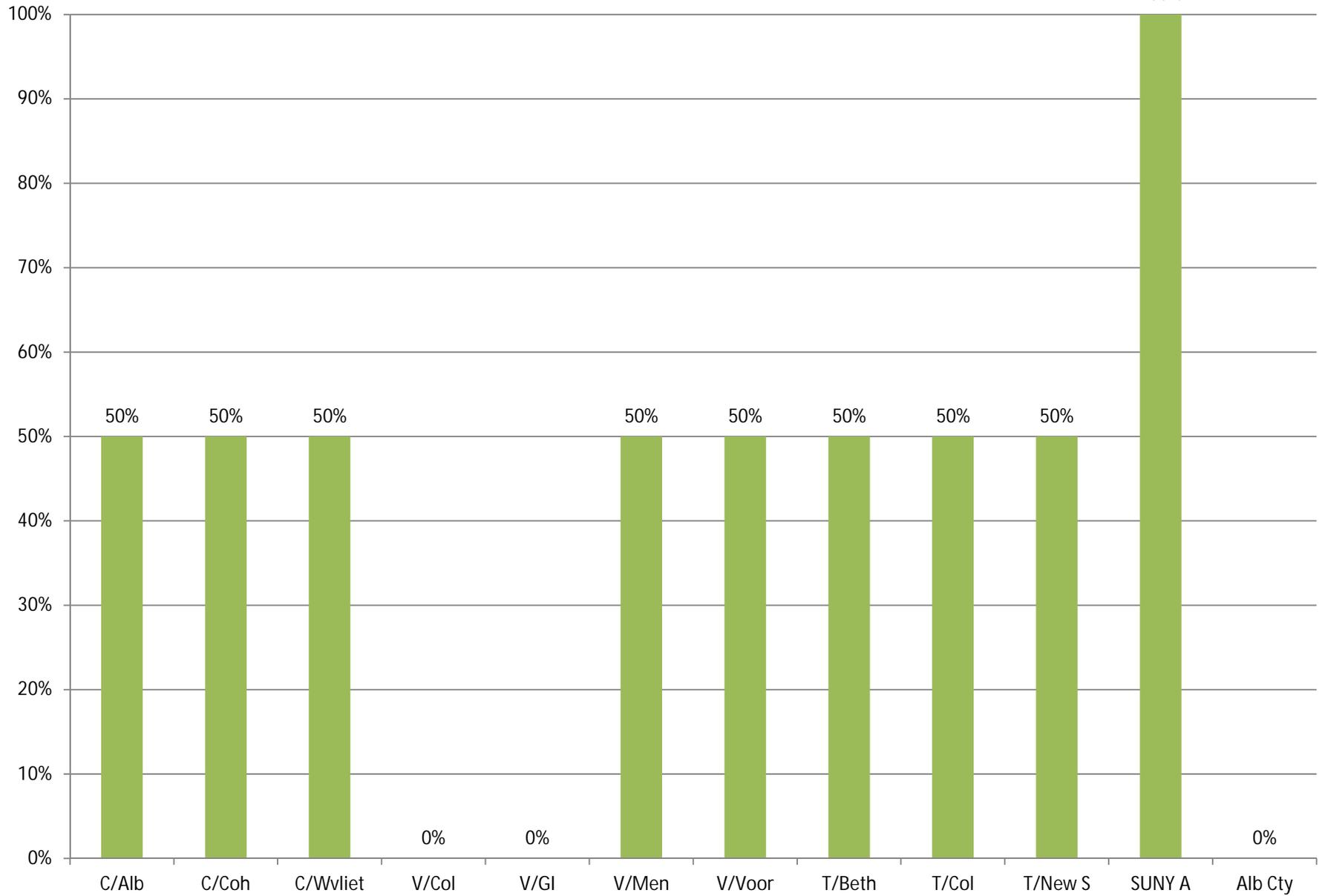
# Open Space and Flexible Design



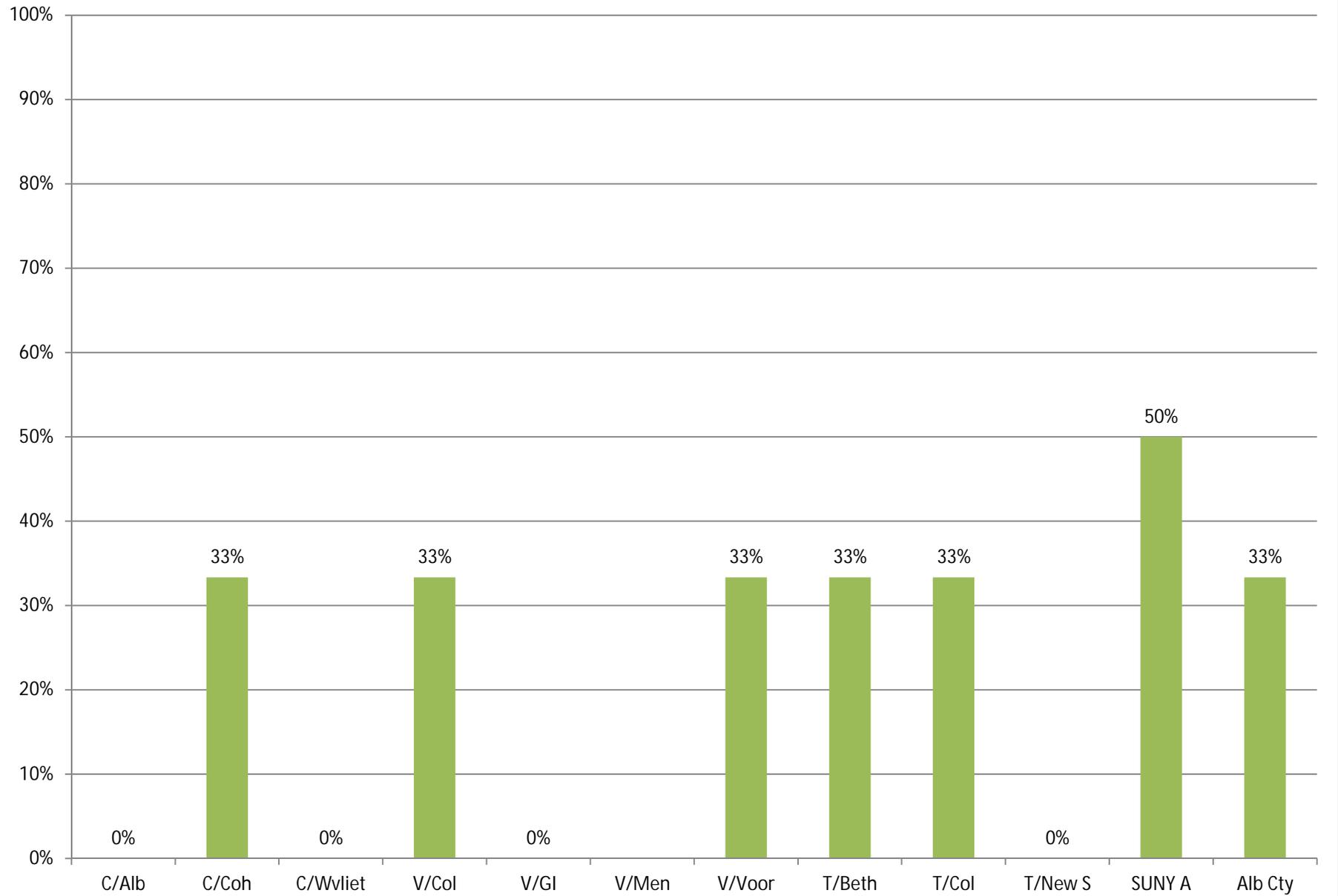
# Open Space Management



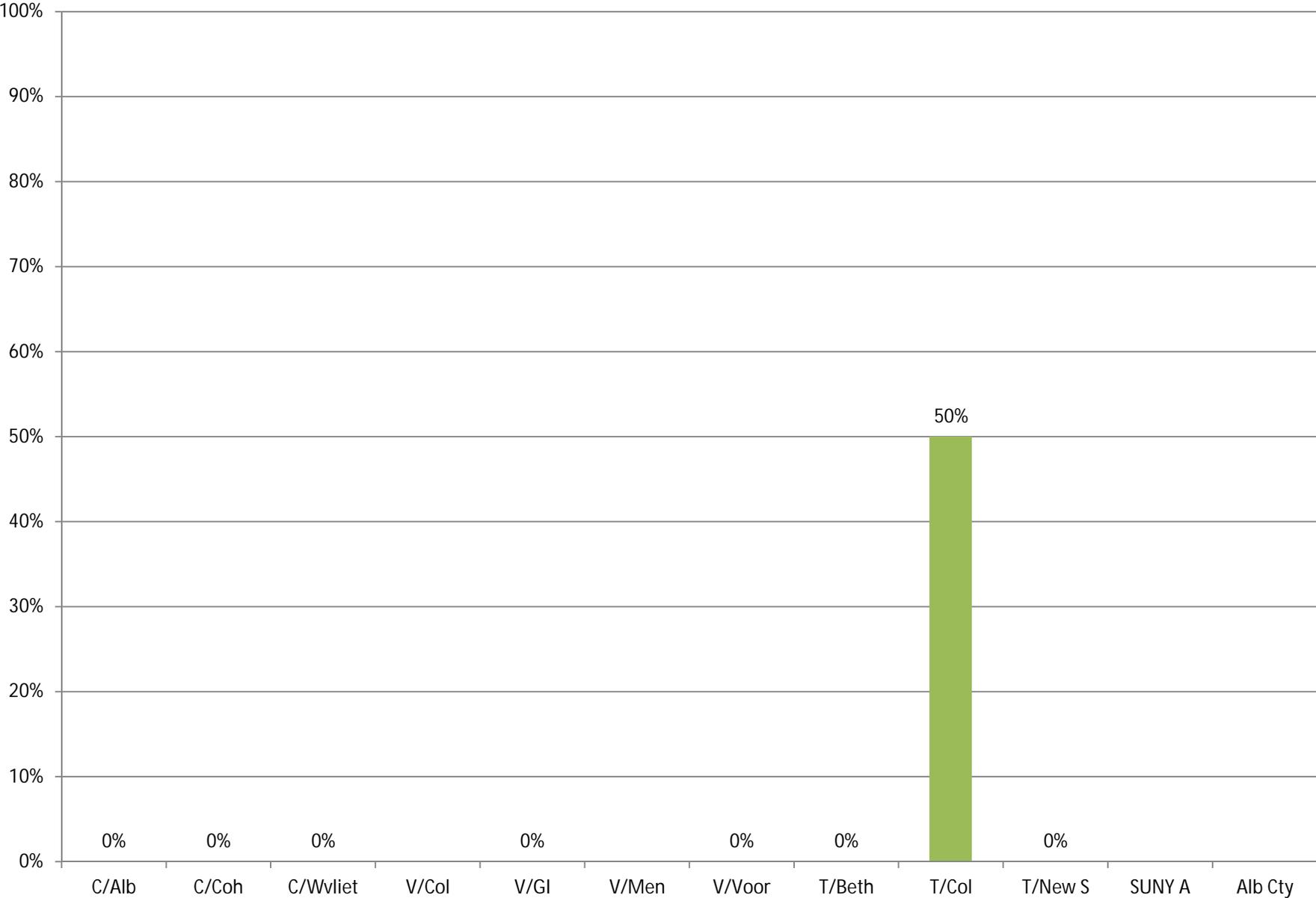
# Clearing and Grading



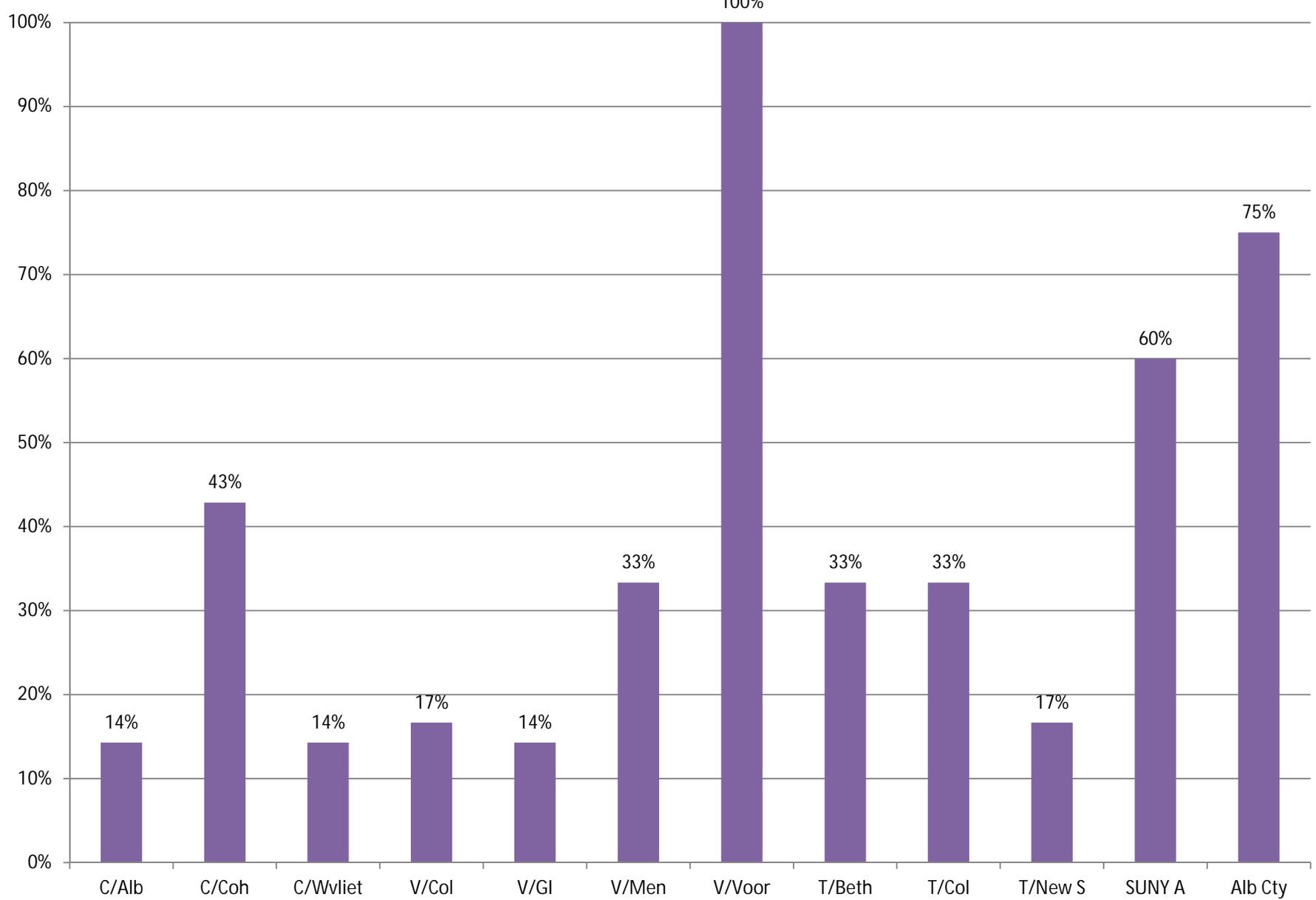
# Tree and Forest Conservation



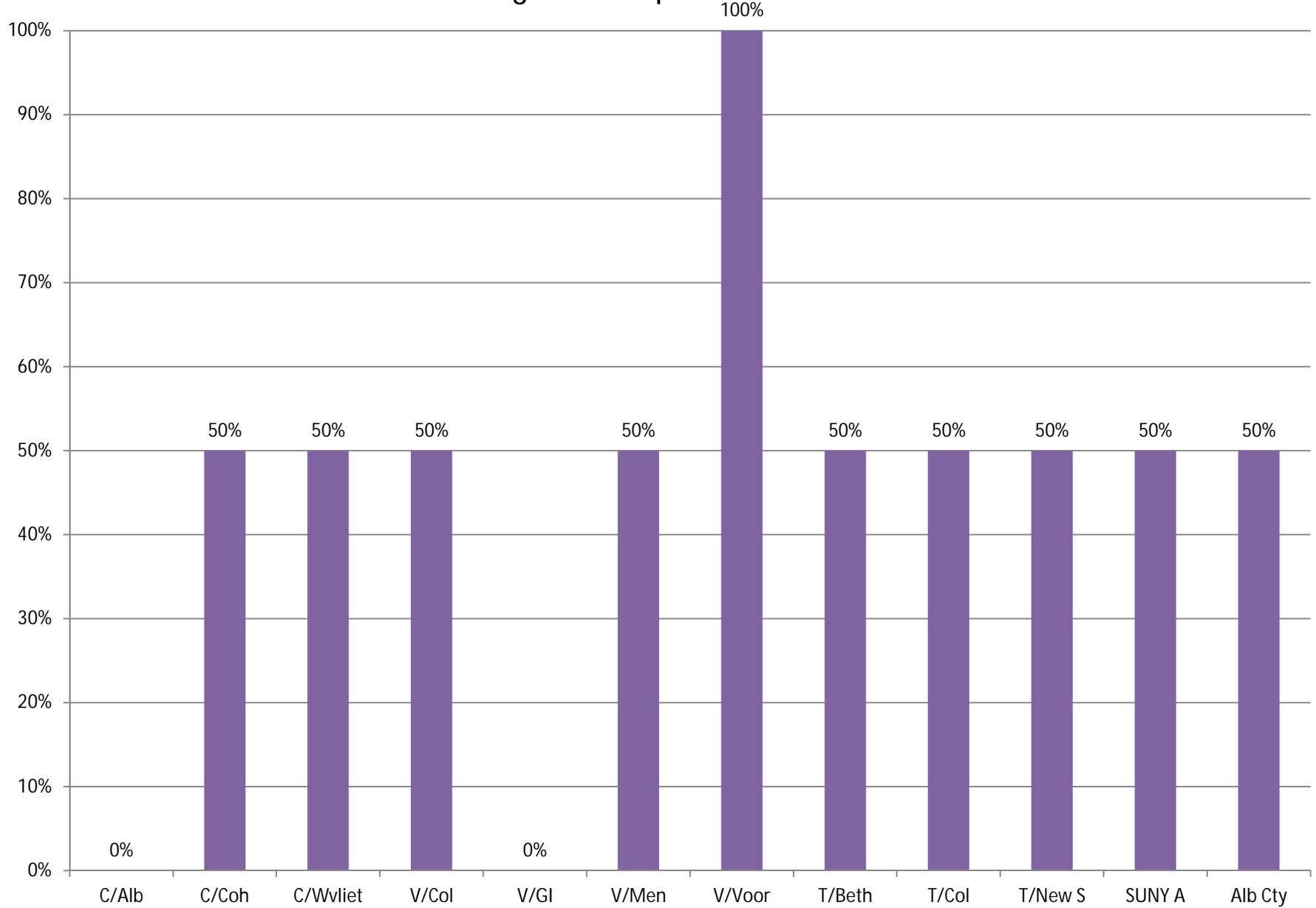
# Conservation Incentives-financial



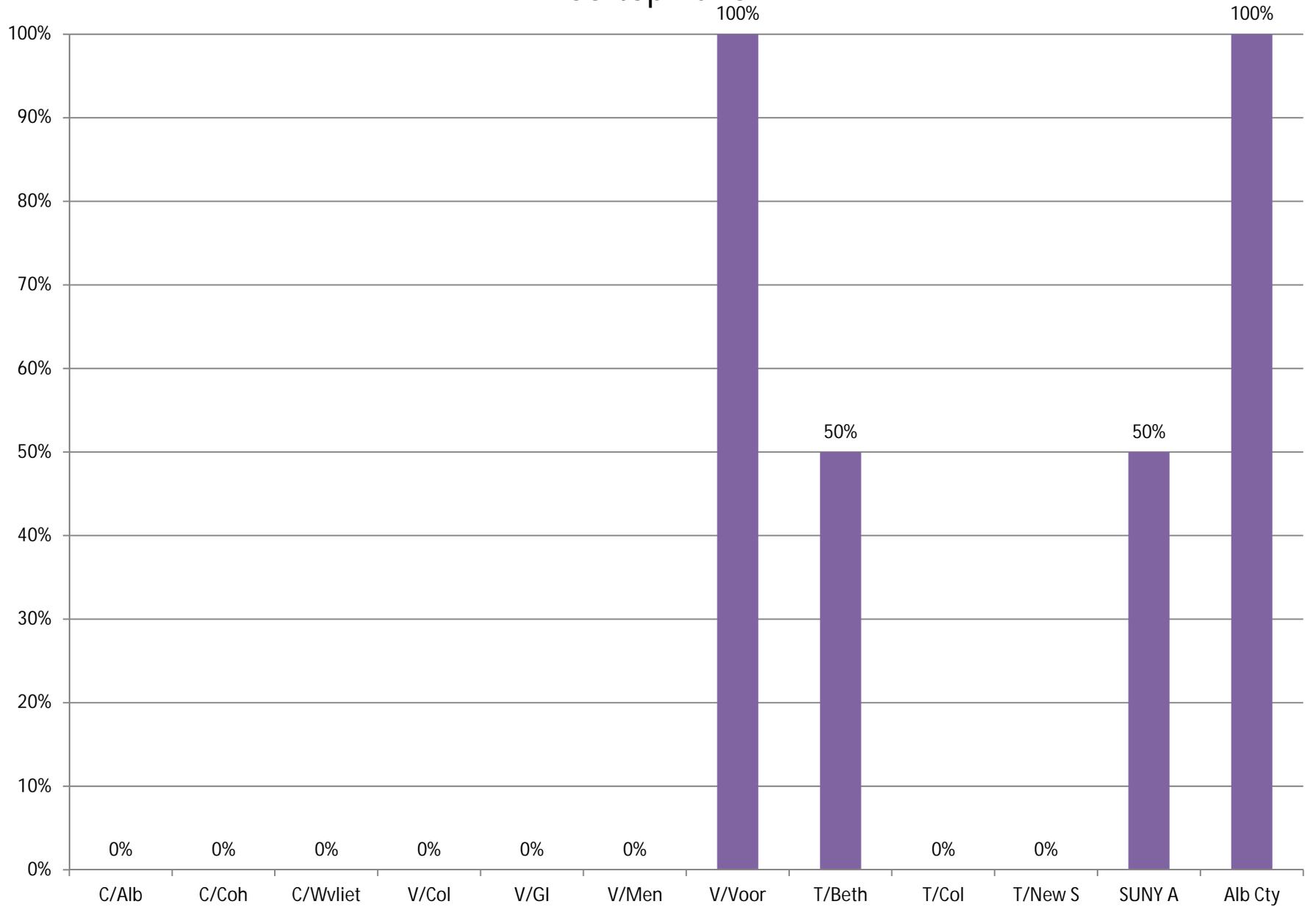
# Total Overall Category 3 Score



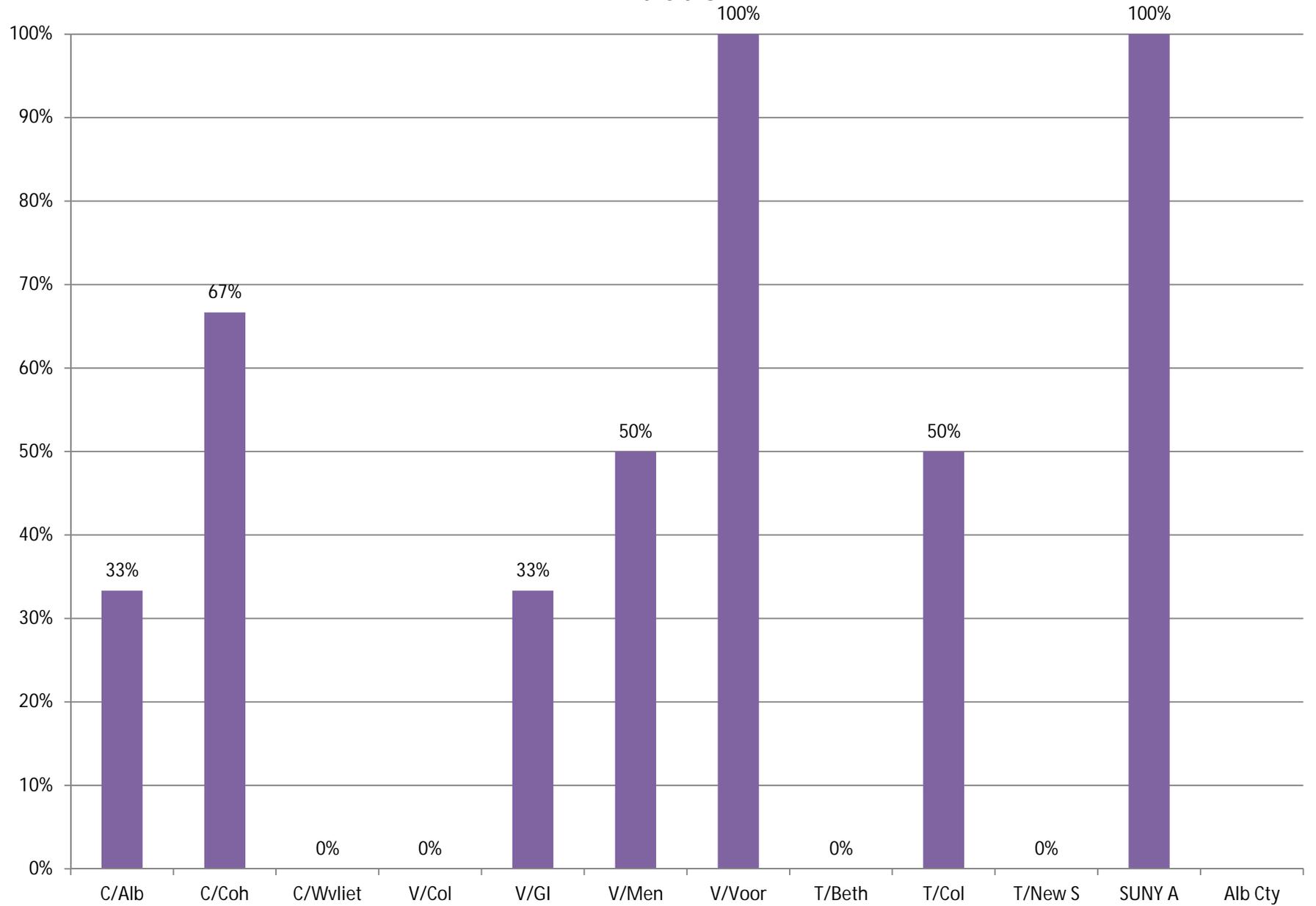
# Vegetated Open Channels



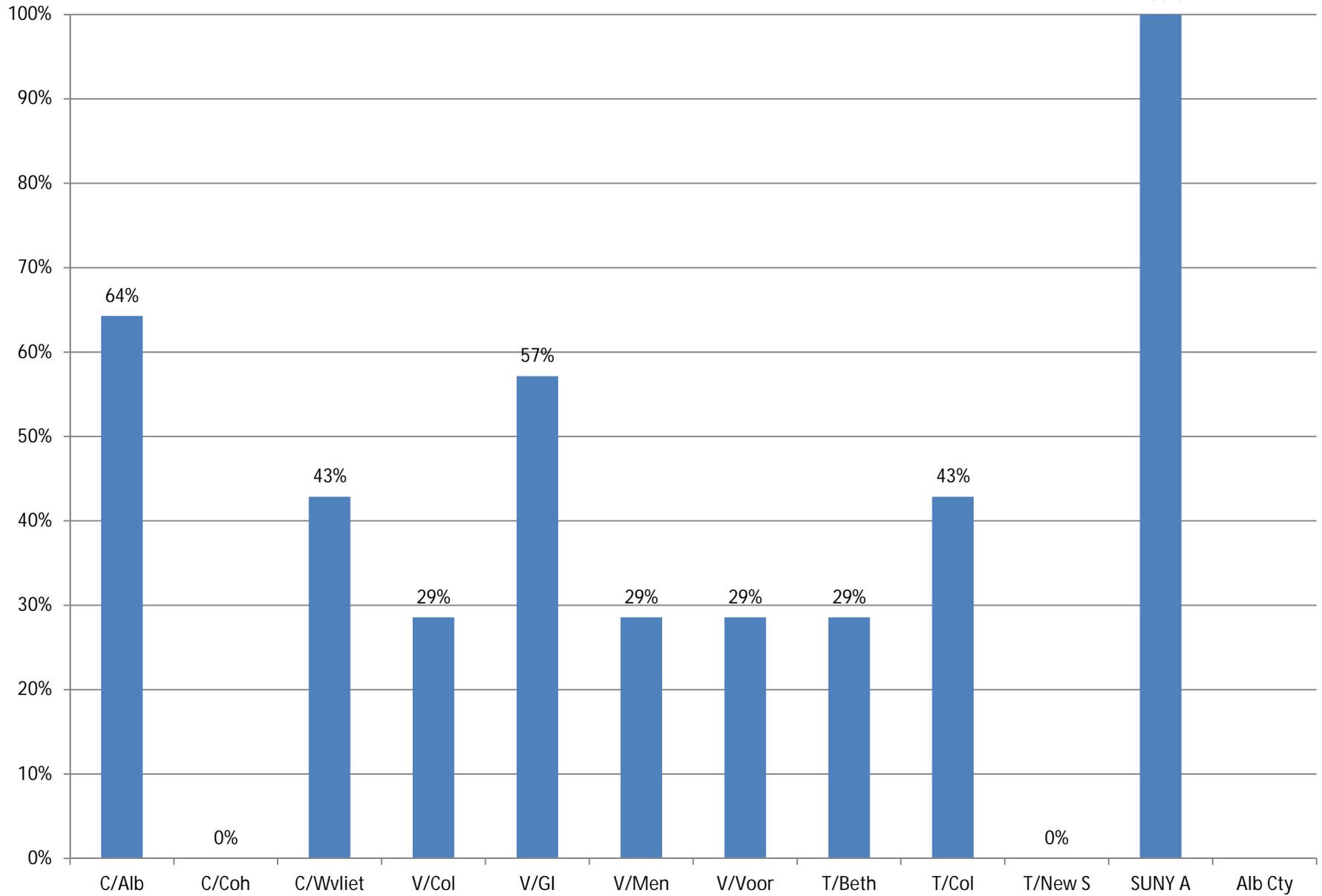
# Rooftop Runoff



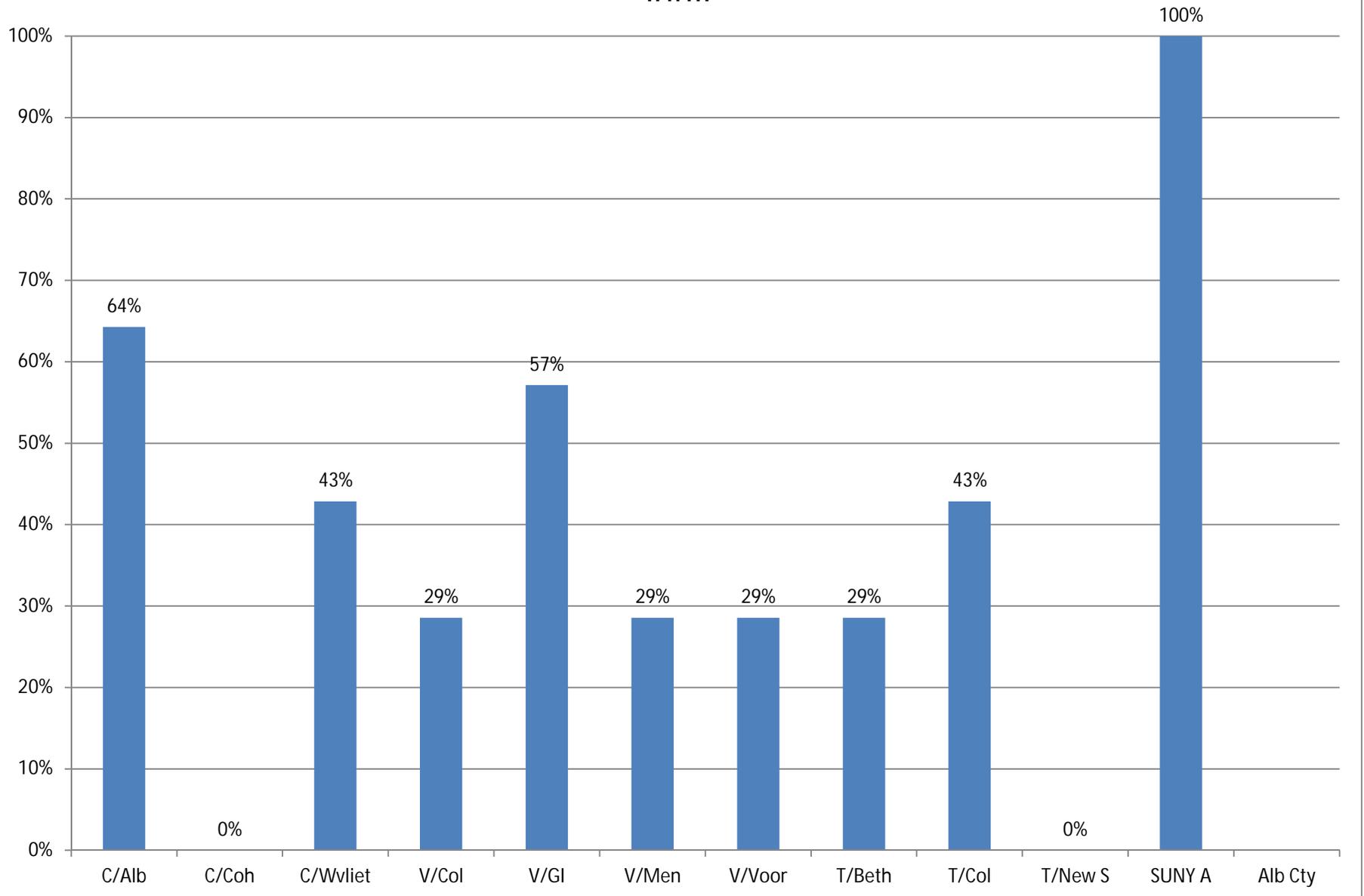
# Infiltration



# Total Overall Category 4 Score

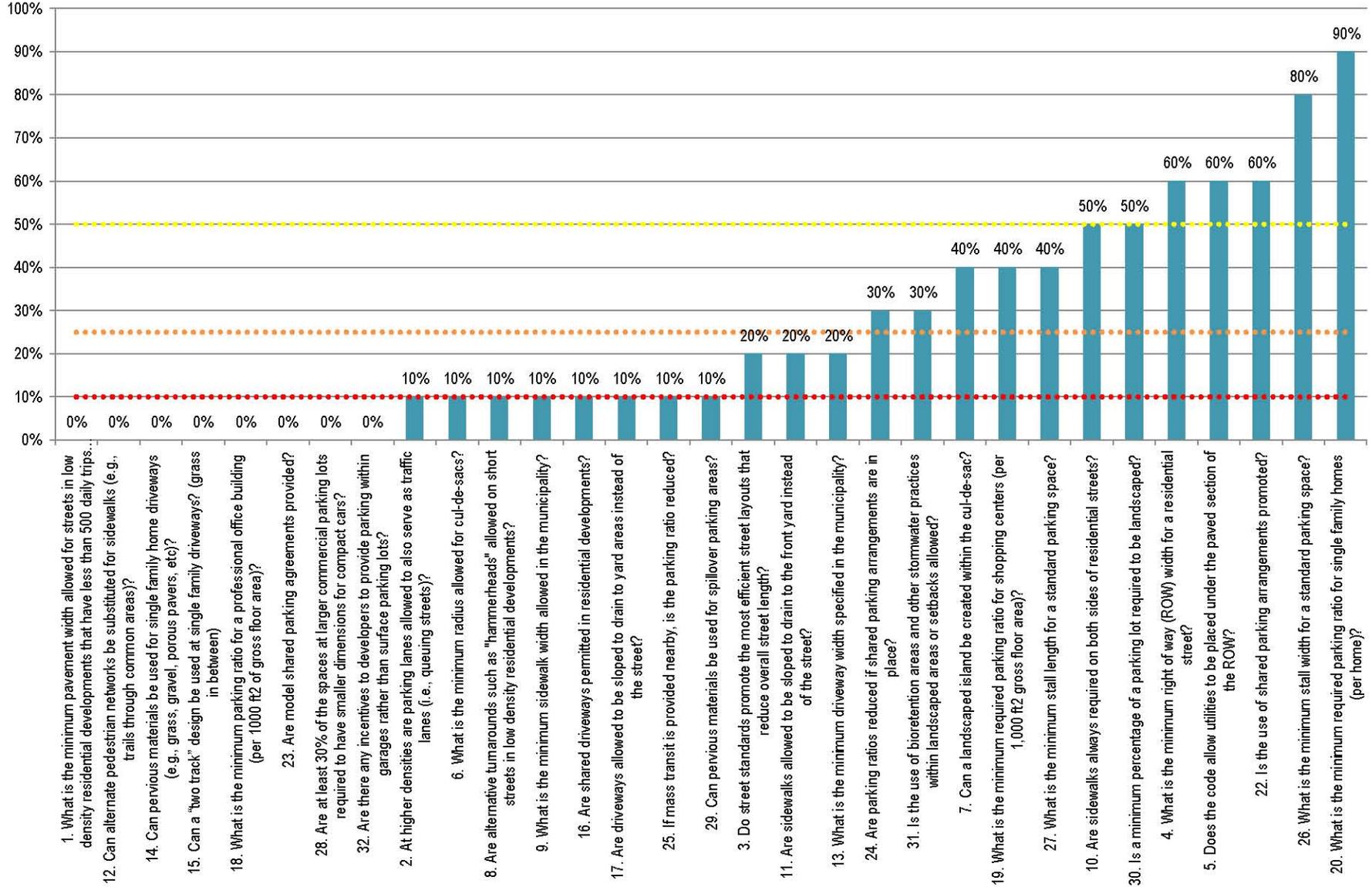


## Category IV: Promotion of efficient, compact development patterns and infill



**Appendix K**  
**Sorted Final Gap Identification**

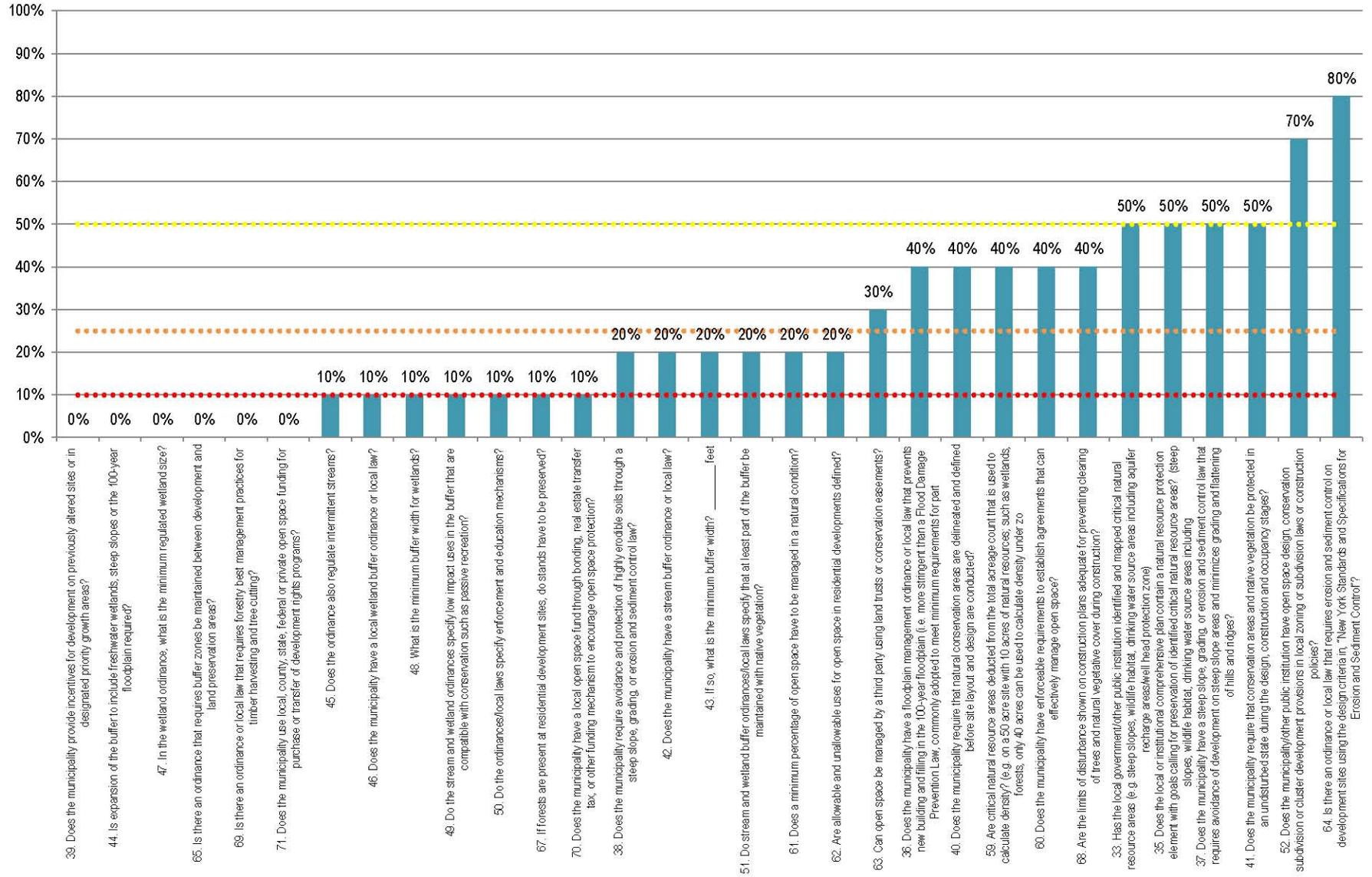
**Category I: Reduction of Impervious Cover**  
**% Attained Point**  
**10 "Traditional" Albany County MS4s-Cities, Villages, Towns**



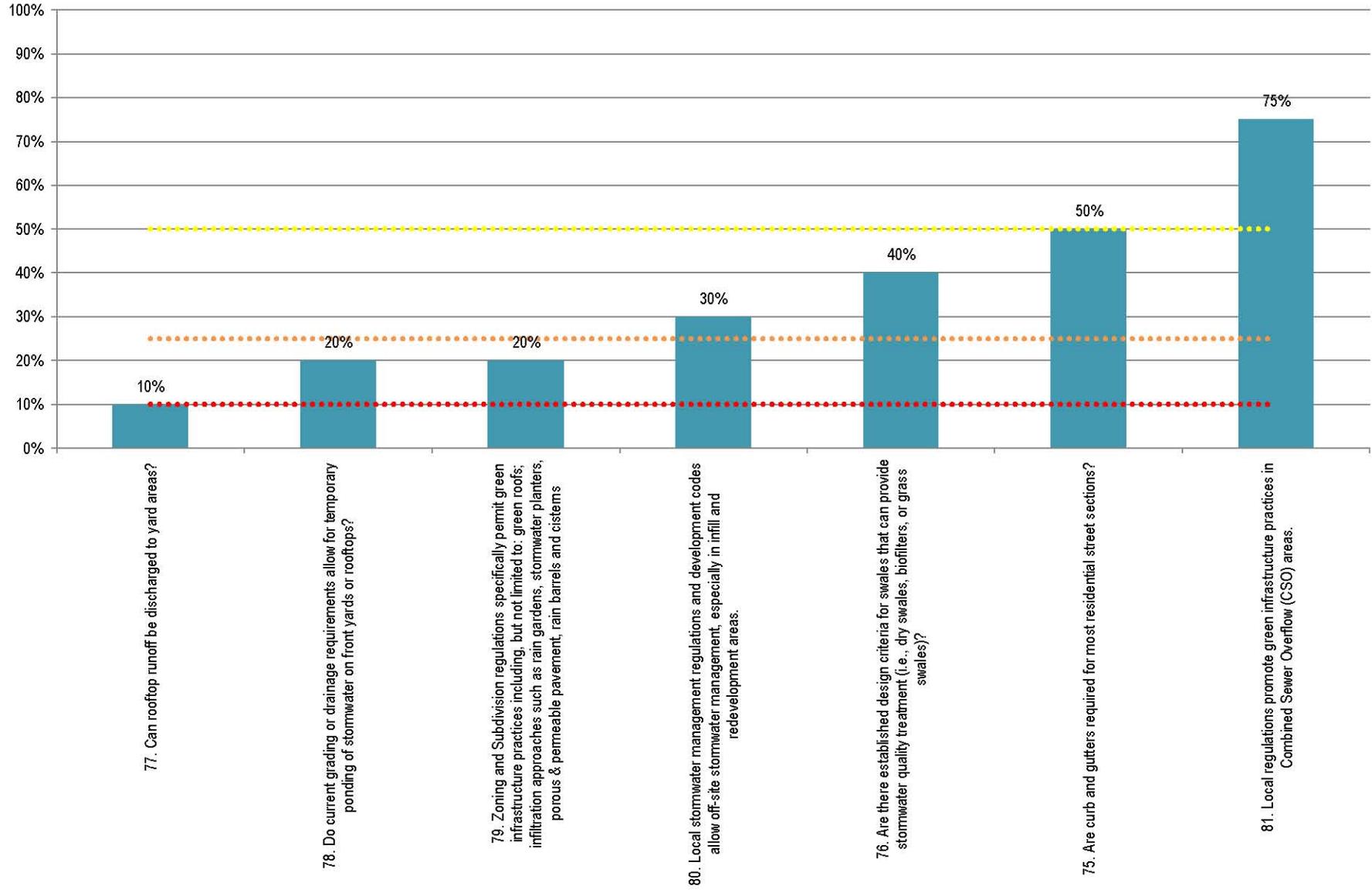
## Category II: Preservation of Natural Features and Conservation Design

### \$ Attained Points

### 10 "Traditional" Albany County MS4s-Cities, Villages, and Towns



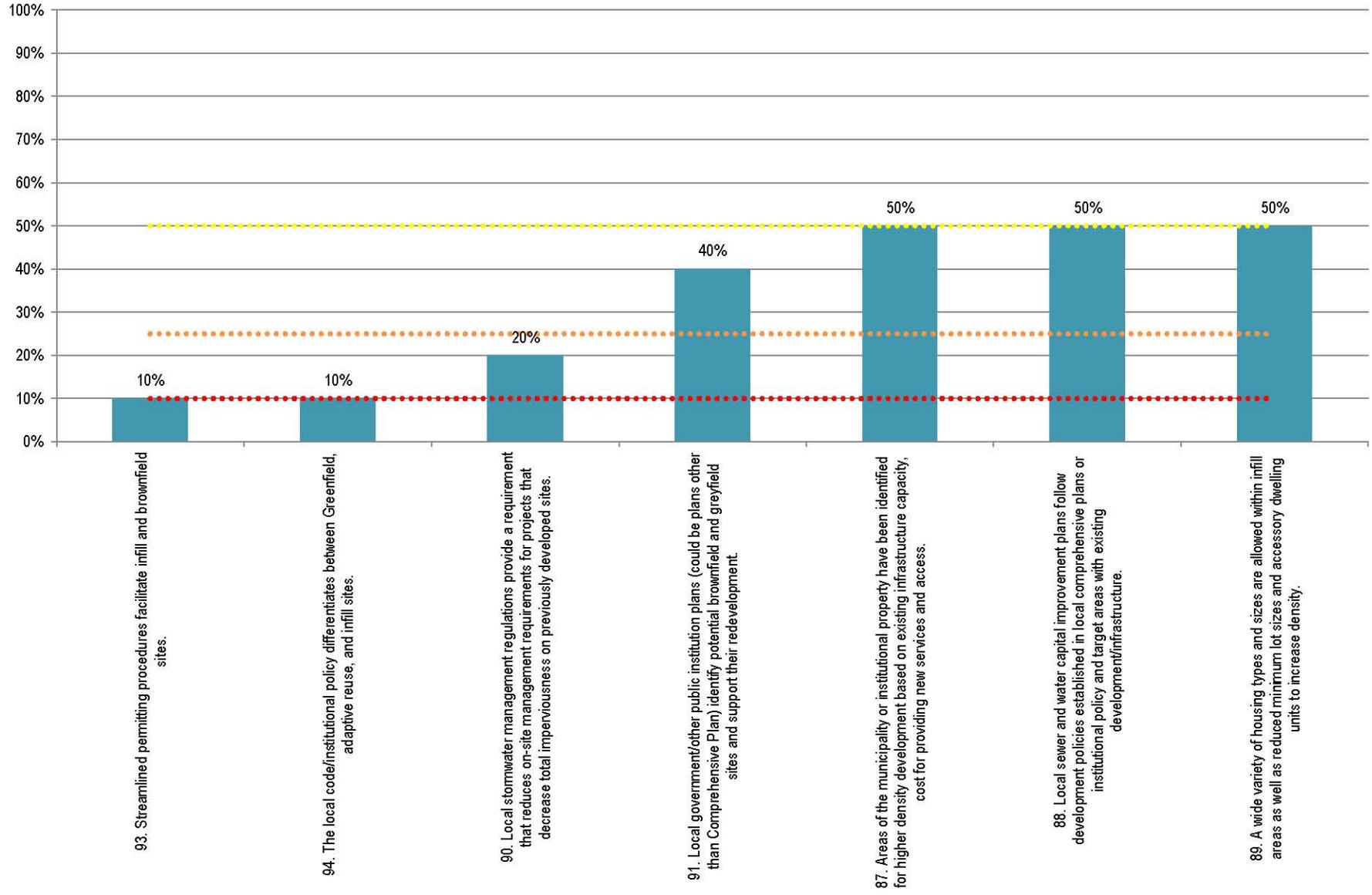
**Category III: Design Elements for Stormwater Management**  
**% Attained Points**  
**10 "Traditional" Albany County MS4s-Cities, Villages, Towns**



## Category IV: Promotion of Efficient, Compact Development Patterns

% Attained Point

### 10 "Traditional" Albany County MS4s - Cities, Villages, Towns



**Appendix L**  
**Gap Ranking**

NAME OF MS4:			N/A	ALL MS4s - Individual MS4 Rankings												TOTAL	TOTAL	Overall	
GAP ID	Sub Cat	Questions	CATEGORY	C/Alb	C/Coh	C/Wvit	V/Col	V/GI	V/Men	V/Vor	T/Beth	T/Col	T/NS	SUNYA	AlbCn	(Cumulative of Ind MS4 Rankings)	(Average of Ind MS4 Rankings)	Rankings (Top 8 in bold and gray)	
I-A	Parking Ratios	18, 19	Category I: Reduction of Impervious Cover																
	Parking Lot Design	27, 28, 29, 30, 31, 32																	
	Shared Parking	23,24,25																	
		skip #'s 20, 22, 26			2	2	1	1	9	6	3	7	1	4	7	43	3.91	<b>1</b>	
I-B	Street width and length	1,2,3,			14	10	14	4	8	8	10	13	2	6	10	99	9.00	12	
I-C	Sidewalks and Curbs	9,11,12																	
		skip # 10			13	9	13	2	7	7	6	12	3	8	13	93	8.45	<b>8</b>	
I-D	Cul-de-Sacs	6,7,8			12	14	11	8	6	1	7	4	5	5	12	85	7.73	<b>7</b>	
I-E	Driveways	13, 14, 15, 16, 17		11	4	10	3	5	12	12	11	11	7	14	100	9.09	13		
I-F	Model Local Law Language for County, GI Matrix; Guidelines SUNY			10	8	12	7	3	14	14	8	6	1	1	84	7.64	<b>6</b>		
II-A	Locating Site In Less Sensitive Areas	37*, 38, 39 (*50% Q)	Category II: Preservation of Natural Areas and Conservation Design																
	Clearing and Grading																		
		Skip # 36 FEMA allows development in flood plain, if follow flood plain requirements; 64; 65			3	7	7	6	1	13	1	6	7	9	4	64	5.82	<b>4</b>	
II-B	Open Space Management - BSD angle	60*, 61, 62 (*40% Q) skip #63			4	5	6	12	4	5	11	5	8	10	11	81	7.36	<b>5</b>	
II-C	Stream Buffers	42,43,44,45,49,50,51			9	13	3	11	11	2	2	9	13	13	8	94	8.55	9 or 10 (Tie)	
II-D	Wetland Buffers	46,47,48,49,50,51			8	12	4	9	12	4	8	14	14	14	9	108	9.82	14	
II-E	Tree and Forest Conservation	67, 68, 69			7	3	5	14	14	10	9	10	9	11	5	97	8.82	11	
II-F	Conservation Incentives-financial	70, 71																	
	Preservation of Undisturbed Areas	40* (*40% Q)		1	11	9	10	13	11	13	1	10	12	3	94	8.55	9 or 10 (Tie)		
III-A	Rooftop Runoff	77,78	Category III: SW Mgmt Design Elements		6	1	2	5	2	9	4	2	12	2	6	51	4.64	<b>2</b>	
III-B	Vegetated Open Channels	76* (*40% Q)		5	6	8	13	10	3	5	3	4	3	2	62	5.64	<b>3</b>		

Rank	GAP ID	Sub Category	Questions	Category
1	I-A	<b>Parking Ratios</b>	18, 19	Category I: Reduction of Impervious Cover
		18. What is the minimum parking ratio for a professional office building (per 1000 ft2 of gross floor area)? _____ spaces If your answer is <b>less than 3.0 spaces</b> , give yourself 1 point.		
		19. What is the minimum required parking ratio for shopping centers (per 1,000 ft2 gross floor area)? _____ spaces If your answer is <b>4.5 spaces or less</b> , give yourself 1 point.		
		<b>Parking Lot Design</b>	27, 28, 29, 30, 31, 32	
		27. What is the minimum stall length for a standard parking space? _____ feet If your answer is <b>18 feet or less</b> , give yourself 1 point		
		28. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars? If your answer is YES, give yourself 1 point		
		29. Can pervious materials be used for spillover parking areas? If your answer is YES, give yourself 1 point		
		30. Is a minimum percentage of a parking lot required to be landscaped? If your answer is YES, give yourself 1 point		
		31. Is the use of bioretention areas and other stormwater practices within landscaped areas or setbacks allowed? If your answer is YES, give yourself 1 point		
		32. Are there any incentives to developers to provide parking within garages rather than surface parking lots? If your answer is YES, give yourself 1 point		
		<b>Shared Parking</b>	23,24,25	
		23. Are model shared parking agreements provided? If your answer is YES, give yourself 1 point		
		24. Are parking ratios reduced if shared parking arrangements are in place? If your answer is YES, give yourself 1 point.		
		25. If mass transit is provided nearby, is the parking ratio reduced? If your answer is YES, give yourself 1 point		

Rank	GAP ID	Sub Category	Questions	Category
12	I-B	<b>Street width and length</b>	1,2,3	Category I: Reduction of Impervious Cover
		1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)? <i>If your answer is <b>between 18-22 feet</b>, give yourself 1 point - it's 20'-22'</i>		
		2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)? <i>If your answer is YES, give yourself 1 point</i>		
		3. Do street standards promote the most efficient street layouts that reduce overall street length? <i>If your answer is YES, give yourself 1 point</i>		
8	I-C	<b>Sidewalks and Curbs</b>	9,11,12	
		9. What is the minimum sidewalk width allowed in the municipality? <b>_5_ feet</b> <i>If your answer is <b>4 feet or less</b>, give yourself 1 point.</i>		
		11. Are sidewalks allowed to be sloped to drain to the front yard instead of the street? <i>If your answer is YES, give yourself 1 point.</i>		
		12. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)? <i>If your answer is YES, give yourself 1 point.</i>		
7	I-D	<b>Cul-de-Sacs</b>	6,7,8	
		6. What is the minimum radius allowed for cul-de-sacs? <i>If your answer is <b>less than 35 feet</b>, give yourself 1 point</i> <i>If your answer is <b>36 feet to 45 feet</b>, give yourself .5 point</i>		
		7. Can a landscaped island be created within the cul-de-sac? <i>If your answer is YES, give yourself 1 point</i>		
		8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments? <i>If your answer is YES, give yourself 1 point</i>		
13	I-E	<b>Driveways</b>	13, 14, 15, 16, 17	
		13. What is the minimum driveway width specified in the municipality? <b>_12_ feet</b> <i>If your answer is <b>9 feet or less (one lane) or 18 feet (two lanes)</b>, give yourself 1 point.</i>		
		14. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc)? <i>If your answer is YES, give yourself 1 point.</i>		
		15. Can a "two track" design be used at single family driveways? (grass in between) <i>If your answer is YES, give yourself 1 point.</i>		
		16. Are shared driveways permitted in residential developments? <i>If your answer is YES, give yourself 1 point.</i>		
		17. Are driveways allowed to be sloped to drain to yard areas instead of the street? <i>If your answer is YES, give yourself 1 point.</i>		

Rank	GAP ID	Sub Category	Questions	Category
6	I-F	<p><b>Model Local Law Language for County, GI Matrix; Guidelines SUNY</b></p>	<p>A model local law for the County would outline the responsibilities and requirements under the SPDES permit to implement, where best applicable, green infrastructure practices throughout the County's various and different departments for different types of projects. A procedural outline within the local law would be helpful as well as a matrix that outlines the green infrastructure practices to be considered by type of project or size of area. The matrix would be designed for use by personnel who are not engineers, or SWPPP reviewers.</p> <p>This model local law language could be borrowed by SUNY for use in their policy guidelines. It could also be used in whole or part by municipalities who wish to provide the organizational structure needed in a government body with many different and varied departments and employees that are affected by the requirements under the SPDES general permit.</p>	<p>Category I: Reduction of Impervious Cover</p>
4	II-A	<p><b>Locating Site In Less Sensitive Areas</b></p> <p>37. Does the municipality have a steep slope, grading, or erosion and sediment control law that requires avoidance of development on steep slope areas and minimizes grading and flattening of hills and ridges? If your answer is YES, give yourself 1 point. Are steep slopes defined with angle of repose _____ or percentage of slope _____?</p> <p>38. Does the municipality require avoidance and protection of highly erodible soils through a steep slope, grading, or erosion and sediment control law? If your answer is YES, give yourself 1 point.</p> <p>39. Does the municipality provide incentives for development on previously altered sites or in designated priority growth areas? If your answer is YES, give yourself .5 point.</p> <p><b>Clearing and Grading</b></p> <p>64. Is there an ordinance or local law that requires erosion and sediment control on development sites using the design criteria in, "New York Standards and Specifications for Erosion and Sediment Control"? If your answer is YES, give yourself 1 point.</p> <p>65. Is there an ordinance that requires buffer zones be maintained between development and land preservation areas? If your answer is YES, give yourself 1 point.</p>	<p>37, 38, 39</p> <p>64, 65</p>	<p>Category II: Preservation of Natural Areas and Conservation Design</p>

Rank	GAP ID	Sub Category	Questions	Category
5	II-B	Open Space Management - BSD angle	60*, 61, 62 (*40% Q)	Category II: Preservation of Natural Areas and Conservation Design
		60. Does the municipality have enforceable requirements to establish agreements that can effectively manage open space? If your answer is YES, give yourself 1 point.		
		61. Does a minimum percentage of open space have to be managed in a natural condition? If your answer is YES, give yourself 1 point.		
		62. Are allowable and unallowable uses for open space in residential developments defined? If your answer is YES, give yourself 1 point.		
9 or 10 (Tie)	II-C	Stream Buffers	42,43,44,45,49,50,51	
		42. Does the municipality have a stream buffer ordinance or local law? If yes, and it is for all streams give yourself 1 point. If yes, but it is only for some streams give yourself .5 points.		
		43. If so, what is the minimum buffer width? _____ feet If your answer is <b>100 feet or more</b> , give yourself 2 points. If your answer is <b>between 50-100 feet</b> , give yourself 1 point.		
		44. Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required? If your answer is YES, give yourself 1 point.		
		45. Does the ordinance also regulate intermittent streams? If your answer is YES, give yourself 1 point.		
		49. Do the stream and wetland ordinances specify low impact uses in the buffer that are compatible with conservation such as passive recreation? If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.		
		50. Do the ordinances/local laws specify enforcement and education mechanisms? If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.		
		51. Do stream and wetland buffer ordinances/local laws specify that at least part of the buffer be maintained with native vegetation? If your answer is YES, give yourself <b>.5 point for wetland buffers</b> and <b>.5 point for stream buffers</b> for a possible total of 1 point.		

Rank	GAP ID	Sub Category	Questions	Category
14	II-D	<b>Wetland Buffers</b>	<b>46,47,48,49,50,51</b>	Category II: Preservation of Natural Areas and Conservation Design
		46. Does the municipality have a local wetland buffer ordinance or local law? If your answer is YES, give yourself 1 point.		
		47. In the wetland ordinance, what is the minimum regulated wetland size? If you answer is all wetlands regardless of size give yourself 1 point. If your answer is between 0-5 acres, give yourself .5 point		
		48. What is the minimum buffer width for wetlands? _____ feet If your answer is <b>100 feet or more</b> , give yourself 2 points. If your answer is <b>between 50-100 feet</b> , give yourself 1 point.		
		49. Do the stream and wetland ordinances specify low impact uses in the buffer that are compatible with conservation such as passive recreation? If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.		
		50. Do the ordinances/local laws specify enforcement and education mechanisms? If your answer is YES, give yourself .5 point for wetland buffers and .5 point for streams buffers for a possible total of 1 point.		
		51. Do stream and wetland buffer ordinances/local laws specify that at least part of the buffer be maintained with native vegetation? If your answer is YES, give yourself <b>.5 point for wetland buffers</b> and <b>.5 point for stream buffers</b> for a possible total of 1 point.		
11	II-E	<b>Tree and Forest Conservation</b>	<b>67, 68, 69</b>	Category II: Preservation of Natural Areas and Conservation Design
		67. If forests are present at residential development sites, do stands have to be preserved? If your answer is YES, give yourself 1 point.		
		68. Are the limits of disturbance shown on construction plans adequate for preventing clearing of trees and natural vegetative cover during construction? If your answer is YES, give yourself 1 point.		
		69. Is there an ordinance or local law that requires forestry best management practices for timber harvesting and tree cutting? If your answer is YES, give yourself 1 point.		

Rank	GAP ID	Sub Category	Questions	Category
9 or 10 (Tie)	II-F	<b>Conservation Incentives-financial</b>	70, 71	Category II: Preservation of Natural Areas and Conservation Design
		70. Does the municipality have a local open space fund through bonding, real estate transfer tax, or other funding mechanism to encourage open space protection?  If your answer is Yes give yourself 1 point.		
		71. Does the municipality use local, county, state, federal or private open space funding for purchase or transfer of development rights programs?  If your answer is Yes give yourself 1 point.		
		<b>Preservation of Undisturbed Areas</b>	40* (*40% Q)	
		40. Does the municipality require that natural conservation areas are delineated and defined before site layout and design are conducted?  If your answer is YES, give yourself 1 point.		
2	III-A	<b>Rooftop Runoff</b>	77,78	Category III: SW Mgmt Design Elements
		77. Can rooftop runoff be discharged to yard areas?  If your answer is YES, give yourself 1 point.		
		78. Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops?  If your answer is YES, give yourself 1 point.		
3	III-B	<b>Vegetated Open Channels</b>	76* (*40% Q)	Category III: SW Mgmt Design Elements
		76. Are there established design criteria for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?  If your answer is yes, give yourself 1 point.		

## **Appendix M**

### **Albany County and University at Albany Questionnaires**

**Gathering Information**  
**How To Implement Green Infrastructure?**  
**Understanding Albany County and SUNY Operations**

**Some Key Questions**

(For consideration at upcoming meetings-internal and/or with consultants)

**Prepared September 25, 2012**

**1) How is green infrastructure implemented in the County/SUNY now?**

- a. Who, which department gets involved with SWPPP design? bids? construction? maintenance?
- b. Other than what is required by NYSDEC (E and SC Blue Book and NYSDEC SW Design Manual) does the County/SUNY have or use other standardized specs for construction projects?
- c. If yes, what are they and who or which department/agency generates those standardized specs?
- d. Does the County/SUNY have in place policy documents which guide where and how construction activity occurs?
- e. If yes, who develops and approves these policy documents?
- f. Does the County or SUNY engage in long term capital planning?
- g. If yes, is there a long term capital plan in place now for the County/SUNY which includes green infrastructure?
- f. If not, could/should/can/how might these long term capital plans include green infrastructure?

**2) If green infrastructure has yet to be embraced within the County or SUNY,**

- a. What are the current obstacles?
- b. What needs to happen to remove these obstacles?
- c. Are there activities currently in place to help remove these obstacles? What are they?

**3) Looking at the 8 gaps listed on GIGaps\_RnkgSheet\_Results\_FINAL spreadsheet, other than Gap 6, which of the other gaps are most relevant to your institution?**

- a. What kind of modifications of these gaps might be necessary to fit your needs?

**4) Gap 6 is written out below, for the County:**

- a. What are your expectations for a local law?
- b. What would be the elements of a green infrastructure matrix?

**5) Gap 6 is written out below, for SUNY:**

- a. What are your expectations regarding guidelines and the green infrastructure matrix?

**6) Which facilities or structures currently managed by the County and SUNY, would derive the greatest benefit from green infrastructure practices? Should these be included in the matrix? If so, how?**

**7) What happens if you don't use green infrastructure? Who's holding your feet to the fire? How?**

**8) Other questions?**

## **GAP 6 Model Local Law Language for County, GI Matrix; Guidelines for SUNY**

A model local law for the County would outline the responsibilities and requirements under the SPDES permit to implement, where best applicable, green infrastructure practices throughout the County's various and different departments for different types of projects. A procedural outline within the local law would be helpful as well as a matrix that outlines the green infrastructure practices to be considered by type of project or size of area. The matrix would be designed for use by personnel who are not engineers, or SWPPP reviewers.

This model local law language could be borrowed by SUNY for use in their policy guidelines. It could also be used in whole or part by municipalities who wish to provide the organizational structure needed in a government body with many different and varied departments and employees that are affected by the requirements under the SPDES general permit.

**Appendix N**  
**Final Local Law Language**

## Gap 1 Parking Lot Design

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by limiting the amount of impervious areas, protecting natural resources and maintaining natural hydrological conditions. This law is intended to comply with the New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals. The redevelopment of properties that are part of a government approved plan for the clean-up of contaminated properties may be permitted to have larger areas of impervious surfaces where impermeable cover is a requirement of approved remediation and redevelopment plan.

**2.0 PARKING RATIOS.** *This language is an example of off-street parking ratios. The ratios themselves may be adapted for local conditions and experience. The identified land uses should be used only as a guide and should be conformed with the language used in the schedule of uses included in the municipality's own zoning law.*

### Minimum Action Level

#### **2.1 Determination of Required Off-Street Parking Spaces.**

In computing the number of parking spaces required by this law, the following rules shall apply:

- (a) Where floor area is designated as the standard for determining parking space requirements, floor area shall be the sum of the gross horizontal area of all the floors measured from the exterior faces of the building.
- (b) Where seating capacity is the standard for determining parking space requirements, the capacity shall mean the number of seating units installed or indicated, or when fixed seats are not indicated, the capacity shall be determined as being one (1) seat for each twenty (20) square feet of floor area of the assembly room.
- (c) Where employees are the standard for determining parking space requirements, employees shall mean the maximum number of employees on any two (2) successive shifts.
- (d) Fractional numbers shall be increased to the next whole number.
- (e) The parking spaces required for mixed uses shall be the sum of the parking required for each use considered separately.

- (f) Parking spaces within parking lots or structures may be installed with electric automobile charging stations, including models that charge by solar energy. Such spaces may count toward parking requirements.

Number of Parking Spaces Required

The minimum required number of off-street parking spaces for each facility or use shall be determined by application of the standards noted in Schedule A. For a use not specified in Schedule A, the Planning Board shall apply the standard for a specified use which the Board determines to be most similar to the proposed use.

**Schedule A  
REQUIRED OFF-STREET PARKING SPACES**

	<b>Principal Building or Use</b>	<b>Minimum Spaces Required</b>
(a)	<b>Residential Uses:</b>	
	(1) Single-family dwellings	2 spaces, of which both spaces shall be enclosed (a)
	(2) Two-family dwellings	2 spaces for each dwelling unit, of which both spaces per dwelling unit shall be enclosed (a)
	(3) Townhouses	2 spaces for each dwelling unit, of which both spaces per dwelling unit shall be enclosed.
	(4) Apartments	2 spaces for each dwelling unit, of which not less than 1 space per unit shall be enclosed.
	(5) Senior citizen apartments	1 space for each dwelling unit, of which not less than 0.5 spaces per dwelling unit shall be enclosed.
	(6) Lodging house, boarding houses	1 space for each bed.
	(7) Dormitories, sororities and fraternities	1 space for each 3 persons based on the maximum capacity as established in the Housing Code.
	(8) Nursing homes	1 space per 3 beds
(b)	<b>Office, Professional Service Uses: (b)</b>	
	(1) Business, professional and administrative offices and services (excluding medical and dental)	1 space for each 300 sq. ft. of floor area.
	(2) Medical, dental offices and clinics, including urgent care clinics	1 space for each 200 sq. ft. of floor area
	(3) Financial establishments	1 space for each 300 sq. ft. of floor area.
	(4) Animal clinic, veterinary office	1 space for each 300 sq. ft. of floor area.
	(5) Funeral homes, mortuaries	1 space for each 50 sq. ft. of floor area in parlors or service rooms.
	(6) Hospitals	2 spaces per room

(c)	<b>Retail/Service Uses: (b)</b>		
	(1)	Retail or business uses permitted in any C District, unless specific standards given below	1 space for each 300 sq. ft. of floor area
	(2)	Furniture and appliance; retail nursery garden supply, establishments	1 space for each 500 sq. ft. of floor area
	(3)	Restaurants; bars; taverns; night clubs	1 space for each 300 sq. ft. floor area (outdoor dining area excluded)
	(4)	Hotels and motels	5 spaces plus 1 space for each sleeping room or suite

	<b>Principal Building or Use</b>		<b>Minimum Spaces Required</b>
(d)	<b>Automotive Uses: (b)</b>		
	(1)	Auto sales; new and used, auto, truck, boat sales, rental facilities	1 space for each 500 sq. ft. of floor area (indoor area only)
	(2)	Gasoline stations	.5 spaces per pump +1 per 500 sq. ft. of accessory retail area
	(3)	Car wash facilities	1 space per bay plus sufficient area for stacking spaces
	(4)	Automobile service stations - major repair	4 spaces per bay
	(5)	Automobile service station - minor repair	4 spaces per bay
(e)	<b>Commercial Entertainment/Recreation Uses: (b)</b>		
	(1)	Bowling alleys	2 spaces per each lane.
	(2)	Game rooms	1 space for each billiard table or amusement device
	(3)	Skating rinks	1 space per 200 sq. ft. of floor area
	(4)	Indoor movie theaters, auditorium and other public assembly places	1 space for every 4 seats for first 400 seats then 1 space per 10 seats
	(5)	Golf course	4 spaces per hole
	(6)	Tennis or racquet ball court	2 spaces per court
	(7)	Indoor or outdoor swimming pools, public or private	1 space per 200 sq. ft. of water area.
	(8)	Health, fitness, recreation club	1 space for every 200 sq. ft. of exercise area, including locker room, and equipment room.

	<b>Principal Building or Use</b>		<b>Minimum Spaces Required</b>
(f)	<b>General Commercial Uses: (b)</b>		
	(1)	Printing, publishing, storage and warehousing of goods	1 space for each 800 sq. ft. of floor area.
	(2)	Research and testing laboratories	1 space for each 400 sq. ft. of floor area.
(g)	<b>Educational Facilities:</b>		
	(1)	junior high schools, elementary schools and kindergartens	2 spaces per classroom +1 space per 15 seats in largest assembly hall
	(2)	Neighborhood high schools	2 spaces per classroom
	(3)	Regional high schools	5 spaces per classroom.
	(4)	Colleges, universities	10 spaces for every classroom
	(5)	Child Day Care Centers, nursery schools and similar uses	1 space for each staff person or employee plus a minimum of 2 pick-up/drop-off spaces
(h)	<b>Community Facilities:</b>		
	(1)	Places of worship	1 space for every 4 seats
	(2)	Community center, library, museum or similar public or private semi- public building	1 space for every 4 seats or for each 300 sq. ft. of floor area, whichever is greater.
(i)	Shopping Center		1 space per 250 sq. ft. of leasable floor area.

Notes to Schedule A:

- (a) All existing lots of record of a single-family and two-family dwelling that does not meet the minimum lot area or lot width requirements of the district are permitted to provide fewer enclosed parking spaces in a detached garage if the Zoning Administrator verifies that construction of a code-conforming detached garage cannot be accommodated on the site. The site must meet one (1) or more of the following standards:
- (i) The maximum rear yard coverage limitation would be exceeded with the construction of a two-car detached garage.
  - (ii) The maximum lot coverage or impervious surface limitation would be exceeded with the construction of a two-car detached garage. This standard applies only if the principal building exceeds the minimum floor area of a dwelling unit by no more than ten percent (10%).
  - (iii) The previously existing detached garage on the lot was a single-car garage.
  - (iv) Special conditions peculiar to the land or structure which are not applicable generally to other lands or structures in the same Zoning District render a code-conforming garage impractical.

- (b) A minimum of five (5) spaces is required unless provisions are made for shared parking or the Planning Board approves a lower figure based upon a proper demonstration of parking needs by the applicant.
- (c) For the purposes of this section, a neighborhood shopping center shall include one (1) or more multitenant building and/or a group of buildings when the required parking spaces are provided in a shared parking lot, parking deck or parking garage.

## **2.2 Shared Parking.**

Applicants may and are encouraged to propose shared parking arrangements with other land uses in sufficient proximity if it can be demonstrated that the peak use periods for the respective land uses are complementary and will maximize the use of the parking lots while reducing excessively large parking lots. The Planning Board may accept a shared parking arrangement and determine the size of the parking lot based upon consideration of the following:

- (a) A demonstration of complementary timing of the use of the parking lot so that adequate space is available for each designated use and the proximity of the parking lots to each respective use.
- (b) Written binding agreements between the landowners for the use of the parking lots and the maintenance thereof and such agreements shall be recorded as deed restrictions which shall provide that they may not be cancelled without the prior approval of the Planning Board.
- (c) A determination of the appropriate number of parking spaces for the new development.

## **2.3 Maximum Off-Street Parking.**

The following vehicle parking space maximums are applicable to all surface parking lots for multi-family, non-residential, and mixed-use development uses:

- (a) Surface parking areas may not exceed one hundred and twenty percent (120%) of the required minimum number of vehicle parking spaces. A request to exceed the minimum number of vehicle parking spaces must be supported with adequate documentation to justify an increase over the minimum number of spaces.
- (b) For every three (3) parking spaces constructed of pervious pavement, one (1) additional pervious pavement parking space may be added without documenting the need for exceeding the minimum parking space requirements of Schedule A. The total number of parking spaces, both pervious and impervious, may not exceed 120% of the minimum requirement without providing the documentation to support the need for more parking spaces.
- (c) For surface parking areas that require a minimum of thirty (30) or more spaces, when the minimum number of vehicle spaces required by Schedule A is exceeded, the area used for additional spaces must be paved with pervious material, such as permeable pavers, porous asphalt, porous concrete, grass-crete or gravel-crete. The area designated for pervious parking shall be located at the

perimeter of the parking lot, and if possible, remote or furthest removed from the principal building.

- (d) Existing surface parking areas that exceed the parking maximums must come into conformance with the maximum number of parking spaces when the following occurs:
  - (1) A new principal building is constructed on the site.
  - (2) Over fifty percent (50%) of the total area of an existing parking lot is rebuilt.
- (e) When surface parking areas exceed the number of spaces permitted by this section and are required to come into conformance, the excess spaces must be converted into any combination of the following:
  - (1) The spaces are landscaped, as required by this Zoning Ordinance.
  - (2) Subject to review by the Planning Board during site plan approval, existing excess spaces may be converted to bicycle parking spaces. If no longer used as bicycle spaces, those spaces must be converted into landscape, as required by this Zoning Ordinance.

#### Best Management Action Level

### **2.4 Proximity to Mass Transit.**

- (a) Where a project is located within three (3) miles of a CDTA bus stop, the applicant is strongly encouraged to provide bike racks or lockers. If bike racks are proposed, the racks should be covered if practicable.
- (b) Where a project is located within a quarter of a mile (0.25 miles) from a CDTA bus stop, and covered bike racks are provided on-site, the applicant may propose to reduce the minimum number of parking spaces provided in Schedule A by 25%.
- (c) Where a project is located within a quarter of a mile (0.25) from a Park & Ride parking lot, the applicant may propose to reduce the the minimum number of parking spaces provided in Schedule A by 25%.

### **2.5 Credit for On-Street Parking.**

Upon a demonstration from an applicant that there will be adjacent , on-street publicly available parking and that such spaces are underutilized, that applicant may include said spaces in its count for minimum required off-street parking.

#### Model Community Action Level

### **2.6 Reduction of Minimum Off-Street Parking for Certain Residential Uses.**

Upon the request of an applicant, the minimum number of parking spaces in Schedule A may be reduced by up to 25% for housing units dedicated for affordable housing and senior

housing upon a demonstration that the minimum number in Schedule A is unnecessary and will not cause congestion in the parking lot or adjacent on-street parking. In approving any reduction in parking, the Planning Board shall consider whether the applicant is providing the off-street parking in garages and if so shall determine if sufficient storage space is included for each unit to avoid occupants from using the garage for storage of personal items.

### **2.7 Land Banked Parking.**

Land banking allows for designating a portion of land on a site that would be required for parking to be held and preserved as landscape, rather than constructed as parking. The Planning Board may permit land banking of up to thirty percent (30%) of the maximum allowed parking spaces, subject to the following:

- (a) Evidence is provided by the applicant that supports the reduced parking needs.
- (b) The area proposed for land banking of parking spaces must be an area suitable for parking at a future time.
- (c) Landscaping of the land banked area must be in full compliance with this law and, at a minimum, be decompacted and landscaped with native vegetation and may not be used as a stormwater management area.
- (d) The land banked area cannot be used for any other use and must be part of the same zoning lot and all under the same ownership.
- (e) As part of the site plan review process, the applicant must show the area to be banked on the site plan and marked as "Land Banked Future Parking."
- (f) The Code Enforcement Officer, upon a determination of parking demand for the use, may require the conversion of all or part of the land banked area to off-street parking spaces. Where a property owner disagrees with a determination by the Code Enforcement Officer, that determination may be reviewed by the Zoning Board of Appeals pursuant to Sec. \_\_\_\_\_

### **3.0 Parking Lot Design.**

#### Minimum Action Level

- (a) Parking spaces in excess of the minimum number of spaces required in Schedule A shall be constructed of pervious materials (permeable pavers, porous asphalt, porous concrete, grass-crete or gravel-crete, structural grass or similar materials) unless site or soil conditions or future use of the area as stormwater hot spot as defined in the latest version of the New York State Stormwater Management Design Manual, preclude the use of pervious materials.
- (b) Off-street parking spaces designated for customers waiting for services from drive-thru facilities shall be constructed of porous materials unless precluded pursuant to subparagraph (a) above.
- (c) In order to maximize the absorption capabilities of landscaped areas, utilities shall not be located within landscaped areas unless the applicant can demonstrate avoidance of landscaped areas will result on unnecessary hardship.

- (d) All parking lots shall include a snow storage and disposal area that provides for snow melt over a vegetated area or into a green infrastructure area.
- (e) Parking stalls shall have a maximum width of 9' and a maximum length of 18' with the exception of a limited number of stalls designated for buses, delivery trucks not using loading docks or designated shopping cart carrels.
- (f) All parking lots shall be designed with angled parking and one-way traffic aisles. Two-way traffic aisles may be used upon a demonstration that they are necessary for safe and efficient traffic flow.

#### Best Management Action Level

- (g) If a project is located within a quarter of a mile (0.25) of a CDTA bus stop, the site plan shall provide clearly demarcated pathways and crosswalks to the bus stop or to the nearest publicly accessible sidewalk or pathway.
- (h) A minimum of 10% and a maximum of 30% of the parking spaces shall be designed and designated for compact cars and motorcycles. Compact car spaces shall be 8.5' wide and 16' feet deep. Motorcycle spaces shall be 4.5' wide and 10' deep. The location of these spaces shall be determined in a manner that facilitates their use by the intended vehicles and discourages their use by larger vehicles and signage included designating their appropriate use.

#### Model Community Action Level

- (i) Site plans should include internal connections to adjacent businesses and roads to facilitate easier pedestrian and vehicle access.
- (j) Where a building is located more than 500 feet from a public road, the site plan should include a covered pedestrian rest shelter, including a bench, approximately one-half of the distance between the building and the road.
- (k) Where an applicant proposes a multi-story parking structure which reduces the amount of landscaping otherwise required, the applicant shall propose alternative means of providing an equivalent benefit including the utilization of up to 50% of the structure's roof as a green roof.

### **3.1 Bicycle Parking.**

#### Minimum Action Level

The following requirements for bicycle parking spaces are applicable to any use where a new non-residential or multi-family building is constructed on the premises or when a new addition of 25,000 sq. feet or more is made to an existing non-residential or multi-family building.

- (a) Required Number of Bicycle Parking Spaces.
  - (1) Where off-street parking facilities are provided, the number of bicycle parking spaces must be provided as required by Schedule B: Required

Bicycle Parking Spaces. All uses listed within Schedule B are required to provide short-term bicycle parking spaces, which are areas where bicycles will be left for short stops, requiring a high degree of convenience. Certain uses listed within Schedule B require a percentage of the required bicycle parking spaces to provide long-term bicycle parking spaces, where bicycles will be left for longer periods of time, and require a safe and weather-protected storage area.

- (2) In all cases where bicycle parking is required, a minimum of two (2) bicycle spaces is required.
- (3) After the first thirty (30) required bicycle parking spaces are provided, additional bicycle parking spaces are required at one-half (1/2) space per unit listed in Schedule B.
- (4) When a use is exempt from vehicle parking requirements by this Zoning Ordinance, the use is also exempt from the requirements for bicycle parking spaces.
- (5) Shower and locker facilities for bicyclists are required for offices, universities/colleges and hospitals over twenty-five thousand (25,000) square feet in gross floor area of structure. Lockers for clothing and other personal effects must be located in close proximity to showers and dressing areas to permit access to the locker areas by either gender. A minimum of one (1) clothes locker is required for each long-term bicycle parking space provided.

<b>Schedule 1161.035: Required Bicycle Parking Spaces</b>		
<b>USE</b>	<b>REQUIRED BICYCLE SPACES</b>	<b>REQUIRED PERCENTAGE OF LONG-TERM SPACES</b>
Multi-Family Dwelling	1 per 4 dwelling units	80% required long-term
Dormitory; Fraternity/Sorority	1 per 4 beds	80% required long-term
Retail/Service Establishments Over 10,000sf in GFA	1 per 2,500sf GFA	
Offices Over 10,000sf in GFA	1 per 5,000sf GFA	50% required long-term
Entertainment/Recreation Facilities Over 10,000sf in GFA	1 per 5,000sf GFA	
Junior high schools, elementary schools and kindergartens	2 per classroom	
High Schools	3 per classroom	
Colleges and Universities	1 per 5,000sf GFA	50% required long-term
Places of Worship Over 10,000sf in GFA	1 per 5,000sf GFA	
Hospitals	1 per 25 beds	50% required long-term
Community Facilities	1 per 2,500sf GFA	

(b) Location of Bicycle Parking Spaces.

- (1) The bicycle parking area must be convenient to building entrances and street access, but may not interfere with normal pedestrian and vehicle

traffic. For passive security purposes, the bike parking shall be well-lit and clearly visible to building occupants or clearly visible from the street.

- (2) Bicyclists must not be required to travel over stairs or other obstacles to access bicycle parking.
- (3) All required bicycle spaces must be located on the same lot as the use or within fifty (50) feet of the lot when on private property. The property owner may also make suitable arrangement with the municipality to place bike parking spaces in the public right-of-way. Parking in the public right-of-way must be within fifty (50) feet of the zoning lot.
- (4) Short-term bicycle parking spaces must be located no more than fifty (50) feet from the principal building entrance and at the same grade as the sidewalk or an accessible route.
- (5) Long-term bicycle parking spaces must be located in a covered area that is easily accessible from the public-right-of-way and building entrances. The area must comply with one (1) of the following secure locations:
  - (i) Enclosed in a locked room.
  - (ii) Enclosed by a fence with a locked gate.
  - (iii) Located within view or within one-hundred (100) feet of an attendant or security guard.
  - (iv) Located in an area that is monitored by a security camera.
  - (v) Located in an area that is visible from employee work areas.
- (6) Required bicycle parking for residential uses may be provided in garages, storage rooms and other resident-accessible, secure areas. Space within dwelling units or on balconies are not counted toward satisfying bicycle parking requirements.

(c) Design of Bicycle Parking Spaces.

- (1) Required bicycle spaces must have a minimum dimension of two (2) feet in width by six (6) feet in length, with a minimum overhead vertical clearance of seven (7) feet. Each required bicycle parking space must be accessible without moving another bicycle. There must be an aisle at least (five) 5 feet wide between each row of bicycle parking to allow room for bicycle maneuvering.
- (2) The area devoted to bicycle parking must be surfaced as required for vehicle parking areas.
- (3) All long-term bicycle parking spaces must be covered, which can be achieved through use of an existing overhang or covered walkway, weatherproof outdoor bicycle lockers or an indoor storage area. Where bicycle parking is not located within a building or locker, the cover design must be of permanent construction, designed to protect bicycles from rainfall and with a minimum overhead vertical clearance of seven (7) feet.
- (4) Bicycle parking facilities must provide lockable enclosed lockers or racks, or similar structures, where the bicycle may be locked by the user. Racks must support the bicycle in a stable position. Structures that require a user-

supplied locking device must be designed to easily allow a high-security U-shaped lock to secure the bike frame and one wheel while both wheels are still on the frame's brackets. All lockers and racks must be securely anchored to the ground or a structure to prevent the racks and lockers from being removed from the location.

- (5) If required bicycle parking facilities are not visible from the street or principal building entrance, signs must be posted indicating their location.

## 4.0 LANDSCAPING

### Minimum Action Level

- (a) Landscaped areas in a project site plan, including in parking lots, shall be lowered and incorporate curb cuts or other diversion devices to divert stormwater to the landscaped areas as part of a stormwater management plan.
- (b) Parking lots shall include one tree for every 1,200 feet of impervious parking area. Sufficient permeable or infiltration areas shall be provided around the expected radius of the mature tree to provide infiltration for the tree drip area. Existing mature trees shall not be included in the calculation for minimum trees except for areas where the existing mature tree canopy extends over impervious surfaces. Tree plantings may be designed as tree pits for stormwater treatment as provided in the latest version of the New York State Stormwater Management Design Manual.

### Best Management Action Level

- (c) For every impervious parking space, the site plan shall include at least 20 square feet of vegetated area within the parking lot. "Within the parking lot" means that at least 75% of the perimeter of the landscaped area is located within the parking lot. Vegetated areas must include native non-invasive species and may be used for green infrastructure stormwater practices.

### Model Community Action Level

Surface parking lots with more than two rows of parking shall include a minimum of a 4' wide landscaping islands between rows. These islands shall include curb cuts/wheel stops to allow entry of stormwater for treatment/infiltration. Landscaped areas shall utilize tree plantings, native vegetation, dry swales, stormwater planters, tree pits, or bioretention in center islands between parking rows. Stormwater management features must be designed in accordance with the latest version of the New York State Stormwater Management Design Manual and shall include the following:

- Trees shall have dense canopy for rainfall interception, being round, oval, or v-shaped in form.
- Trees used shall be native and have proven observed salt tolerance if applicable.

- The area of the parking lot subject to vehicular traffic, that also corresponds to the mature tree's canopy area, shall incorporate structural measures to prevent soil compaction and root damage. This may be accomplished by use of a soil structure specifically designed to withstand observed traffic loading.
  - Water must be allowed to infiltrate to the tree roots in an amount to ensure tree survival with minimal watering after the first year.
  - Soil volume must be the amount required for the specific tree and intended function.
  - Trees shall be selected based on several factors, including observed local healthy tree stands in similar applications, existing and anticipated soil compaction, existing pH, planned water availability, adjacent road maintenance (salt, sand, etc), presence of overhead utilities, availability of sunlight, percolation rate, soil's ability to circulate air, and soil type.
  - Because paved parking lots and the cars associated with them can raise local temperatures by up to 20 degrees, trees selected near heat islands should be tolerant of these conditions.
  - Trees shall be selected based on best landscape practices, using the guidance document "Recommended Urban Trees: Site Assessment and Tree Selection for Stress Tolerance", as published by the Urban Horticultural Institute, Department of Horticulture, Cornell University, Ithaca, NY or other industry-accepted standard at the discretion of [jurisdiction].
- All parking lot runoff is required to flow through a planted area to cool runoff temperatures before entering the storm drain system.
  - Parking lots larger than 1,200 sf, located on soils of hydrologic soil groups A, B, or C, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 20% of the parking lot area. Parking lots larger than 1,200 sf, located on soils of hydrologic soil group D, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 10% of the parking lot area.

## Gap 2 – Rooftop Runoff

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by directing rooftop runoff into landscaped areas and other infiltration devices and avoiding direct discharge into watercourses or areas that can cause erosion. This law is intended to comply with the New York State Department of Environmental Conservation’s SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals and meet the requirements of the most recent New York State Stormwater Management Design Manual.

**2.0 Control of Rooftop Runoff** *These provisions can best be inserted in subdivision laws and zoning law sections governing site plan review. In most municipalities, single and two-family homes on existing lots do not require site plan approval so these provisions would be difficult to impose upon new construction of those residences absent a stand-alone law or an expansion of the scope of the zoning law.*

### Minimum Action Level

- a. Site Plan Review: All buildings included in any site plan approval shall be designed with rooftop stormwater conveyance systems that direct stormwater away from roads and parking lots and to vegetated areas with hydrologic soil groups A and B and soils with an infiltration capacity of more than 0.5 inches/hour.
- b. Subdivision Review: All buildings to be constructed in an approved subdivision shall be designed with rooftop stormwater conveyance systems that direct stormwater away from roads and parking lots and to vegetated areas with hydrologic soil groups A and B and soils with an infiltration capacity of more than 0.5 inches/hour.

### Best Management Action Level

*In addition to the standards above, towns may include some or all of the following requirements to achieve a higher level of best management practices.*

- a. Rooftop runoff shall be diverted to: a series of rain barrels (or similar rainwater harvesting container); a grassed or vegetated area; a rain garden; a vegetated open channel; an infiltration trench, a pervious surface or a combination of the above or similar measures. All measures shall be designed in accordance with the most recent New York State Stormwater Management Design Manual.

### Model Community Action Level

*In addition to the standards for the Minimum Action Level and the Best Management Action Level, towns may include some or all of the following requirements to achieve the highest level of best management practices.*

- a. For all applications for site plan approval, the [municipality] encourages applicants to consider installing Green roofs on all new commercial and multi-family residential structures and on non-enclosed covered areas of **100** square feet or larger. Non-enclosed covered areas include parking structures, covered picnic areas and covered courtyards.
- b. When an applicant provides a green roof on a new or renovated building and the green roof encompasses at least **80%** of the available rooftop area, (excluding the area occupied by mechanical equipment, skylights, vents and other required appurtenances) the applicant shall be entitled to a density bonus up to **20%** of the applicable Floor Area Ratio (FAR), lot coverage limits or height restriction without requiring a variance and provided the building complies with all setback requirements.
- c. Buildings with green roofs must have a maintenance plan that is recorded with the municipality and filed with the deed. Green roofs must be inspected annually by a qualified inspector and the inspection reports must be filed with the municipality within two weeks of the date of the inspection.

## Gap 3 – Vegetated Open Channels

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by using vegetated open channels in the rights of way of streets to convey and treat stormwater runoff. This law is intended to comply with the New York State Department of Environmental Conservation’s SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals and meet the requirements of the most recent New York State Stormwater Management Design Manual. The redevelopment of properties that are part of a government approved plan for the clean-up of contaminated properties may be permitted to have larger areas of impervious surfaces where impermeable cover is a requirement of an approved remediation and redevelopment plan.

**2.0 Vegetated Open Channels** *This language can be applied to subdivision, zoning and local road laws that provide design requirements for developments, roads and driveways.*

### Minimum Action Level

#### 2.1

**a. New Developments and Redevelopment of Previously Developed Properties** *For subdivision and site plan approval*

Concrete or paved gutters should not be used in any stormwater conveyance measure unless site conditions significantly restrict the ability to use engineered vegetated swales or bioretention methods. Vegetated swales and bioretention measures shall be placed between roads and sidewalks, if sidewalks are proposed, and shall be designed to include safe emergency overflow provisions for large storm events.

Whenever vegetated swales and bioretention measures are utilized, provision shall be made for access to the areas for maintenance of the swales and bioretention measures, including if necessary, agreements with adjacent property owners to allow equipment to access the stormwater measures for maintenance activities.

**b. Improvement of (Town, Village or City) Roads** *For local road laws*

When a new (town, village or city) road is being designed or an existing town road is reconstructed and sufficient space is available in the right-of-way and appropriate soil conditions are present, vegetated swales or bioretention methods should be used for stormwater conveyance and treatment and shall be designed to include safe emergency overflow events for large storm events. Concrete or paved gutters should not be used unless there are no practicable alternatives.

### Best Management Action Level

*2.2 In addition to the standards in Sec. 2.1, municipalities may include some or all of the following requirements to achieve a higher level of best management practices.*

**a. New Developments and Redevelopment of Previously Developed Properties** *For subdivision and site plan approval*

Curbing shall not be included along any roads or driveways which may interfere with stormwater flows unless it is demonstrated that such curbs are necessary for engineering or safety reasons.

**b. Improvement of (Town, Village or City) Roads** *For local road laws*

When a new (town, village or city) road is being designed or an existing (town, village or city) road is reconstructed, curbing shall not be included along any roads which may interfere with stormwater flows unless it is demonstrated that such curbs are necessary for engineering or safety reasons.

Model Community Action Level

*2.3 In addition to the standards in Sec. 2.1 and 2.2, municipalities may include some or all of the following requirements to achieve a higher level of best management practices.*

**a.** All curbs adjacent to stormwater management areas (including green infrastructure) shall include curb cuts or other means to direct stormwater towards the stormwater management areas.

**b.** Green infrastructure stormwater treatment devices shall be designed in accordance with the most recent New York State Stormwater Management Design Manual and may include bioretention, tree pits, vegetated swales, dry swales, wet swales or sunken stormwater planters.

## Gap 4 – Locating Sites in Less Sensitive Areas/Clearing and Grading

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by locating development away from ecologically sensitive areas, permeable soils and limiting the amount of clearing and grading to reduce the potential for erosion and protect sensitive habitats. This law is intended to comply with the New York State Department of Environmental Conservation’s SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals and meet the requirements of the most recent New York State Stormwater Management Design Manual. The redevelopment of properties that are part of a government approved plan for the clean-up of contaminated properties may be permitted to have larger areas of impervious surfaces where impermeable cover is a requirement of an approved remediation and redevelopment plan.

**2.0 Avoiding Sensitive Areas.** *This language can be applied to subdivision and zoning laws. While the language below is drafted for site plan review, it can also be applied to the review of subdivision plats.*

### Minimum Action Level

#### **2.1 Site Plans Contents**

**a.** An application for site plan approval shall include a soil protection plan which identifies the areas of the various soil types on the property, hydrologic soil groups and soil erosion factors. The plan shall identify construction staging areas and soil disturbance areas. To the extent practicable construction staging areas should be limited to previously disturbed areas or areas with compacted or poorly infiltrating soils.

**b.** Site plans must include:

- i.** all watercourses and water bodies, including classification information if available.
- ii.** unique geological features
- iii.** State and federally designated wetlands and the 100’ adjacent area for NYS regulated wetlands.
- iv.** locations of significant natural communities (including endangered, threatened or rare plant species; high quality forested areas)
- v.** Slopes equal to or greater than 15%.
- vi.** 100-year floodplains.
- vii.** A grading plan.

**viii.** A tree conservation plan identifying all existing trees 12'' diameter at breast height (dbh) or greater and identifying the extent of tree clearing and preservation measures.

### **c. Site Plan Review Standards**

In its review of a site plan application, the Planning Board shall consider whether the applicant has avoided or minimized impacts to sensitive areas (including wetlands, floodplains, sensitive soils and tree preservation) to the maximum extent practicable consistent with the project goals.

#### Best Management Action Level

*In addition to the standards in Sec. 2.1, towns may include some or all of the following requirements to achieve a higher level of best management practices.*

### **2.2 Site Plan Review Standards**

**a.** Grading on slopes equal to or greater than **15%** should be avoided to the maximum extent practicable.

**b.** Redevelopment of previously developed sites containing grades equal to or greater than 15% should be limited to the areas of the site currently covered by impervious surfaces. Grading on the remainder of the site with slopes equal to or greater than 15% should be avoided to the maximum extent practicable.

**c.** Locating stormwater management control devices within the 100-year floodplain is strongly discouraged and should only be approved if there are no other practicable alternatives.

**d.** New development should not be located on highly erodible soils or clay soils prone to slippage, unless supported by a report from a geotechnical engineer attesting to the suitability of the soils for construction and the limitation of potential erosion.

**i.** Erodible soils are those soils with an erosion factor (K or Kw) of **0.43** or greater as determined by the most recent Natural Resources Conservation Service survey data.

**e.** New impervious surfaces shall not be located on hydrologic soil groups A or B unless there are no other practicable alternatives.

**f.** All construction activities, including staging areas, shall be shown on the site plan, be delineated in the field prior to commencing construction and be limited to the following areas:

**i.** Within **40** feet of the building perimeter.

**ii.** Within **10** feet of surface walkways, patios, surface parking and utilities with a diameter of **12** inches or less.

**iii.** Within **15** feet of road curbs and main trenches for utilities with a diameter of greater than **12** inches.

**iv.** Within **25** feet of areas constructed with pervious surfaces (including pervious paving materials, stormwater management facilities and playing fields).

**g.** Unless specifically approved by the Planning Board, vegetation beyond the disturbance areas set forth in Sec. 2.2(f) shall not be cleared or disturbed and all vegetation within the disturbance areas shall be replaced upon completion of construction.

**h.** Construction staging areas and vehicular travel areas shall not be located underneath tree canopies. Trees identified on the site plan for preservation shall be marked in the field and their tree canopy area delineated.

**i.** All vegetation, with the exception of invasive species, shall be maintained on all slopes equal to or greater than 15% and for all areas within 50 feet of watercourses and drainage swales.

**j.** Constructed or graded slopes may not have a slope greater than 3:1 unless an engineering report and soil stability analysis is provided that demonstrates a slope with a steeper grade has a safety factor of at least 1.5 for static loads and 1.1 for pseudostatic loads.

**k.** No clearing, excavation, stockpiling of materials or placement of fill shall occur on the slide block of unstable slopes or other unstable soil areas unless approved by the Planning Board upon a demonstration that the proposed activity will not increase the load, drainage, or erosion on the slope or increase the risk of damage to people, adjacent properties or natural resources.

#### Model Community Action Level

*In addition to the standards in Secs. 2.1 and 2.2, towns may include some or all of the following requirements to achieve a higher level of best management practices.*

### **2.3 Site Plan Review Standards**

**a.** Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group A shall be constructed so at least **90%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless the applicant can demonstrate with an engineering report that the pervious materials present a threat to public health or safety.

**b.** New buildings proposed on Hydrologic Soil Group A shall have a maximum footprint of **4,500** feet of continuous impervious surface, excepting covered pedestrian walkways with a maximum covered width of **10** feet. Building footprint area consisting of an approved Green Roof or decompacted courtyards or walkways shall be considered pervious surfaces and shall not be calculated as included in the **4,500** maximum area.

**c.** Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group B shall be constructed so at least **80%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless the applicant can demonstrate with an engineering report that the pervious materials present a threat to public health or safety.

## 2.4 Natural Resource Buffers

**a.** Except as otherwise provided herein, natural area buffers shall be maintained in their natural state adjacent to watercourses, wetlands and areas shown on the site plan containing sensitive plant species.

**b.** Minimum buffer areas shall be as follows and may be extended by the Planning Board in appropriate instances where topography requires a greater buffer to provide a level of protection equivalent to the distances set forth herein:

**i.** 100 feet from the boundary of any state or federally designated wetland.

**ii.** 100 feet from the top of bank of any perennial watercourse.

**iii.** 50 feet from the top of bank of an intermittent watercourse.

**iv.** 50 feet from the boundary of areas containing sensitive plant species.

**c. Buffer Averaging.** The Planning Board may alter the buffer requirements and approve an average buffer upon a demonstration that a uniform buffer will result in extraordinary hardship to the applicant due to the unique characteristics of the subject property or the character of the buffer area varies in slope, soil types or vegetation and the resource being protected would benefit from a wider buffer in certain areas and would not be adversely impacted by a narrower buffer in other areas. To be approved an averaged buffer area shall meet the following conditions:

**i.** The applicant shall demonstrate that averaging shall not adversely impact the functions and values of the protected watercourses, wetlands and sensitive habitat areas.

**ii.** The total area contained within the buffer after averaging shall not be less than the area that would be contained in the buffer without averaging.

**iii.** To the extent practicable, lower intensity land uses which are less likely to introduce pollutants or activity in the protected areas shall be located near the narrower buffer widths and higher intensity uses, (such as parking lots) shall be located adjacent to the widest buffer areas.

**d.** Except as otherwise provided herein and as approved by the Planning Board, buffer areas shall be left undisturbed. Buffer areas shall be shown on the site plan or a survey filed with the County Clerk and the restrictions on the use of the buffer set forth herein shall be included in a deed restriction filed with the County Clerk. The delineation of the buffer areas shall be demarcated on site both during and after construction.

**e. Allowable Buffer Area Uses.**

**i.** The 25 feet of the buffer area closest to the protected resource shall be left undisturbed unless a clearing plan is approved by the Planning Board to create a view corridor.

ii. Within the 25 feet the Planning Board may approve construction of boardwalks to a watercourse or waterbody, footpaths parallel to the watercourse, stormwater management measures and road and utility crossings.

iii. Within the balance of the buffer area the Planning Board may approve the placement of constructed wetlands, hiking trails and bicycle paths constructed of pervious materials.

**f. Prohibited Buffer Area Uses and Activities.** Unless specifically approved by the Planning Board pursuant to subparagraph (g), buffer areas shall remain undisturbed without any clearing, grading, construction or be used for the storage or stockpiling of any materials including sand, gravel or snow accumulated from snowplowing. There shall be no application of herbicides, pesticides or fertilizers in the buffer area. Where any government regulation, except for this zoning code, establishes separation distances for the regulated activity, such distance shall be measured from the outer edge of the buffer area.

**2.5 Tree Protection.** Minimizing the removal of trees and preserving mature trees protects the environment by reducing stormwater runoff, maintaining habitat, promoting clean air and reducing heat island effects. As part of its site plan review, the Planning Board shall review and approve a tree preservation plan that minimizes to the maximum extent practicable the removal of trees.

**a. Projects clearing 0.5 acres or greater of undisturbed land.** The site plan application shall identify the location of all major vegetation including all trees larger than 6 inches dbh. In approving a site plan that meets the objectives of the applicant, the Planning Board shall minimize the loss of trees by identifying the following for preservation:

i. Trees that are important to the site or neighborhood due to their size, age or rarity.

ii. Trees located in environmentally sensitive areas such as wetlands.

iii. Trees that offer visual screening or noise buffers to adjoining properties.

iv. Trees that shelter other trees from strong winds or are part of a continuous and mutually dependent canopy.

**b. Protection of identified trees.** Where an approved site plan identifies trees for preservation, the applicant shall undertake the following:

i. If development of the project will require the disturbance of tree root zones, a certified arborist or registered landscape architect shall prepare a detailed tree protection plan which protects root zones to the maximum extent practicable, prior to the commencement of site activities and a copy of the plan shall be provided to the Building Inspector.

ii. The applicant shall prevent damage to the trunks of trees identified for preservation. In extremely confined work zones, there shall be a protective barrier placed around the tree.

iii. Where disturbance of roots is necessary, excavation within the root zone shall be done with extreme care using hand tools to prevent unnecessary damage to adjacent fibrous root structures. Roots should be pruned using clean vertical cuts that do not fray or strip the roots.

- iv.** Trees that have had their roots pruned shall also have their canopy pruned in direct proportion to the amount of root trimming as provided in the tree protection plan.
- v.** Any trees which are removed during development of the site plan which were not previously approved for removal by the Planning Board shall be replaced with equivalent trees unless otherwise waived by the Planning Board.
- c.** Nothing contained herein shall preclude a property owner from removing trees identified for preservation, which are diseased, severely damaged or otherwise present a threat to public health or safety.

## Gap 5 – Open Space Management/Cluster Subdivisions

*Albany, Bethlehem, Town of Colonie, New Scotland and Voorheesville all have cluster or conservation subdivision provisions. Cohoes and the Villages of Colonie, Green Island and Menands do not appear to have such provisions. The model law below tracks the language in the NYS Village Law (See Sec. 7-738), but the language is also applicable under the General City Law.*

*Similar benefits can be achieved by permitting PUDs and PDDs (Planned Unit Developments and Planned Development Districts for commercial or mixed-use commercial/residential projects that incorporate a common plan for development and generally waive lot size and setback requirements. Most if not all of the Coalition members have provisions in their zoning codes that permit PUDs or PDDs.*

### **1.0 Authority**

Authorization is hereby granted to the Village of \_\_\_\_\_ Planning Board pursuant to §7-738 of the NYS Village Law (or Town of \_\_\_\_\_ Planning Board pursuant to NYS Town Law § 278; or City of \_\_\_\_\_ Planning Board pursuant to General City Law §37) to allow consideration of an alternate cluster development design. Any alternate cluster design submission shall comply with the purpose, procedures, standards and open space requirements set forth in this chapter and the zoning code of the (Village, Town, City) of \_\_\_\_\_. Any applicant may on its own initiative submit an application for a cluster development or the Planning Board may require an applicant seeking approval of a traditional major subdivision to submit an alternate cluster development design which the Planning Board may determine is the appropriate type of development for the subject property. [Note: cluster proposals may be left entirely up to the applicant or may be mandated by PBs]

### **2.0 Purpose**

Cluster development has numerous environmental and community benefits, including:

- 1) Reduces the impervious cover in a development. Impervious cover contributes to degradation of water resources by increasing the volume of surface runoff, and preventing infiltration of rainfall into the soil surface.
- 2) Reduces pollutant loads to streams and other water resources.
- 3) Reduces potential pressure to encroach on resource buffer areas.
- 4) Reduces soil erosion potential by reducing the amount of clearing and grading on the site.
- 5) Preserves green space.
- 6) Preserves open space for recreation.
- 7) Reduces the capital cost of development.
- 8) Reduces the cost of stormwater management by concentrating runoff in one area and reducing runoff volumes.
- 9) Provides a wider range of feasible sites to locate stormwater BMPs.

- 10) Reduces the cost of future public services needed by the development.
- 11) Can increase future property values.
- 12) Creates a sense of community and pedestrian movement.
- 13) Promotes development in harmony with the Village (*Town or City*) of \_\_\_\_\_'s Comprehensive Land Use Plan

### 3.0 Definitions

- a. Base Density: The minimum density permitted in the property's zoning district  
(dwelling units per acre) without cluster development.
- b. Conservation Easement: For the purposes of this section, a conservation easement is a legal agreement between a property owner and a land trust or a government agency that preserves the character of the land and permanently limits the use of the land subject to the easement in a manner consistent with the approvals for the project. If the easement is granted to a land trust the easement must also contain language granting third-party enforcement rights to the (City, Town, Village) in the event the land trust is unable to or unwilling to enforce the terms of the easement.
- c. Community Open Space: The area of open space remaining after green space has been designated. The area may be used for passive or active recreation, or stormwater management.
- d. Frontage Distance: The width of a housing lot (in feet) that fronts along the street.
- e. Green Space: Open space maintained in a natural, undisturbed or revegetated condition.
- f. Impervious Cover: Any paved or constructed surface or any uncovered ground area that cannot effectively absorb or infiltrate rainfall due to human activity.
- g. Natural Condition: The topography and vegetation of an area that is unaltered by clearing and grading during construction and which is protected in perpetuity from further development or alteration.
- h. Wetland: Any freshwater wetland regulated by the State of New York pursuant to Article 24 of the New York State Environmental Conservation Law and any federally designated wetland regulated by the U.S. Army Corps of Engineers pursuant to the Clean Water Act.
- i. One Hundred Year Floodplain: The area of land adjacent to a stream that is subject to inundation during a storm event that has a 1% probability of occurring in any given year.

- j. **Open Space:** A portion of a development site that is permanently set aside for public or private use and will not be developed. Open space may be used as community open space, or preserved as green space.
- k. **Cluster Development:** A development pattern that arranges the layout of buildings in a compact area of the site so as to reserve a portion of the site for community open space or green space that is protected in perpetuity.
- l. **Right-of-Way:** The width of a public roadway that encompasses the pavement width, and adjacent land needed for placement of sidewalks, utilities and storm drainage.
- m. **Setback:** The distance a structure must be located from property lines or other structures.
- n. **Stream Buffer:** A vegetated area bordering a stream which exists or is established to protect a stream system. Alteration of this vegetated area is strictly limited.
- o. **Unbuildable Land:** The area of a site that includes streams, open water, wetlands, slopes of 15% or more on previously undisturbed sites, and the 100-year floodplain.

#### **4.0 Eligibility for Cluster Development**

- a. The provisions of this section apply to all residential zones with a permitted density less than or equal to **eight** dwelling units per acre. *Note: Municipality may choose not to set a permitted density in order to have greater flexibility.*
- b. The minimum size of a parcel of land proposed for a cluster development shall be **five** acres.
- c. Open space requirements must be met where more than **2 acres** will be disturbed.
- d. Applications for cluster developments shall be subject to the same procedures as a conventional subdivision and will not require variances from the Zoning Board of Appeals for setbacks or lot sizes.
- e. Owners of previously approved and filed subdivision plats may apply for an amendment of all or a portion of said plat to be resubdivided as a cluster development.
- f. *Areas Not Considered Open Space.* The following land areas are not included as dedicated open space for the purposes of this section:
  - 1. The area of any street right-of-way proposed to be dedicated to the public.
  - 2. Any land area that is flooded and/or submerged under water for more than **100** days of the calendar year.

3. Any portion of the project used for commercial purposes.

## 5.0 Design Criteria

- a. In addition to the requirements for a preliminary plat application, an application for a cluster development shall include a map showing the following existing conditions:
  1. all watercourses and water bodies, including classification information if available.
  2. unique geological features
  3. State and federally designated wetlands and the 100' adjacent area for NYS regulated wetlands.
  4. locations of significant natural communities (including endangered, threatened or rare plant species; high quality forested areas)
  5. Slopes equal to or greater than 15%.
  6. 100-year floodplains.
  7. Known historical or archaeological features.
  8. A tree conservation plan identifying all existing trees **12''** diameter at breast height (dbh) or greater and identifying the extent of tree clearing and preservation measures
  9. The land uses on adjacent properties including areas of development and open space. areas, whether permanently preserved or not, to allow the Planning Board to evaluate whether contiguous areas of green space can be preserved to promote the conservation value of the green space.
- b. The total number of residential units allowable within a cluster development shall not exceed the number of units that would otherwise be allowed in the existing zoning district using conventional development. The total number of units allowed shall be determined using the following formula:

$$T = BD \bullet [A - (U+R)]$$

Where:

T = Total Units (dwelling units)

BD = Base Density (dwelling units/acre)

A = Total Site Area (acres)

U = Unbuildable Land as defined in Section 3.0 (acres).

R = Road and Utility Right of Way (acres)

- c. Frontage distance, rear, front and side yard setbacks may be reduced to 50% of the requirements in the base zoning, subject to the following rules:
  1. The frontage distance shall be no less than **10** feet.

2. Front and rear yard setbacks shall be no less than **10** feet.
  3. Sideyard setbacks shall be a minimum of **five** feet. This requirement may be waived by the Planning Board upon the concurrence of the Fire Commissioner for the district where the property is located.
- d. Individual lot sizes may be reduced to 25% of the minimum lot size in the applicable zoning district but may not be less than **1/8** of an acre.
  - e. Irregular lot shapes and shared driveways are permitted in a cluster development.
  - f. Shared septic systems may be permitted at the discretion of Planning Board provided that the requirements of the Albany County Health Department are met, including appropriate provisions for legal obligations related to maintenance and replacement.
  - g. At the discretion of the Planning Board the number of parking spaces required for a residential cluster development shall be two spaces per dwelling unit. Parking may be provided either on-street or in driveways.
  - h. The Applicant shall provide an engineering study assessing multiple paving options for impermeable areas including permeable pavement, permeable concrete, structural grass, and two-track driveways. Unless the Applicant can demonstrate to the satisfaction of the Planning Board that pervious measures are impractical or provide an insignificant water quality benefit, the cluster development shall maximize the use of pervious measures to reduce stormwater runoff.
  - i. Site Landscaping shall use native species, and the use of invasive species in landscaping plans is prohibited. A list of prohibited invasive species can be found on the New York State Department of Environmental Conservation’s Advisory Invasive Plant List.

**6.0 Open Space Requirements**

- a. The total area of dedicated open space shall equal the amount by which all dwelling unit lots are reduced below the base zoning, and shall meet the requirements outlined in Table 1.

Table 1. Open Space Required for Various Densities	
Permitted Base Density (dwelling units/buildable acre)	Open Space Required (% of <u>buildable</u> area)
>1	35%
0.5<BD<1	40%
0.2<BD<0.5	45%

$<0.2$	50%
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b. The following activities or land uses may not be included in the calculation of designated open space:

1. Land considered unbuildable under Section 3.0
2. Existing rights-of-way and utility easements

c. The following areas shall be high priorities for inclusion in designated open space:

1. Buffer areas adjacent to wetlands and watercourses.
2. High quality forest resources – High quality forests are those that are generally undisturbed by recent timber operations or severe erosion, and contain a wide range of living flora including trees, mosses, lichens, and fungi. High quality forests also support a variety of fauna which may be found in the soil, on the forest floor, in the undergrowth, or in the tree canopy. High quality forests may contain wetlands, surface waters, or aquifers. Surface water that supports flora and/or fauna is a characteristic of a high quality forest.
3. Individual specimen trees
4. High quality soil resources – High quality soils support strong flora cover, and are not impacted by the presence of contamination. High quality soils are resistant to erosion and store and filter water. Therefore, soils containing void space capable of storing water and supporting soil biota are beneficial and may be considered high quality soils. Soils within Hydrologic Soil Groups A and B may be considered high quality soils if they are also of good health and support, or may be able to support, a large and diverse population of soil biota and flora. Presence of organic matter, such as leaf litter, promotes high quality soils.

d. At least **75%** of designated open space shall be contiguous, with no portion less than **100** feet wide.

e. At least **50%** of designated open space shall be designated as “green space” as defined in Section 3.0 and shall be maintained in a natural, undisturbed condition.

f. To obtain the greatest benefit from green space, cluster development applications should try to locate green space adjacent to green space or undeveloped land on adjoining properties.

g. Limited access to green space may be allowed in the form of a walking or hiker/biker path, the total area used by such paths shall be no more than **2%** of the total green space area.

h. The remaining designated open space may be “community space” and may be used for passive or active recreation, or green infrastructure stormwater management practices as defined by the New York State Stormwater Management Design Manual.

1. If used for active recreation, impervious cover shall not exceed 5% of this area.
2. If used for stormwater management, all design, construction, maintenance, and public safety requirements shall be met, using the design criteria set forth in the New York

## State Stormwater Management Design Manual.

Nothing provided for in this section requiring setting aside open space for a cluster development shall preclude the Planning Board from requiring the dedication of parks, playgrounds or recreation lands or the payment of fees in lieu of providing such facilities as otherwise required by the Village (*Town or City*) zoning or subdivision law.

### Section 7.0 Open Space Management

- a. The boundaries of designated open space areas, recreation areas, stormwater management facilities, and green space shall be clearly delineated on plans, including record plats, and marked in the field with signage approved by the Planning Board to distinguish these areas from private property and to identify these areas as open space.
- b. Development in designated open spaces in the future is prohibited. Ownership of open space shall be designated through one of the following options the selected option to be approved by the Village Board (*Town Board or City Council*) before the final subdivision plat may be recorded:
  1. Ownership by a single subdivision property owner.
  2. Ownership by a homeowner's association.
  3. Ownership by a not-for-profit land conservation organization.
  4. Ownership by the Village (*Town or City*).
- c. Conservation Easement.
  1. Where the designated open space is owned by a subdivision property owner or a homeowners' association, a conservation easement shall be granted containing the restrictions on the use of the open space and recorded in favor of a not-for-profit land conservation organization or the Village (*Town or City*) granting said organization or Village (*Town or City*) the right to enforce the conservation easement. If the conservation easement is granted to a land conservation organization, the Village (*Town or City*) shall be granted a third-party right of enforcement of the easement.
  2. The conservation easement shall:
    - a. Contain the description of the property and recite the permitted uses approved by the Planning Board in the approval of the cluster development.
    - b. Prohibit the following activities:
      - i. Use of motor vehicles. Maintenance, law enforcement, emergency, and farm vehicles are permitted, as needed.
      - ii. Cutting of healthy trees, regrading, topsoil removal, altering, diverting, or modifying water courses or bodies, except in compliance with a land management plan for the tract in question, conforming to customary standards of forestry, erosion control and engineering.

- iii. No portion of the open space shall be used for roads, building lots, utility structures, driveways, or any principal or accessory structure, except for utility lines and connections previously installed underground. In addition, no part of the open space shall be used for residential, industrial, or commercial purposes except in connection with active agricultural and forestry use.
  - iv. Designated open space shall not be used for emergency training or other uses that may cause or contribute to the damage or degradation of the open space.
3. The conservation easement shall provide that natural features shall generally be maintained in their natural condition, but maybe modified to improve their appearance, functionality, or overall condition, as recommended by experts in the particular area being modified. Permitted modifications may include:
- i. Reforestation
  - ii. Woodland management
  - iii. Meadow management
  - iv. Buffer area landscaping
  - v. Streambank protection
  - vi. Wetlands management
  - vii. Invasive species management
  - viii. Flood plain creation
  - ix. Stormwater management consisting of green infrastructure as defined by the New York State Department of Environmental Conservation
4. Maintenance of Conservation Easement
- i. Unless otherwise agreed to by the Village (*Town or City*), the cost and responsibility of maintaining the open space areas and common facilities shall be borne by the property owner, homeowners association or land conservancy organization holding the conservation easement.
  - ii. If the facilities are not properly maintained, the Village (*Town or City*) may exercise its rights under the conservation easement to enter upon the property and undertake the necessary maintenance and charge the property owner, homeowners association or a land trust for the costs incurred.

## FINAL

### **Albany County Policy Directive for the Design of County Facilities and the Coordination of Green Infrastructure Elements to Reduce Stormwater Pollution**

*This document may be used to establish a clear policy directive to the respective Albany County Departments and Agencies that have design and construction authority over County owned facilities and roads so that they reduce the amount of impervious surfaces and reduce the amount of stormwater runoff. This document should be amended to reflect the County procedure for the review and approval of construction projects including its design and contracting procedures. Bolded numbers reflect suggested values and may be adjusted as deemed appropriate by the County.*

#### **1.0 Purpose and Objectives**

Albany County is a *Traditional Non-land Use Control MS4* pursuant to New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). That permit requires the County to undertake various measures during the design and construction of new facilities and the redevelopment of existing facilities to reduce the discharge of stormwater pollutants to the maximum extent practicable. That is achieved by incorporating the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures in the design of county facilities and roads. This document establishes the process for the review and approval of projects subject to the SPDES General Permit and sets forth the measures that must be considered in the design process.

As a Traditional Non-land Use Control MS4 the County has a legal obligation to assure that all of its activities comply with the requirements of the SPDES General Permit. Failure of a County agency or department to comply with this directive may result in significant penalties imposed by the State of New York on the County. All agency and department heads are responsible for assuring that their respective agency or department fully complies with this directive and as provided in Sec. 3.5 below, no project may proceed to requesting constructing bids, award contracts or commence construction until a project has been approved in accordance with the this directive.

#### **2.0 Applicability**

This directive applies to all projects at County-owned facilities and on County roads that will result in a land disturbance of greater than or equal to one acre. A list of the County-owned facilities and roads is attached as Appendix A. That list will be updated as necessary. This directive also applies to all road reconstruction projects that involve removing the roadway to the bottom 6" of roadbase. Projects resulting in disturbance of less than one acre are also covered if they are part of a larger common plan of development that cumulatively will result in the

disturbance of one acre or more. For the purpose of this directive, “project” refers to any construction activity at any of the facilities or roads listed in Appendix A.

*The above applicability thresholds constitute the minimum requirements under the SPDES General Permit. Albany County could choose to make this guidance applicable to all projects for maximum environmental protection.*

### **3.0 Administration**

3.1 The Commissioner of the Department of Public Works is the designated Stormwater Management Program Coordinator/Officer (“SWPO”) for Albany County and is responsible for the implementation of the Albany County Stormwater Management Plan. The SWPO reviews and approves all Stormwater Pollution Prevention Plans (“SWPPPs”) for all projects that meet the threshold requirements for a SWPPP.

3.2 The SWPO shall convene meetings, on at least a [quarterly] basis of representatives from each County agency, department and commission which has the authority to contract for the construction of County facilities and roads to coordinate integration of the design principles in this guidance and review compliance with the SPDES General Permit. A list of the covered County agencies, departments and commissions is listed in Appendix B.

3.3 Whenever any agency, department or commission is undertaking the design of a new project whether it is a new facility, the redevelopment of an existing facility or the reconstruction of a road, it shall incorporate the design guidelines set forth herein to the maximum extent practicable.

3.4 All facilities and stormwater control measures shall be designed in accordance with the most recent New York State Stormwater Management Design Manual.

3.5 No agency, department or commission shall commit to a project, request construction bids on a project or commence construction until the project has been reviewed by the SWPO and a SWPPP approved.

### **4.0 Avoiding Locating Projects in Sensitive Areas**

The design of projects shall consider the existing conditions on the property and should be designed to minimize impacts on hydrologic soil groups and areas adjacent to wetlands and watercourses. Project design plans shall include a soil protection plan which identifies the areas of the various soil types on the property, hydrologic soil groups and soil erosion factors. The plan shall identify construction staging areas and soil disturbance areas. To the extent practicable construction staging areas should be limited to previously disturbed areas or areas with compacted or poorly infiltrating soils.

## Minimum Action Level

### 4.1 Design Plan Contents

To allow for proper evaluation of a proposed project, site design plans must include a site plan for the project that includes:

- a. All watercourses and water bodies, including classification information if available.
- b. Unique geological features
- c. State and federally designated wetlands and the 100' adjacent area for NYS regulated wetlands.
- d. Locations of significant natural communities (including endangered, threatened or rare plant species; high quality forested areas)
- e. Slopes equal to or greater than 15%.
- f. 100-year floodplains.
- g. A grading plan.
- h. A tree conservation plan identifying all existing trees 12'' diameter at breast height (dbh) or greater and identifying the extent of tree clearing and preservation measures.

## Best Management Action Level

*In addition to the basic information required in Sec. 4.1, Albany County may include some or all of the following requirements to achieve a higher level of best management practices.*

### 4.2 Site Design Standards.

Selection of sites and the design of facilities shall incorporate the following standards:

- a. Grading on slopes equal to or greater than **15%** should be avoided to the maximum extent practicable.
- b. Redevelopment of previously developed sites containing grades equal to or greater than 15% should be limited to the areas of the site currently covered by impervious surfaces. Grading on the remainder of the site with slopes equal to or greater than 15% should be avoided to the maximum extent practicable.
- c. Locating stormwater management control devices within the 100-year floodplain is strongly discouraged and should only be undertaken if there are no other practicable alternatives.
- d. New development should not be located on highly erodible soils or clay soils prone to slippage, unless an engineering study determines the suitability of the soils for construction and the limitation of potential erosion.

(1). Erodible soils are those soils with an erosion factor (K or Kw) of 0.43 or greater as determined by the most recent Natural Resources Conservation Service survey data.

e. New impervious surfaces shall not be located on hydrologic soil groups A or B unless there are no other practicable alternatives.

f. All construction activities, including staging areas, shall be shown on the site plan, be delineated in the field prior to commencing construction and be limited to the following areas:

(1). Within **40** feet of the building perimeter.

(2). Within **10** feet of surface walkways, patios, surface parking and utilities with a diameter of **12** inches or less.

(3). Within **15** feet of road curbs and main trenches for utilities with a diameter of greater than **12** inches.

(4). Within **25** feet of areas constructed with pervious surfaces (including pervious paving materials, stormwater management facilities and playing fields).

g. Unless there is no practicable alternative, vegetation beyond the disturbance areas set forth in Sec. 4.2(f) shall not be cleared or disturbed and all vegetation within the disturbance areas shall be replaced upon completion of construction.

h. Construction staging areas and vehicular travel areas shall not be located underneath tree canopies. Trees identified on the site plan for preservation shall be marked in the field and their tree canopy area delineated.

i. All vegetation, with the exception of invasive species, shall be maintained on all slopes equal to or greater than 15% and for all areas within 50 feet of watercourses and drainage swales.

j. Constructed or graded slopes may not have a slope greater than 3:1 unless an engineering report and soil stability analysis demonstrate that a slope with a steeper grade has a safety factor of at least 1.5 for static loads and 1.1 for pseudostatic loads.

k. No clearing, excavation, stockpiling of materials or placement of fill shall occur on the slide block of unstable slopes or other unstable soil areas unless it can be demonstrated that the proposed activity will not increase the load, drainage, or erosion on the slope or increase the risk of damage to people, adjacent structures, properties or natural resources.

#### Model Action Level

*In addition to the standards in Secs. 4.1 and 4.2, Albany County may include some or all of the following requirements to achieve a higher level of best management practices.*

#### 4.2 Site Design Standards (Continued from the list above)

l. Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group A shall be constructed so at least **90%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless it is demonstrated that the pervious materials present a threat to public health or safety.

m. New buildings proposed on Hydrologic Soil Group A shall have a maximum footprint of **4,500** feet of continuous impervious surface, excepting covered pedestrian walkways with a maximum covered width of **10** feet. Building footprint area consisting of an approved Green Roof or decompacted courtyards or walkways shall be considered pervious surfaces and shall not be calculated as included in the **4,500** maximum area.

n. Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group B shall be constructed so at least **80%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless it is demonstrated that the pervious materials present a threat to public health or safety.

#### 4.3 Natural Resource Buffers

a. Except as otherwise provided herein, natural area buffers shall be maintained in their natural state adjacent to watercourses, wetlands and areas shown on the site plan containing sensitive plant species.

b. Minimum buffer areas shall be as follows but consideration should be made to extend the buffer in appropriate instances where topography requires a greater buffer to provide a level of protection equivalent to the distances set forth herein:

i. 100 feet from the boundary of any state or federally designated wetland.

ii. 100 feet from the top of bank of any perennial watercourse.

iii. 50 feet from the top of bank of an intermittent watercourse.

iv. 50 feet from the boundary of areas containing sensitive plant species.

c. Buffer Averaging. The buffer requirements may be altered and an average buffer used instead if it is determined that a uniform buffer will result in extraordinary practical difficulties due to the unique characteristics of the project site or the character of the buffer area varies in slope, soil types or vegetation and the resource being protected would benefit from a wider buffer in certain areas and would not be adversely impacted by a narrower buffer in other areas. To utilize buffer averaging, the following conditions should be met:

i. There shall be a determination that averaging shall not adversely impact the functions and values of the protected watercourses, wetlands and sensitive habitat areas.

ii. The total area contained within the buffer after averaging shall not be less than the area that would be contained in the buffer without averaging.

iii. To the extent practicable, lower intensity land uses which are less likely to introduce pollutants or activity in the protected areas shall be located near the narrower buffer widths and higher intensity uses, (such as parking lots) shall be located adjacent to the widest buffer areas.

d. Except as otherwise provided herein, buffer areas shall be left undisturbed. Buffer areas shall be shown on the site plan and kept on file in the Department of Public Works. The delineation of the buffer areas shall be demarcated on site both during and after construction.

e. Allowable Buffer Area Uses.

i. The 25 feet of the buffer area closest to the protected resource shall be left undisturbed unless a clearing plan is deemed necessary to create a view corridor.

ii. Within the 25 feet of the buffer area closest to the protected resource there may be constructed boardwalks to a watercourse or waterbody, footpaths parallel to the watercourse, stormwater management measures and road and utility crossings.

iii. Within the balance of the buffer area, there may be located constructed wetlands, hiking trails and bicycle paths constructed of pervious materials.

f. Prohibited Buffer Area Uses and Activities. Buffer areas shall remain undisturbed without any clearing, grading or construction and may not be used for the storage or stockpiling of any materials including sand, gravel or snow accumulated from snowplowing. There shall be no application of herbicides, pesticides or fertilizers in the buffer area. Where any government regulation establishes separation distances for a regulated activity, such distance shall be measured from the outer edge of the buffer area.

#### 4.4 Tree Protection.

Minimizing the removal of trees and preserving mature trees protects the environment by reducing stormwater runoff, maintaining habitat, promoting clean air and reducing heat island effects. All projects shall include a tree preservation plan that minimizes to the maximum extent practicable the removal of trees.

a. Projects clearing 0.5 acres or greater of undisturbed land. The site plan shall identify the location of all major vegetation including all trees larger than 6 inches dbh. In designing a project efforts shall be taken to minimize the loss of trees by identifying the following for preservation:

i. Trees that are important to the site or neighborhood due to their size, age or rarity.

ii. Trees located in environmentally sensitive areas such as wetlands.

iii. Trees that offer visual screening or noise buffers to adjoining uses and neighboring properties.

iv. Trees that shelter other trees from strong winds or are part of a continuous and mutually dependent canopy.

b. Protection of identified trees. Where a final design plan identifies trees for preservation, the following measures shall be undertaken:

i. If development of the project will require the disturbance of tree root zones, a certified arborist or registered landscape architect shall prepare a detailed tree protection plan

which protects root zones to the maximum extent practicable, prior to the commencement of site activities.

ii. Contractors shall be directed to prevent damage to the trunks of trees identified for preservation. In extremely confined work zones, there shall be a protective barrier placed around the tree.

iii. Where disturbance of roots is necessary, excavation within the root zone shall be done with extreme care using hand tools to prevent unnecessary damage to adjacent fibrous root structures. Roots should be pruned using clean vertical cuts that do not fray or strip the roots.

iv. Trees that have had their roots pruned shall also have their canopy pruned in direct proportion to the amount of root trimming as provided in the tree protection plan.

v. Any trees which are removed during construction which were not previously identified in the design plan for removal shall be replaced with equivalent trees unless it is determined otherwise impractical.

c. Nothing contained herein shall preclude Albany County from removing trees identified for preservation, which are diseased, severely damaged or otherwise present a threat to public health or safety.

## **5.0 Facility Design Standards**

All new County facilities shall incorporate the design standards of this section. When there is a substantial renovation of an existing facility or roads are reconstructed down the bottom 6” of subbase, these design standards shall be incorporated to the maximum extent practicable.

### **5.1 Stormwater Conveyance Design**

#### **Minimum Action Level**

a. Concrete or paved gutters shall not be used in any stormwater conveyance measure unless site conditions significantly restrict the ability to use engineered vegetated swales or bioretention methods. Vegetated swales and bioretention measures shall be placed between roads and sidewalks, and shall be designed to include safe emergency overflow provisions for large storm events.

b. Whenever vegetated swales and bioretention measures are utilized, provision shall be made for access to the areas for maintenance of the swales and bioretention measures, including if necessary, agreements with adjacent property owners to allow equipment to access the stormwater measures for maintenance activities.

c. When a new road is being designed or an existing road is reconstructed and sufficient space is available in the right-of-way and appropriate soil conditions are present, vegetated swales or bioretention methods should be used for stormwater conveyance and treatment and shall be designed to include safe emergency overflow events for large storm events. Concrete or paved gutters should not be used unless there are no practicable alternatives.

## 5.2 Building Roof Drains

### Minimum Action Level

- a. All buildings shall be designed with rooftop stormwater conveyance systems that direct stormwater away from roads and parking lots and to vegetated areas with hydrologic soil groups A and B and soils with an infiltration capacity of more than 0.5 inches/hour.

### Best Management Action Level

- b. Rooftop runoff shall be diverted to: a series of rain barrels (or similar rainwater harvesting container); a grassed or vegetated area; a rain garden; a vegetated open channel; an infiltration trench, a pervious surface or a combination of the above or similar measures.

### Model Community Action Level

- c. The design of all new buildings and covered structures shall consider installation of Green Roofs. Design proposals shall include an analysis of the feasibility and cost effectiveness of a Green Roof alternative compared to a conventionally designed roof.
- d. Before committing to including a Green Roof on a building, a maintenance plan for the roof with provisions for periodic inspections shall be required to be on file with the SWPO. Annual reports on the maintenance of the roof shall be provided to the SWPO.

## 5.3 Parking Ratios

- a. Parking lots are a significant source of pollutants carried via stormwater. As the County undertakes the construction of new buildings and the renovation of existing facilities, it will need to assess the need and size of parking facilities and means of encouraging the use of public transit. All projects that may increase the need for parking or involve the alteration of an existing parking lot shall consider the standards in this section to determine the appropriate number of parking spaces and the design of the parking lots.
- b. Parking spaces within parking lots or structures may be installed with electric automobile charging stations, including models that charge by solar energy. Such spaces may count toward parking requirements.

### Minimum Action Level

- c. Facilities should be designed with the following minimum number of parking spaces:

Nursing Homes	1 space for every 3 beds.
Office Buildings	1 space for every 300 sq. ft. of floor area
- d. For all other uses the County shall apply the standard for a specified use most similar to the proposed use as provided in the zoning law for the municipality where the facility is

located with reference to the most current industry standards that incorporate the principles of Low Impact Development.

- e. Upon a determination that there will be adjacent , on-street publicly available parking and that such spaces are underutilized, the facility plan may include said spaces in the count for minimum required off-street parking.

#### 5.4 Parking Lot Design

##### Minimum Action Level

- a. Parking spaces in excess of the minimum number of spaces required in Sec. 5.3 shall be constructed of pervious materials (permeable pavers, porous asphalt, porous concrete, grass-crete or gravel-crete, structural grass or similar materials). Consideration should be given to using pervious materials throughout the parking lot.
- b. In order to maximize the absorption capabilities of landscaped areas, utilities shall not be located within landscaped areas unless it can be demonstrated that avoidance of landscaped areas will result practical difficulties that outweigh the benefits of locating utilities outside landscaped areas.
- c. All parking lots shall include a snow storage and disposal area that provides for snow melt over a vegetated area or into a green infrastructure area.
- d. Parking stalls shall have a maximum width of **9'** and a maximum length of **18'** with the exception of a limited number of stalls designated for buses or delivery trucks not using loading docks.
- e. All parking lots shall be designed with angled parking and one-way traffic aisles. Two-way traffic aisles may be used upon a demonstration that they are necessary for safe and efficient traffic flow.
- f. Where practicable, facility plans should include internal connections to adjacent businesses and roads to facilitate easier pedestrian and vehicle access.

##### Best Management Action Level

- g. A minimum of **10%** and a maximum of **30%** of the parking spaces shall be designed and designated for compact cars and motorcycles. Compact car spaces shall be 8.5' wide and 16' feet deep. Motorcycle spaces shall be 4.5' wide and 10' deep. The location of these spaces shall be determined in a manner that facilitates their use by the intended vehicles and discourages their use by larger vehicles and signage included designating their appropriate use.

### Model Community Action Level

- h. Parking lots larger than **1,200** sf, located on soils of hydrologic soil groups A, B, or C, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 20% of the parking lot area. Parking lots larger than **1,200** sf, located on soils of hydrologic soil group D, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 10% of the parking lot area.
- i. Where a building is located more than **500** feet from a public road, the facility plan shall include a covered pedestrian rest shelter, including a bench, approximately one-half of the distance between the building and the road.

### 5.5 Shared Parking

The County encourages consideration of innovative proposals to propose shared parking arrangements with other land uses in sufficient proximity if it can be demonstrated that the peak use periods for the respective land uses are complementary and will maximize the use of the parking lots while reducing excessively large parking lots. The County may decide to undertake a shared parking arrangement and determine the size of the parking lot based upon consideration of the following:

- a. A demonstration of complementary timing of the use of the parking lot so that adequate space is available for each designated use and the proximity of the parking lots to each respective use.
- b. Written binding agreements between the County and the landowners of adjacent sites for the use of the parking lots and the maintenance thereof and such agreements shall be recorded as deed restrictions.
- c. A determination of the appropriate number of parking spaces for the new development.
- d. Where the approval of a local municipality of non-County owned parking lots is required, the approval of the appropriate entity in the municipality for the shared parking plan.

### 5.6 Proximity to Mass Transit

- a. Where a facility is located within **three (3)** miles of a CDTA bus stop, the facility plan shall provide bike racks or lockers. If bike racks are proposed, the racks should be covered if practicable.
- b. Where a facility is located within a **quarter of a mile (0.25)** miles from a CDTA bus stop, and covered bike racks are provided on-site, the facility plan may reduce the minimum number of parking spaces provided in Sec. 5.3 by **25%**.

- c. Where a facility is located within a **quarter of a mile (0.25)** from a Park & Ride parking lot, the facility plan may to reduce the minimum number of parking spaces provided in Sec. 5.3 by **25%**.

## 5.7 Bicycle Parking

Albany County encourages bicycle use as an alternative to personal cars and the design of new and renovated facilities should include bicycle parking in proximity to the buildings as set forth in this section.

### Minimum Action Level

- a. All new and renovated buildings shall include the following minimum bicycle parking spaces. In each instance, a minimum of two spaces shall be provided for each building.

Office Buildings

1 space for every  
5,000 sq. ft. of floor  
area

- b. Shower and locker facilities for bicyclists are required for all buildings. Lockers for clothing and other personal effects must be located in close proximity to showers and dressing areas to permit access to the locker areas by either gender. A minimum of one (1) clothes locker is required for each long-term bicycle parking space provided.

- c. Location of Bicycle Parking Spaces

- (1) The bicycle parking area must be convenient to building entrances and street access, but may not interfere with normal pedestrian and vehicle traffic. For passive security purposes, the bike parking shall be well-lit and clearly visible to building occupants or clearly visible from the street.
- (2) Bicyclists must not be required to travel over stairs or other obstacles to access bicycle parking.
- (3) Short-term bicycle parking spaces must be located no more than **fifty (50)** feet from the principal building entrance and at the same grade as the sidewalk or an accessible route.
- (5) Long-term bicycle parking spaces must be located in a covered area that is easily accessible from the building entrances. The area must comply with one (1) of the following secure locations:
  - (i) Enclosed in a locked room.
  - (ii) Enclosed by a fence with a locked gate.
  - (iii) Located within view or within **one-hundred (100)** feet of an attendant or security guard.

- (iv) Located in an area that is monitored by a security camera.
- (v) Located in an area that is visible from employee work areas.

d. Design of Bicycle Parking Spaces

- (1) Required bicycle spaces must have a minimum dimension of two (2) feet in width by six (6) feet in length, with a minimum overhead vertical clearance of seven (7) feet. Each required bicycle parking space must be accessible without moving another bicycle. There must be an aisle at least (five) 5 feet wide between each row of bicycle parking to allow room for bicycle maneuvering.
- (2) The area devoted to bicycle parking must be surfaced as required for vehicle parking areas.
- (3) All long-term bicycle parking spaces must be covered, which can be achieved through use of an existing overhang or covered walkway, weatherproof outdoor bicycle lockers or an indoor storage area. Where bicycle parking is not located within a building or locker, the cover design must be of permanent construction, designed to protect bicycles from rainfall and with a minimum overhead vertical clearance of seven (7) feet.
- (4) Bicycle parking facilities must provide lockable enclosed lockers or racks, or similar structures, where the bicycle may be locked by the user. Racks must support the bicycle in a stable position. Structures that require a user-supplied locking device must be designed to easily allow a high-security U-shaped lock to secure the bike frame and one wheel while both wheels are still on the frame's brackets. All lockers and racks must be securely anchored to the ground or a structure to prevent the racks and lockers from being removed from the location.
- (5) If required bicycle parking facilities are not visible from the street or principal building entrance, signs must be posted indicating their location.

## 5.8 Sidewalks

### Minimum Action Level

- a. Sidewalks should have a maximum width of **5** feet unless high pedestrian volumes warrant a wider sidewalk.
- b. Sidewalks shall be graded such that they drain to the vegetated areas in front of buildings except in areas where the introduction of additional groundwater may be undesirable (building foundations, Hydrologic Soil Group C or D soils) or determined to be physically impracticable.

### Best Management Action Level

- c. Sidewalks constructed in accordance with the Americans with Disabilities Act (ADA) utilizing compliant porous pavement or an alternative porous surface are encouraged. Permeable sidewalks are strongly encouraged and may be required in lieu of impermeable sidewalks where soils are within Hydrologic Soil Group A or B, unless determined to be physically infeasible or waived due to verified safety concerns.

### Model Community Action Level

- d. Where practical and dependent upon pedestrian volume, sidewalks should only be placed on one side of the street with appropriate and safe pedestrian access provided to cross the street.
- e. A continuous permeable strip shall be located between the sidewalk and the curbside or edge of pavement. The permeable strip shall be **3 feet** wide or **1/3** the width of the sidewalk, whichever is greater and shall extend for the length of the sidewalk.
- f. Where the speed limit is **35 mph** or less, sidewalks must be constructed at street level to reduce the need for curbing that channelizes stormwater flow. In this circumstance, the sidewalk and edge of road shall be separated by a grass or planting strip with a minimum width of **4 feet** unless physical constraints preclude the design. Bollards and protective buffers/markings may be necessary to enhance pedestrian safety.

### 5.9 Curb Design

- a. Curbs along roads, parking lots and driveways shall include curb cuts to allow for diversion into green infrastructure practices, including stormwater planters, bioretention areas, tree pits and filter strips. Curb cuts should incorporate trash racks to prevent trash from entering the green infrastructure measures.
- b. Curb bump-outs with overflows to divert stormwater to a conventional stormwater system should be used in certain circumstances. Curb bump-outs are encouraged in lieu of catch basins where soils are within Hydrologic Soil Group A or B. Curb bump-outs may be placed in locations where catch basins would otherwise be constructed, and also serve as a traffic calming measure, and crosswalk length reduction. Curb bump-outs/curb extensions shall be designed in accordance with the New York State Stormwater Management Design Manual's requirements and guidance for Stormwater Planters.
- c. A curb bump-out is a vegetated curb extension that protrudes into the street either mid-block or at an intersection, creating a widening of the permeable strip between the sidewalk and the road or parking lot and a narrowing of the road. A bumpout is composed of a layer of stone that is topped with soil and plants. An inlet or curb-cut directs runoff into the bumpout structure where it can be stored, infiltrated, and taken up by the plants.

### Best Management Action Level

d. Curbing shall not be included along any new or reconstructed roads or driveways which may interfere with stormwater flows unless it is demonstrated that such curbs are necessary for engineering or safety reasons.

### 5.10 Landscaping and Permeable Strips

#### Minimum Action Level

a. Landscaped areas in a project site plan, including in parking lots, shall be lowered and incorporate curb cuts or other diversion devices to divert stormwater to the landscaped areas as part of the stormwater management plan.

b. Permeable strips between sidewalks and roads and parking lots may be utilized as linear bioretention areas with curb cuts that divert the stormwater into the bioretention areas.

c. Trees to be planted in the permeable strip shall be planted either individually or in groups with a minimum separation distance of 30 feet on center and a maximum separation distance of 75 feet on center. Selected trees shall be noninvasive and have an upright branching pattern with a minimum vertical clearance of 8 feet to the lowest branches at the time of planting.

d. For non-planted permeable strips, the surface material shall be permeable based on NYSDOT material options applicable to the intended use. Design shall be such that the surface is not subject to frost heave conditions damaging the structure of the strip.

e. When backfill is proposed beyond the planting zone within the permeable strip, the backfill shall be structural soil with a depth no less than 24 inches from finished grade. The use of recycled concrete aggregate is not permitted as backfill.

f. For planted permeable strips turf grass is prohibited. Plants shall consist of: native meadow plantings, low herbaceous plants or no-mow ground covers, except that street trees within the planting strip shall have a 3 foot diameter/square mulch bed at their base.

g. Parking lots shall include **one** tree for every **1,200** feet of impervious parking area. Sufficient permeable or infiltration areas shall be provided around the expected radius of the mature tree to provide infiltration for the tree drip area. Existing mature trees shall not be included in the calculation for minimum trees except for areas where the existing mature tree canopy extends over impervious surfaces. Tree plantings may be designed as tree pits for stormwater treatment as provided in the latest version of the New York State Stormwater Management Design Manual.

### Best Management Action Level

h. For every impervious parking space, the project plan shall include at least **20** square feet of vegetated area within the parking lot. "Within the parking lot" means that at least **75%** of the

perimeter of the landscaped area is located within the parking lot. Vegetated areas must include native non-invasive species and may be used for green infrastructure stormwater practices.

#### Model Community Action Level

i. Surface parking lots with more than **two** rows of parking shall include a minimum of a **4'** wide landscaping islands between rows. These islands shall include curb cuts/wheel stops to allow entry of stormwater for treatment/infiltration. Landscaped areas shall utilize tree plantings, native vegetation, dry swales, stormwater planters, tree pits, or bioretention in center islands between parking rows. Stormwater management features must include the following:

1. Trees shall have dense canopy for rainfall interception, being round, oval, or v-shaped in form.
2. Trees used shall be native and have proven observed salt tolerance.
3. The area of the parking lot subject to vehicular traffic, that also corresponds to the mature tree's canopy area, shall incorporate structural measures to prevent soil compaction and root damage. This may be accomplished by use of a soil structure specifically designed to withstand observed traffic loading.
4. Water must be allowed to infiltrate to the tree roots in an amount to ensure tree survival with minimal watering after the first year.
5. Soil volume must be the amount required for the specific tree and intended function.
6. Trees shall be selected based on several factors, including observed local healthy tree stands in similar applications, existing and anticipated soil compaction, existing pH, planned water availability, adjacent road maintenance (salt, sand, etc), presence of overhead utilities, availability of sunlight, percolation rate, soil's ability to circulate air, and soil type.
7. Because paved parking lots and the cars associated with them can raise local temperatures by up to 20 degrees, trees selected near heat islands should be tolerant of these conditions.
8. Trees shall be selected based on best landscape practices, using the guidance document "Recommended Urban Trees: Site Assessment and Tree Selection for Stress Tolerance", as published by the Urban Horticultural Institute, Department of Horticulture, Cornell University, Ithaca, NY or other industry-accepted standards.

j. All parking lot runoff is required to flow through a planted area to cool runoff temperatures before entering the storm drain system.

## Albany County Roads

County Route No.	Road or Street Name	Location
CR 1	Switzkill Road	Towns of Berne/Westerlo
CR 2	Cole Hill Road	Town of Berne
CR 3	Willsey Road	Town of Berne
CR 6	Ravine Road/Shulfelt Road	Towns of Berne/Rensselaerville
CR 9	Canaday Hill Road	Town of Berne
CR 10	Huntersland/Crystal Lake Road	Towns of Berne/Rensselaerville
CR 11	North Road	Town of Berne
CR 12	Rapp Road/Garvey Hill	Towns of Berne/Rensselaerville
CR 13	Sickle Hill Road	Town of Berne
CR 14	Joslyn School Road	Town of Berne
CR 52	Elm/Elm Ave. Ext./Cherry Ave.	Town of Bethlehem
CR 53	Albany So. Road/Jericho Road	Town of Bethlehem
CR 54	Bell Crossing Road	Town of Bethlehem
CR 55	Creble Road	Town of Bethlehem
CR 101	Undercliff Road	Towns of Bethlehem/Coeymans
CR 102	Starr Road	Towns of Bethlehem/Coeymans/ New Scotland
CR 103	Blodgett Road	Town of Coeymans
CR 106	Tompkins Road	Town of Coeymans
CR 108	Copeland Hill Road	Town of Coeymans
CR 109	Lawson Lake Road	Towns of Coeymans/ New Scotland
CR 111	Alcove Road	Towns of Coeymans/Westerlo
CR 112	Staco Road	Town of Coeymans
CR 151	Albany Shaker Road/ Dalessandro Blvd.	Town of Colonie
CR 152	Old Niskayuna Road	Town of Colonie
CR 153	Old Wolf Road	Town of Colonie
CR 154	Osborne Road	Town of Colonie
CR 155	Everett Road	Town of Colonie

CR 156	Fuller Road	Town of Colonie/City of Albany
CR 157	Karner Road/ Watervliet Shaker Road	Towns of Guilderland/Colonie/Village of Colonie/City of Albany
CR 160	Sicker Road	Town of Colonie
CR 163	Old Albany Shaker Road/ Hockey Lane/ Heritage Lane	Town of Colonie
CR 201	Main St./No. Main/Depot Road	Village of Voorheesville/Town of Guilderland
CR 202	Meadowdale Road	Towns of Guilderland/New Scotland
CR 203	Normanskill Ave/Johnston Road	Village of Voorheesville/ Town of Guilderland
CR 204	Russell/Krumkill/ School House Roads	Towns of Guilderland/Bethlehem/ City of Albany
CR 208	School Road	Town of Guilderland
CR 252	Knox Cave Road	Towns of Knox/Berne
CR 253	Bozenkill Road/Maple Ave. Ext.	Towns of Knox/Guilderland/ Village of Altamont
CR 254	Pleasant Valley/Rock Road	Town of Knox
CR 255	Knox Gallupville Road	Town of Knox
CR 256	Ketchem Road	Town of Knox
CR 259	Beebe Road	Town of Knox
CR 260	Witter Road	Town of Knox
CR 261	Bell Road	Town of Knox
CR 262	Middle Road	Town of Knox
CR 301	Tarrytown/Monkey Run/ Cedar Grove Roads	Town of New Scotland
CR 303	Pinnacle Road/Beaver Dam Road	Towns of New Scotland/Berne
CR 306	Voorheesville Ave/Krumkill/ Font Grove Roads	Village Voorheesville/Town of New Scotland
CR 307	Picard Road	Town of New Scotland
CR 308	New Scotland So./Feura Bush/ Unionville Roads	Town of New Scotland
CR 311	Beaver Dam Road	Town of New Scotland
CR 312	Clarksville So. Road	Towns of New Scotland/ Westerlo/Coeymans
CR 351	Medusa Road	Town of Rensselaerville
CR 352	Fox Creek Road	Town of Rensselaerville

CR 353	Delaware Turnpike	Town of Rensselaerville
CR 354	Potter Hollow Mt. Road	Town of Rensselaerville
CR 357	Fox Creek Road	Town of Rensselaerville
CR 358	Baitsholts Road	Town of Rensselaerville
CR 359	Kropp Road	Town of Rensselaerville
CR 360	Crow Hill Road	Town of Rensselaerville
CR 361	Albany Hill/Town Line Road	Towns of Rensselaerville/Westerlo
CR 362	Scott Patent Road	Town of Rensselaerville
CR 401	Westerlo/So. Westerlo Road	Town of Westerlo
CR 402	Westerlo/Medusa Road	Town of Westerlo
CR 403	South Westerlo-Medusa Road/ Marks Road	Towns of Westerlo/Rensselaerville
CR 404	Bear Swamp Road	Town of Westerlo
CR 405	Sunset Hill Road	Town of Westerlo
CR 406	Kuster Road	Town of Westerlo
CR 408	Fancher Road	Towns of Berne/Westerlo
CR 409	McNaughtons Road	Town of Westerlo
CR 410	Thayers Corners Road	Town of Westerlo
CR 411	Newery Road	Town of Westerlo
CR 412	Airport Road	Towns of Westerlo/Berne
CR 413	Chapel Hill Road	Town of Westerlo
CR 414	Horseshoe Bend Road	Town of Westerlo

### County Owned Properties

#### City of Albany

Albany County Office Building 112 State St.  
 Dept of Social Services 162 Washington Ave.  
 Mental Health Dept. 260 South Pearl St.  
 Health Dept. 175 Green St.  
 Probation 60 South Pearl  
 Times Union Center 51 South Pearl St.  
 County Court House 16 Eagle St.  
 County Justice Building 6 Lodge St  
 South Sewer Plant Church St.  
 Hall of Records 95 Tivoli St.  
 County Garages –  
     Howard St.  
     Times Union Center Garage 100 Beaver St.  
     Green St. (Lot)  
     Spruce St. 3 Spruce St.

## **Town of Colonie**

Albany County Nursing Home **Heritage Lane**  
Ann Lee Home **Heritage Lane**  
White House **Heritage Lane**  
Laundry Building **Heritage Lane**  
Shaker Community Building **Heritage Lane**  
Shaker Barn **Heritage Lane**  
DPW Colonie **Heritage Lane**  
Heritage Park **Heritage Lane**  
Hill House 1 **Hill House Lane**  
U.S. Hockey Facility **Hockey Lane**  
Albany County Jail **Old Albany Shaker Rd**  
Juvenile Detention Center **Connector Rd.**  
Albany International Airport **Dalessando Blvd.**  
F.A.A Control Tower **Old Niskayuna**  
Airport Industrial Park **Sickler Rd**  
Airport Maintenance Center **Old Niskayuna**  
Tobin First Prize Center **76 Exchange St.**  
North Sewer Plant 1 **Canal St. South**

## **Town of New Scotland**

DPW Main Building **449 New Salem Rd**  
DPW Guilderland Sub Station **449 New Salem Rd**  
DPW New Salem Sub Station **449 New Salem Rd**  
**Cont.**

## **Town of New Scotland**

Cooperative Extension **24 Martin Rd.**  
Weatherization Building **24 Martin Rd.**  
9-1-1 Communication Building **449 New Salem**  
Sheriff's Sub Station **339 New Salem**

## **Town of Berne**

DPW Berne Sub Station **821 Cole Hill Rd County Rt. 2**

## **Town of Coeymans**

DPW Coeymans Sub Station **156 County Rt. 111**  
Lawson Lake Camp Ground - Upper Camp **County Rt. 109**

Lawson Lake Camp Ground - Lower Camp (Lake) County Rt. 109

**Town of Westerlo**

DPW Westerlo Sub Station 19 County Rt. 410

**Town of Rensselaerville**

DPW Rensselaerville Sub Station 265 Medusa Rd.

**Town of Knox**

DPW Knox Sub Station 1269 Township Rd

**Town of Bethlehem**

DPW\_Bethlehem Sub Station 355 Quarry Rd

# FINAL

University at Albany

Policy Document for Adoption of Green Infrastructure

Measures in the Design of University Facilities

*This document may be used to establish a policy directive to the appropriate University at Albany (UAlbany) departments to guide in the development and coordination of new and redeveloped university facilities so that they reduce the amount of impervious surfaces and reduce the amount of stormwater runoff. This document should be amended to reflect the appropriate administrative structure of UAlbany and its design and contracting procedures. Bolded numbers reflect suggested values and may be adjusted as deemed appropriate by UAlbany.*

## **1.0 Purpose and Objectives**

The University at Albany (UAlbany) is a *non-traditional MS4* pursuant to New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). That permit requires UAlbany to undertake various measures during the design and construction of new facilities and the redevelopment of existing facilities to reduce the discharge of stormwater pollutants to the maximum extent practicable. That is achieved by incorporating the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures in the design of university facilities. This document establishes when these measures should be applied in the design process and the administrative coordination of the preparation and review of the design documents.

## **2.0 Applicability**

This guidance applies to all projects that will result in a land disturbance of greater than or equal to one acre. Projects resulting in disturbance of less than one acre are also covered if they are part of a larger common plan of development that cumulatively will result in the disturbance of one acre or more. For the purpose of this guidance, "project" refers to any building, parking lot, sidewalk, playing field or any other activity that will result in the disturbance of land.

*Note: The above applicability thresholds constitute the minimum requirements under the SPDES General Permit. UAlbany could choose to make this guidance applicable to all projects for maximum environmental protection.*

### **3.0 Administration**

*As part of its Stormwater Management Program (SWMP) UAlbany may already have a mechanism to address the coordination of the design of projects and review of SWPPs. This section should be adapted to conform with the SWMP.*

3.1 *[Insert name of person, title or department – for purposes of this draft, reference will be made to “SWPP Officer”]* is responsible for the implementation of the UAlbany SWMP and shall review and approve all SWPPs for all projects that require a SWPP.

3.2 The *[SWPP Officer]* shall convene meetings, on at least a *[quarterly]* basis of representatives from the UAlbany departments of *[insert all departments/offices that plan, design and contract for facility construction]* to coordinate integration of the design principles in this guidance and review compliance with the SPDES General Permit.

3.3 Whenever a department is undertaking the design of a new project whether it is a new facility or the redevelopment of an existing facility, it shall incorporate the design guidelines set forth herein to the maximum extent practicable.

3.4 All facilities and stormwater control measures shall be designed in accordance with the most recent New York State Stormwater Management Design Manual.

### **4.0 Avoiding Locating Projects in Sensitive Areas**

The design of projects shall consider the existing conditions on the property and should be designed to minimize impacts on hydrologic soil groups and areas adjacent to wetlands and watercourses. Project design plans shall include a soil protection plan which identifies the areas of the various soil types on the property, hydrologic soil groups and soil erosion factors. The plan shall identify construction staging areas and soil disturbance areas. To the extent practicable construction staging areas should be limited to previously disturbed areas or areas with compacted or poorly infiltrating soils.

#### Minimum Action Level

#### 4.1 Design Plan Contents

To allow for proper evaluation of a proposed project, site design plans must include a site plan for the project that includes:

- a. all watercourses and water bodies, including classification information if available.
- b. unique geological features
- c. State and federally designated wetlands and the 100' adjacent area for NYS regulated wetlands.

- d. locations of significant natural communities (including endangered, threatened or rare plant species; high quality forested areas)
- e. Slopes equal to or greater than 15%.
- f. 100-year floodplains.
- g. A grading plan.
- h. A tree conservation plan identifying all existing trees 12'' diameter at breast height (dbh) or greater and identifying the extent of tree clearing and preservation measures.

### Best Management Action Level

*In addition to the basic information required in Sec. 4.1, UAlbany may include some or all of the following requirements to achieve a higher level of best management practices.*

#### 4.2 Site Design Standards.

Selection of sites and the design of facilities shall incorporate the following standards:

- a. Grading on slopes equal to or greater than **15%** should be avoided to the maximum extent practicable.
- b. Redevelopment of previously developed sites containing grades equal to or greater than 15% should be limited to the areas of the site currently covered by impervious surfaces. Grading on the remainder of the site with slopes equal to or greater than 15% should be avoided to the maximum extent practicable.
- c. Locating stormwater management control devices within the 100-year floodplain is strongly discouraged and should only be undertaken if there are no other practicable alternatives.
- d. New development should not be located on highly erodible soils or clay soils prone to slippage, unless an engineering study determines the suitability of the soils for construction and the limitation of potential erosion.

(1). Erodible soils are those soils with an erosion factor (K or Kw) of 0.43 or greater as determined by the most recent Natural Resources Conservation Service survey data.

- e. New impervious surfaces shall not be located on hydrologic soil groups A or B unless there are no other practicable alternatives.
- f. All construction activities, including staging areas, shall be shown on the site plan, be delineated in the field prior to commencing construction and be limited to the following areas:
  - (1). Within **40** feet of the building perimeter.
  - (2). Within **10** feet of surface walkways, patios, surface parking and utilities with a diameter of **12** inches or less.

(3). Within **15** feet of road curbs and main trenches for utilities with a diameter of greater than **12** inches.

(4). Within **25** feet of areas constructed with pervious surfaces (including pervious paving materials, stormwater management facilities and playing fields).

g. Unless there is no practicable alternative, vegetation beyond the disturbance areas set forth in Sec. 4.2(f) shall not be cleared or disturbed and all vegetation within the disturbance areas shall be replaced upon completion of construction.

h. Construction staging areas and vehicular travel areas shall not be located underneath tree canopies. Trees identified on the site plan for preservation shall be marked in the field and their tree canopy area delineated.

i. All vegetation, with the exception of invasive species, shall be maintained on all slopes equal to or greater than 15% and for all areas within 50 feet of watercourses and drainage swales.

j. Constructed or graded slopes may not have a slope greater than 3:1 unless an engineering report and soil stability analysis that a slope with a steeper grade has a safety factor of at least 1.5 for static loads and 1.1 for pseudostatic loads.

k. No clearing, excavation, stockpiling of materials or placement of fill shall occur on the slide block of unstable slopes or other unstable soil areas unless it can be demonstrated that the proposed activity will not increase the load, drainage, or erosion on the slope or increase the risk of damage to people, adjacent structures, properties or natural resources.

#### Model Action Level

*In addition to the standards in Secs. 4.1 and 4.2, UAlbany may include some or all of the following requirements to achieve a higher level of best management practices.*

#### 4.2 Site Design Standards (Continued from the list above)

l. Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group A shall be constructed so at least **90%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless it is demonstrated that the pervious materials present a threat to public health or safety.

m. New buildings proposed on Hydrologic Soil Group A shall have a maximum footprint of **4,500** feet of continuous impervious surface, excepting covered pedestrian walkways with a maximum covered width of **10** feet. Building footprint area consisting of an approved Green Roof or decompacted courtyards or walkways shall be considered pervious surfaces and shall not be calculated as included in the **4,500** maximum area.

n. Proposed paved surfaces on previously undeveloped soils within Hydrologic Soil Group B shall be constructed so at least **80%** of the surface is comprised of pervious materials (including porous concrete, porous asphalt, structural pavers and structural grass or equivalent materials), unless it is demonstrated that the pervious materials present a threat to public health or safety.

### 4.3 Natural Resource Buffers

a. Except as otherwise provided herein, natural area buffers shall be maintained in their natural state adjacent to watercourses, wetlands and areas shown on the site plan containing sensitive plant species.

b. Minimum buffer areas shall be as follows but consideration should be made to extend the buffer in appropriate instances where topography requires a greater buffer to provide a level of protection equivalent to the distances set forth herein:

i. 100 feet from the boundary of any state or federally designated wetland.

ii. 100 feet from the top of bank of any perennial watercourse.

iii. 50 feet from the top of bank of an intermittent watercourse.

iv. 50 feet from the boundary of areas containing sensitive plant species.

c. **Buffer Averaging.** The buffer requirements may be altered an average buffer be used instead if it is determined that a uniform buffer will result in extraordinary practical difficulties due to the unique characteristics of the project site or the character of the buffer area varies in slope, soil types or vegetation and the resource being protected would benefit from a wider buffer in certain areas and would not be adversely impacted by a narrower buffer in other areas. To utilize buffer averaging, the following conditions should be met:

i. There shall be a determination that averaging shall not adversely impact the functions and values of the protected watercourses, wetlands and sensitive habitat areas.

ii. The total area contained within the buffer after averaging shall not be less than the area that would be contained in the buffer without averaging.

iii. To the extent practicable, lower intensity land uses which are less likely to introduce pollutants or activity in the protected areas shall be located near the narrower buffer widths and higher intensity uses, (such as parking lots) shall be located adjacent to the widest buffer areas.

d. Except as otherwise provided herein, buffer areas shall be left undisturbed. Buffer areas shall be shown on the site plan and kept on file in (*insert name of appropriate UAlbany office*). The delineation of the buffer areas shall be demarcated on site both during and after construction.

e. Allowable Buffer Area Uses.

i. The 25 feet of the buffer area closest to the protected resource shall be left undisturbed unless a clearing plan is deemed necessary to create a view corridor.

ii. Within the 25 feet of the buffer area closest to the protected resource there may be constructed boardwalks to a watercourse or waterbody, footpaths parallel to the watercourse, stormwater management measures and road and utility crossings.

iii. Within the balance of the buffer area, there may be located constructed wetlands, hiking trails and bicycle paths constructed of pervious materials.

f. **Prohibited Buffer Area Uses and Activities.** Buffer areas shall remain undisturbed without any clearing, grading, construction or be used for the storage or stockpiling of any materials including sand, gravel or snow accumulated from snowplowing. There shall be no application of herbicides, pesticides or fertilizers in the buffer area. Where any government regulation establishes separation distances for a regulated activity, such distance shall be measured from the outer edge of the buffer area.

#### 4.4 Tree Protection.

Minimizing the removal of trees and preserving mature trees protects the environment by reducing stormwater runoff, maintaining habitat, promoting clean air and reducing heat island effects. All projects shall include a tree preservation plan that minimizes to the maximum extent practicable the removal of trees.

a. Projects clearing 0.5 acres or greater of undisturbed land. The site plan shall identify the location of all major vegetation including all trees larger than 6 inches dbh. In designing a project the [UAlbany Department] shall minimize the loss of trees by identifying the following for preservation:

- i. Trees that are important to the site or campus due to their size, age or rarity.
- ii. Trees located in environmentally sensitive areas such as wetlands.
- iii. Trees that offer visual screening or noise buffers to adjoining campus uses and neighboring properties.
- iv. Trees that shelter other trees from strong winds or are part of a continuous and mutually dependent canopy.

b. Protection of identified trees. Where a final design plan identifies trees for preservation, the following measures shall be undertaken:

- i. If development of the project will require the disturbance of tree root zones, a certified arborist or registered landscape architect shall prepare a detailed tree protection plan which protects root zones to the maximum extent practicable, prior to the commencement of site activities.
- ii. Contractors shall be directed to prevent damage to the trunks of trees identified for preservation. In extremely confined work zones, there shall be a protective barrier placed around the tree.
- iii. Where disturbance of roots is necessary, excavation within the root zone shall be done with extreme care using hand tools to prevent unnecessary damage to adjacent fibrous root structures. Roots should be pruned using clean vertical cuts that do not fray or strip the roots.
- iv. Trees that have had their roots pruned shall also have their canopy pruned in direct proportion to the amount of root trimming as provided in the tree protection plan.

v. Any trees which are removed during construction which were not previously identified in the design plan for removal shall be replaced with equivalent trees unless it is determined otherwise impractical.

c. Nothing contained herein shall preclude UAlbany from removing trees identified for preservation, which are diseased, severely damaged or otherwise present a threat to public health or safety.

## **5.0 Facility Design Standards**

All new facilities on the UAlbany campus shall incorporate the design standards of this section. When there is a substantial renovation of an existing facility, these design standards shall be incorporated to the maximum extent practicable.

### **5.1 Stormwater Conveyance Design**

#### **Minimum Action Level**

a. Concrete or paved gutters shall not be used in any stormwater conveyance measure unless site conditions significantly restrict the ability to use engineered vegetated swales or bioretention methods. Vegetated swales and bioretention measures shall be placed between roads and sidewalks, and shall be designed to include safe emergency overflow provisions for large storm events.

b. Whenever vegetated swales and bioretention measures are utilized, provision shall be made for access to the areas for maintenance of the swales and bioretention measures, including if necessary, agreements with adjacent property owners to allow equipment to access the stormwater measures for maintenance activities.

### **5.2 Building Roof Drains**

#### **Minimum Action Level**

a. All buildings shall be designed with rooftop stormwater conveyance systems that direct stormwater away from roads and parking lots and to vegetated areas with hydrologic soil groups A and B and soils with an infiltration capacity of more than 0.5 inches/hour.

#### **Best Management Action Level**

b. Rooftop runoff shall be diverted to: a series of rain barrels (or similar rainwater harvesting container); a grassed or vegetated area; a rain garden; a vegetated open channel; an infiltration trench, a pervious surface or a combination of the above or similar measures.

Model Community Action Level

- c. The design of all new buildings and covered structures shall consider installation of Green Roofs. Design proposals shall include an analysis of the feasibility and cost effectiveness of a Green Roof alternative compared to a conventionally designed roof.
- d. Before committing to including a Green Roof on a building, a maintenance plan for the roof with provisions for periodic inspections shall be required to be on file with the [SWPP Officer] . Annual reports on the maintenance of the roof shall be provided to the [SWPP Officer]

5.3 Parking Ratios

Parking lots are a significant source of pollutants carried via stormwater. UAlbany has an extensive array of existing parking facilities. As the University undertakes the construction of new buildings and the renovation of existing facilities, it will need to assess the need and size of parking facilities and means of encouraging the use of public transit. All projects that may increase the need for parking or involve the alteration of an existing parking lot shall consider the standards in this section to determine the appropriate number of parking spaces and the design of the parking lots.

Minimum Action Level

Facilities should be designed with the following minimum number of parking spaces:

*[UAlbany should evaluate the parking ratios set forth below and adjust based upon actual experience at the campus]*

Dormitories, sororities and fraternities	1 space for every 3 persons
Faculty and administrative offices and services	1 space for every 300 sq. ft. of floor area
Classrooms/Lecture Halls	10 spaces for every classroom

5.4 Parking Lot Design

Minimum Action Level

- a. Parking spaces in excess of the minimum number of spaces required in Sec. 5.1 shall be constructed of pervious materials (permeable pavers, porous asphalt, porous concrete, grass-crete or gravel-crete, structural grass or similar materials). Consideration should be given to using pervious materials throughout the parking lot.
- b. In order to maximize the absorption capabilities of landscaped areas, utilities shall not be located within landscaped areas unless it can be demonstrated that avoidance

of landscaped areas will result practical difficulties that outweigh the benefits of locating utilities outside landscaped areas.

- c. All parking lots shall include a snow storage and disposal area that provides for snow melt over a vegetated area or into a green infrastructure area.
- d. Parking stalls shall have a maximum width of **9'** and a maximum length of **18'** with the exception of a limited number of stalls designated for buses, delivery trucks not using loading docks or designated shopping cart carrels.
- e. All parking lots shall be designed with angled parking and one-way traffic aisles. Two-way traffic aisles may be used upon a demonstration that they are necessary for safe and efficient traffic flow.

#### Best Management Action Level

- f. A minimum of **10%** and a maximum of **30%** of the parking spaces shall be designed and designated for compact cars and motorcycles. Compact car spaces shall be 8.5' wide and 16' feet deep. Motorcycle spaces shall be 4.5' wide and 10' deep. The location of these spaces shall be determined in a manner that facilitates their use by the intended vehicles and discourages their use by larger vehicles and signage included designating their appropriate use.

#### Model Community Action Level

- g. Parking lots larger than **1,200** sf, located on soils of hydrologic soil groups A, B, or C, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 20% of the parking lot area. Parking lots larger than **1,200** sf, located on soils of hydrologic soil group D, excluding the area reserved for vegetation and stormwater management, are required to be construction of impervious paving material over a minimum of 10% of the parking lot area.

### 5.5 Bicycle Parking

The University encourages bicycle use as an alternative to personal cars and the design of new and renovated facilities should include bicycle parking in proximity to the buildings as set forth in this section.

#### Minimum Action Level

- a. All new and renovated buildings shall include the following minimum bicycle parking spaces. In each instance, a minimum of two spaces shall be provided for each building.

*[UAlbany should evaluate the parking ratios set forth below and adjust based upon actual experience at the campus]*

Dormitories, sororities and fraternities persons	1 space for every 4
Faculty and administrative offices and services	1 space for every 5,000 sq. ft. of floor area
Classrooms/Lecture Halls	1 space for every 5,000 sq. ft. of floor area

b. Shower and locker facilities for bicyclists are required for all buildings. Lockers for clothing and other personal effects must be located in close proximity to showers and dressing areas to permit access to the locker areas by either gender. A minimum of one (1) clothes locker is required for each long-term bicycle parking space provided.

c. Location of Bicycle Parking Spaces

- (1) The bicycle parking area must be convenient to building entrances and street access, but may not interfere with normal pedestrian and vehicle traffic. For passive security purposes, the bike parking shall be well-lit and clearly visible to building occupants or clearly visible from the street.
- (2) Bicyclists must not be required to travel over stairs or other obstacles to access bicycle parking.
- (3) Short-term bicycle parking spaces must be located no more than **fifty (50)** feet from the principal building entrance and at the same grade as the sidewalk or an accessible route.
- (5) Long-term bicycle parking spaces must be located in a covered area that is easily accessible from the building entrances. The area must comply with one (1) of the following secure locations:
  - (i) Enclosed in a locked room.
  - (ii) Enclosed by a fence with a locked gate.
  - (iii) Located within view or within **one-hundred (100)** feet of an attendant or security guard.
  - (iv) Located in an area that is monitored by a security camera.
  - (v) Located in an area that is visible from employee work areas.

d. Design of Bicycle Parking Spaces

- (1) Required bicycle spaces must have a minimum dimension of two (2) feet in width by six (6) feet in length, with a minimum overhead vertical clearance of seven (7) feet. Each required bicycle parking space must be accessible without moving another bicycle. There must be an aisle at least (five) 5 feet wide between each row of bicycle parking to allow room for bicycle maneuvering.

- (2) The area devoted to bicycle parking must be surfaced as required for vehicle parking areas.
- (3) All long-term bicycle parking spaces must be covered, which can be achieved through use of an existing overhang or covered walkway, weatherproof outdoor bicycle lockers or an indoor storage area. Where bicycle parking is not located within a building or locker, the cover design must be of permanent construction, designed to protect bicycles from rainfall and with a minimum overhead vertical clearance of seven (7) feet.
- (4) Bicycle parking facilities must provide lockable enclosed lockers or racks, or similar structures, where the bicycle may be locked by the user. Racks must support the bicycle in a stable position. Structures that require a user-supplied locking device must be designed to easily allow a high-security U-shaped lock to secure the bike frame and one wheel while both wheels are still on the frame's brackets. All lockers and racks must be securely anchored to the ground or a structure to prevent the racks and lockers from being removed from the location.
- (5) If required bicycle parking facilities are not visible from the street or principal building entrance, signs must be posted indicating their location.

## 5.6 Sidewalks

### Minimum Action Level

- a. Sidewalks should have a maximum width of **5** feet unless high pedestrian volumes warrant a wider sidewalk.
- b. Sidewalks shall be graded such that they drain to the vegetated areas in front of buildings except in areas where the introduction of additional groundwater may be undesirable (building foundations, Hydrologic Soil Group C or D soils) or determined to be physically impracticable.

### Best Management Action Level

- c. Sidewalks constructed in accordance with the Americans with Disabilities Act (ADA) utilizing compliant porous pavement or an alternative porous surface are encouraged. Permeable sidewalks are strongly encouraged and may be required in lieu of impermeable sidewalks where soils are within Hydrologic Soil Group A or B, unless determined to be physically infeasible or waived due to verified safety concerns.

## Model Community Action Level

- d. Where practical and dependent upon pedestrian volume, sidewalks should only be placed on one side of the street with appropriate and safe pedestrian access provided to cross the street.
- e. A continuous permeable strip shall be located between the sidewalk and the curbside or edge of pavement. The permeable strip shall be **3 feet** wide or **1/3** the width of the sidewalk, whichever is greater and shall extend for the length of the sidewalk.
- f. Where the speed limit is **35 mph** or less, sidewalks must be constructed at street level to reduce the need for curbing that channelizes stormwater flow. In this circumstance, the sidewalk and edge of road shall be separated by a grass or planting strip with a minimum width of **4 feet** unless physical constraints preclude the design. Bollards and protective buffers/markings may be necessary to enhance pedestrian safety.

### 5.7 Curb Design

- a. Curbs along roads, parking lots and driveways shall include curb cuts to allow for diversion into green infrastructure practices, including stormwater planters, bioretention areas, tree pits and filter strips. Curb cuts should incorporate trash racks to prevent trash from entering the green infrastructure measures.
- b. Curb bump-outs with overflows to divert stormwater to a conventional stormwater system should be used in certain circumstances. Curb bump-outs are encouraged in lieu of catch basins where soils are within Hydrologic Soil Group A or B. Curb bump-outs may be placed in locations where catch basins would otherwise be constructed, and also serve as a traffic calming measure, and crosswalk length reduction. Curb bump-outs/curb extensions shall be designed in accordance with the New York State Stormwater Management Design Manual's requirements and guidance for Stormwater Planters.
- c. A curb bump-out is a vegetated curb extension that protrudes into the street either mid-block or at an intersection, creating a widening of the permeable strip between the sidewalk and the road or parking lot and a narrowing of the road. A bumpout is composed of a layer of stone that is topped with soil and plants. An inlet or curb-cut directs runoff into the bumpout structure where it can be stored, infiltrated, and taken up by the plants.

## 5.8 Landscaping and Permeable Strips

### Minimum Action Level

- (a) Landscaped areas in a project site plan, including in parking lots, shall be lowered and incorporate curb cuts or other diversion devices to divert stormwater to the landscaped areas as part of the stormwater management plan.
- (b) Permeable strips between sidewalks and roads and parking lots may be utilized as linear bioretention areas with curb cuts that divert the stormwater into the bioretention areas.
- (c) Trees to be planted in the permeable strip shall be planted either individually or in groups with a minimum separation distance of 30 feet on center and a maximum separation distance of 75 feet on center. Selected trees shall be noninvasive and have an upright branching pattern with a minimum vertical clearance of 8 feet to the lowest branches at the time of planting.
- (d) For non-planted permeable strips, the surface material shall be permeable based on NYSDOT material options applicable to the intended use. Design shall be such that the surface is not subject to frost heave conditions damaging the structure of the strip.
- (e) When backfill is proposed beyond the planting zone within the permeable strip, the backfill shall be structural soil with a depth no less than 24 inches from finished grade. The use of recycled concrete aggregate is not permitted as backfill.
- (f) For planted permeable strips turf grass is prohibited. Plants shall consist of: native meadow plantings, low herbaceous plants or no-mow ground covers, except that street trees within the planting strip shall have a 3 foot diameter/square mulch bed at their base.
- (g) Parking lots shall include **one** tree for every **1,200** feet of impervious parking area. Sufficient permeable or infiltration areas shall be provided around the expected radius of the mature tree to provide infiltration for the tree drip area. Existing mature trees shall not be included in the calculation for minimum trees except for areas where the existing mature tree canopy extends over impervious surfaces. Tree plantings may be designed as tree pits for stormwater treatment as provided in the latest version of the New York State Stormwater Management Design Manual.

### Best Management Action Level

- (h) For every impervious parking space, the project plan shall include at least **20** square feet of vegetated area within the parking lot. “Within the parking lot” means that at least **75%** of the perimeter of the landscaped area is located within the parking lot. Vegetated areas must include native non-invasive species and may be used for green infrastructure stormwater practices.

### Model Community Action Level

- (i) Surface parking lots with more than **two** rows of parking shall include a minimum of a **4'** wide landscaping islands between rows. These islands shall include curb cuts/wheel stops to allow entry of stormwater for treatment/infiltration. Landscaped areas shall utilize tree plantings, native vegetation, dry swales, stormwater planters, tree pits, or bioretention in center islands between parking rows. Stormwater management features must include the following:
1. Trees shall have dense canopy for rainfall interception, being round, oval, or v-shaped in form.
  2. Trees used shall be native and have proven observed salt tolerance.
  3. The area of the parking lot subject to vehicular traffic, that also corresponds to the mature tree's canopy area, shall incorporate structural measures to prevent soil compaction and root damage. This may be accomplished by use of a soil structure specifically designed to withstand observed traffic loading.
  4. Water must be allowed to infiltrate to the tree roots in an amount to ensure tree survival with minimal watering after the first year.
  5. Soil volume must be the amount required for the specific tree and intended function.
  6. Trees shall be selected based on several factors, including observed local healthy tree stands in similar applications, existing and anticipated soil compaction, existing pH, planned water availability, adjacent road maintenance (salt, sand, etc), presence of overhead utilities, availability of sunlight, percolation rate, soil's ability to circulate air, and soil type.
  7. Because paved parking lots and the cars associated with them can raise local temperatures by up to 20 degrees, trees selected near heat islands should be tolerant of these conditions.
  8. Trees shall be selected based on best landscape practices, using the guidance document "Recommended Urban Trees: Site Assessment and Tree Selection for Stress Tolerance", as published by the Urban Horticultural Institute, Department of Horticulture, Cornell University, Ithaca, NY or other industry-accepted standards.
- j. All parking lot runoff is required to flow through a planted area to cool runoff temperatures before entering the storm drain system.

## Gap 7 – Cul-de-Sac Design

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by limiting the amount of impervious areas, protecting natural resources and maintaining natural hydrological conditions. This law is intended to comply with the New York State Department of Environmental Conservation’s SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals. The redevelopment of properties that are part of a government approved plan for the clean-up of contaminated properties may be permitted to have larger areas of impervious surfaces where impermeable cover is a requirement of an approved remediation and redevelopment plan.

**2.0 Cul-de-Sac Design.** *Cul-de-Sacs may be proposed as part of residential subdivisions or commercial developments with internal roads. Cul-de-sacs have the potential for the greatest impact on stormwater quality compared to alternative road layouts and should be discouraged where it is practical to do so. Where they are determined to be necessary or desired, they should be designed to minimize width and amount of impervious materials to protect water quality. These sections may be used to amend local subdivision, zoning or road laws that govern the creation of new public or private roads.*

### Minimum Action Level

#### 2.1

a. Internal roads proposed for new residential subdivisions or commercial development shall be designed in a manner that facilitates the connection with existing roads or for connection with future roads on adjacent undeveloped or underdeveloped properties.

b. Where internal roads terminate in a dead end, cul-de-sacs shall only be used where other design options such as hammerheads, loop roads or boulevards are not reasonably practical or feasible. Where an applicant proposes a cul-de-sac in lieu of alternative designs, the application must include an engineering analysis demonstrating why the alternative designs are not reasonably practical or feasible.

c. The outside turning radius of cul-de-sac may not exceed **35** unless determined necessary and recommended by the Town Highway Superintendent. The maximum allowable outside turning radius is **45** feet and may only be approved if determined necessary for emergency vehicles and large school buses.

d. For all cul-de-sacs with an outside turning radius greater than **35** feet, all sidewalks adjacent to the cul-de-sac shall be constructed of pervious materials and all driveways connected to the cul-de-sac shall either be constructed of pervious materials or be a two-track design. Where a radius greater than **35** feet is required for emergency vehicles or school buses, the Planning Board may waive the requirement for pervious sidewalks and driveways. [**Note: There is really**

**no reason for this waiver provision as this is an excuse that can be utilized virtually any time – moreover, most subdivision laws have provisions for the PB to waive specific requirements where they deem it appropriate]**

e. The paved width of the road in the cul-de-sac shall be the equivalent of one-half of the design standards for a local town road excepting shoulder areas.

f. Internal roads shall be designed to accommodate snow storage areas within permeable medians and the centers of cul-de-sacs.

#### Best Management Action Level

**2.2** *In addition to the standards in Sec. 2.1, towns may include some or all of the following requirements to achieve a higher level of best management practices.*

a. Centers of cul-de-sacs shall be designed to promote stormwater infiltration and should not be curbed or raised in a manner that prevents stormwater from draining into the center.

b. Unless there are no reasonably practical or feasible alternatives, utilities shall not be located in the center of cul-de-sacs so that such areas can maximize green space.

c. Centers of cul-de-sacs shall consist of pervious surfaces including: pervious pavement, porous pavers, grass, structural grass to accommodate emergency vehicles and trucks, low-growing bioretention areas, rain gardens, trees or other permeable stormwater treatment measure approved as part of a stormwater pollution prevention plan. Stormwater control measures in the centers of cul-de-sacs must be located on underlying soils with an infiltration rate of at least 0.5 inches/hour at a depth as required by the current version of the New York State Stormwater Management Design Manual.

d. If a loop road or boulevard is used the medians of such roads shall be maintained with native vegetation or green infrastructure stormwater management practices and may be used as passive or active recreational areas.

## Gap 8 – Sidewalks and Curbs

**1.0 PURPOSE AND OBJECTIVES.** *This language can be inserted in various codes (i.e. zoning, subdivision, design standards) where the codes contain a general provision noting the goals and objectives of the law.*

The standards and requirements of this law are intended to reduce the impact on the environment and protect water quality by requiring sidewalks and curbs to be designed to minimize impervious surfaces and maximize the infiltration of stormwater. This law is intended to comply with the New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems, (Permit No. GP-0-10-002). Applicants are encouraged to incorporate the principles of Low Impact Development, Better Site Design and other Green Infrastructure measures to meet these goals and meet the requirements of the most recent New York State Stormwater Management Design Manual. The redevelopment of properties that are part of a government approved plan for the clean-up of contaminated properties may be permitted to have larger areas of impervious surfaces where impermeable cover is a requirement of an approved remediation and redevelopment plan.

**2.0 Sidewalks and Curbs** *This language can be applied to subdivision, zoning and local road laws that provide design requirements for developments, roads and driveways.*

### 2.1 Sidewalk Design

#### Minimum Action Level

- a. Sidewalks should have a maximum width of **5** feet unless local conditions or high pedestrian volumes warrant a wider sidewalk.
- b. Sidewalks shall be graded such that they drain to the front yards except in areas where the introduction of additional groundwater may be undesirable (building foundations, Hydrologic Soil Group C or D soils) or determined to be physically impracticable.

#### Best Management Action Level

*In addition to the standards in Sec. 2.1.a. and 2.1.b, towns may include some or all of the following requirements to achieve a higher level of best management practices.*

- c. Sidewalks constructed in accordance with the Americans with Disabilities Act (ADA) utilizing compliant porous pavement or alternative porous surface are encouraged. Permeable sidewalks are strongly encouraged and may be required in lieu of impermeable sidewalks where soils are within Hydrologic Soil Group A or B, unless determined to be physically infeasible or waived due to verified safety concerns supported by engineering analysis.

## Model Community Action Level

*In addition to the standards in Sec. 2.1 and 2.2, municipalities may include some or all of the following requirements to achieve a higher level of best management practices.*

- d. Where practical and consistent with adjoining land uses, sidewalks should only be placed on one side of the street with appropriate and safe pedestrian access provided to cross the street.
- e. A continuous permeable strip shall be located between the sidewalk and the curbside or edge of pavement. The permeable strip shall be **3** feet wide or **1/3** the width of the sidewalk, whichever is greater and shall extend for the length of the sidewalk.
- f. Where the speed limit is **35 mph** or less, sidewalks must be constructed at street level to reduce the need for curbing that channelizes stormwater flow. In this circumstance, the sidewalk and edge of road shall be separated by a grass or planting strip with a minimum width of **4 feet** unless physical constraints preclude the design. Bollards and protective buffers/markings may be necessary to enhance pedestrian safety.

### **2.2 Curb Design**

- a. Curbs along roads, parking lots and driveways shall include curb cuts to allow for diversion into green infrastructure practices, including stormwater planters, bioretention areas, tree pits and filter strips. Curb cuts should incorporate trash racks to prevent trash from entering the green infrastructure measures.
- b. Curb bump-outs with overflows to divert stormwater to a conventional stormwater system may be used in certain circumstances. Curb bump-outs are encouraged in lieu of catch basins in residential districts where soils are within Hydrologic Soil Group A or B. Curb bump-outs may be placed in locations where catch basins would otherwise be constructed, and also serve as a traffic calming measure, and crosswalk length reduction. Curb bump-outs/curb extensions shall be designed in accordance with the New York State Stormwater Management Design Manual's requirements and guidance for Stormwater Planters.
- c. A curb bump-out is a vegetated curb extension that protrudes into the street either mid-block or at an intersection, creating a widening of the permeable strip between the sidewalk and the road or parking lot and a narrowing of the road. A bumpout is composed of a layer of stone that is topped with soil and plants. An inlet or curb-cut directs runoff into the bumpout structure where it can be stored, infiltrated, and taken up by the plants.

### **2.3 Design and Maintenance of Permeable Strips**

- a. Permeable strips between sidewalks and roads and parking lots may be utilized as linear bioretention areas with curb cuts that divert the stormwater into the bioretention areas. In addition to the requirements included in the section, the bioretention area must be

designed in accordance with the New York State Stormwater Design Manual. If the bioretention area is part of an approved SWPP and the area is not conveyed to the [municipality] a maintenance plan for the bioretention area must be included with the application.

- b. The [site plan or subdivision application] shall include a paving plan that shows all existing and proposed trees and their species in the area of the permeable strip.
- c. Trees to be planted in the permeable strip shall be planted either individually or in groups with a minimum separation distance of **30** feet on center and a maximum separation distance of **75** feet on center. Selected trees shall be noninvasive and have an upright branching pattern with a minimum vertical clearance of 8 feet to the lowest branches at the time of planting. These requirements may be modified to comply with the requirements of other regulatory agencies.
- d. For non-planted permeable strips, the surface material shall be permeable based on NYSDOT material options applicable to the intended use and neighborhood. Design shall be such that the surface is not subject to frost heave conditions damaging the structure of the strip.
- e. When backfill is proposed beyond the planting zone within the permeable strip, the backfill shall be structural soil with a depth no less than 24 inches from finished grade. The use of recycled concrete aggregate shall not be permitted as backfill.
- f. For planted permeable strips turf grass is prohibited. Plants shall consist of: native meadow plantings, low herbaceous plants or no-mow ground covers, except that street trees within the planting strip shall have a 3 foot diameter/square mulch bed at their base.
- g. Meadow or other grasses shall be mowed at least once per year except for:
  - 1. Sidewalk zones where the distance between the curb and the lot line is less than 9 feet wide.
  - 2. Areas within curb cuts.
  - 3. Areas with subgrade structures that could be adversely impacted by mowing.
  - 4. Historic sidewalks.
  - 5. Areas incorporating large rocks or rock outcroppings that make mowing impracticable.

**Appendix O**  
**Final Presentation**

# Green Infrastructure Model Local Law Project

OCTOBER 22, 2013

STORMWATER COALITION OF ALBANY COUNTY

BARTON & LOGUIDICE, PC (NADINE MEDINA,  
PE, CPESC, LEED AP)

&

YOUNG/SOMMER, LLC (JEFFREY S. BAKER, Esq.)

Made possible by a grant funded by: NYSDEC Environmental Protection Fund Stormwater Implementation Grant, Round 10 (2009)

# Stormwater Coalition of Albany County

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# Background

- Comprised of 11 municipalities, Albany Co, and University at Albany
- Provides mutual support and assistance in implementation of the NYSDEC MS4 Permit requirements
- Formed in 2008 by local governments in Albany County
- Membership is open to municipalities and public institutions that are regulated by the CWA and other municipalities
- Independent, self-funded organization (augmented by grant money)
- Albany County is both Member and host of the Coalition

# Structure

- Governed by Board of Directors
- Board consists of one representative from each participating MS4
- Members are co-signatories of the formal inter-municipal agreement establishing and organizing the Coalition
- Agreement outlines the organizational structure, conditions and terms of membership, and applicable fee schedules
- For the purpose of implementing the grant, the Coalition established the Green Infrastructure Local Law Advisory Committee (GILLAC)
  - GILLAC consists of staff from coalition member communities responsible for planning, code enforcement and land-use law

# Members

- City of Albany
- Albany County
- Town of Bethlehem
- City of Cohoes
- Town of Colonie
- Village of Colonie
- Village of Green Island
- Town of Guilderland
- Village of Menands
- Town of New Scotland
- Village of Voorheesville
- City of Watervliet
- University at Albany - State University of New York

# MS4 Permit Requirements

- Implement components of a Stormwater Management Program, addressing:
  - Public Education and Outreach
  - Public Involvement and Participation
  - Detection and Elimination of Illicit Stormwater Discharges
  - Construction Site Stormwater Runoff Control
  - Post- Construction Stormwater Management
  - Pollution Prevention/Good Housekeeping for Municipal Operations
- Traditional MS4s: "...encouraged to review, and revise where appropriate, local codes and laws that preclude GI..."
- Alb Co & University at Albany: "...must incorporate principles of Low Impact Development (LID), Better Site Design (BSD) and other Green Infrastructure Practices to the MEP."; "...must consider natural resource protection, impervious area reduction, maintaining natural hydrologic condition in developments, buffers or set back distances for protection of environmentally sensitive areas such as streams, wetlands, and erodible soils in the development of environmental plans."

# Project Background & Purpose

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# Funding

- In November 2009 the Stormwater Coalition of Albany County applied for a NYSDEC Environmental Protection Fund Water Quality Improvement Project grant
  - Purpose: fund storm system mapping, educate land use decision makers about green infrastructure, and develop Model Green Infrastructure Local Law(s)
- In December 2010 the Coalition was awarded the grant
- Mid-April 2011 the work plan was submitted to and approved by NYSDEC

# Grant Action Steps

- Step 1: Educate land use decision makers, Town and/or Town Designated Engineers in green infrastructure techniques
  - Conducted a survey of all land use decision makers each Coalition MS4 to identify knowledge gaps
  - From that, training workshops targeting the identified priority concepts were developed and conducted
- Step 2: Inventory existing Comprehensive Plans and Local Laws for Green Infrastructure strategies and Smart Growth principles
- Step 3: Research other green infrastructure local laws
  - Based on the results, as well as input from Coalition members, develop a Model Local Law or set of Model Laws beneficial to the unique needs of Coalition members
- Step 4: Present these model local law(s) to the land use decision makers associated with each Coalition member municipality
  - Ask members to consider adopting the green infrastructure model law(s)
  - Solicit feedback regarding their intentions, both immediate and long term

# GI Local Laws – Project Team

- By mid-2011 a Request for Proposals was developed and approved by GILLAC
- By January, 2012 the consulting firm, Barton and Loguidice, with legal support from Young/Sommer services, was selected
- Once hired, the Team most directly involved with all aspects of the project took shape
  - Nadine Medina, PE from Barton & Loguidice, PC; Jeff Baker, Esq from Young/Sommer; and the two GILLAC Co-Chairs, Nancy Heinzen, Stormwater Coalition Program Coordinator and Leslie Lombardo, Senior Planner, Albany County Planning Board
- The GILLAC Co-Chairs served as a liaison to the remaining Coalition members

# Project Methodology

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# Scorecard Development

- Coalition members developed the Scorecard, drawing from various resources
  - -Center for Watershed Protection Code and Ordinance Worksheet
  - -Code and Ordinance Worksheet for Development Rules in NYS
  - -USEPA Managing Wet Weather With GI – Water Quality Scorecard
- Purpose was to evaluate existing municipal zoning ordinances, comprehensive plans, review procedures, and local laws against recognized green infrastructure practices
- Resulted in an overall “Green Score”
- In addition to overall scores, the total score was broken out into sub-categories for:
  - Reduction of Impervious Cover
  - Preservation of Natural Areas and Conservation Design
  - Design Elements for Stormwater Management
  - Promotion of Efficient, Compact Development Patterns and Infill
- Completed scorecards were provided to the Co-Chairs of GILLAC, and were reviewed corrected, as needed

# Original Scorecard

- MS4s were provided with a scorecard
- Were asked to identify all development rules that apply in municipality
- Also asked to identify the local, state, and federal authorities that administer or enforce development rules
- Background documents (existing code language, etc) were gathered and copies provided
- The scorecard was completed and scored by each MS4

## Introduction

### **Stormwater Coalition Scorecard - Inventory of Municipal Codes for Green Infrastructure Practices (September 2011)**

The Stormwater Coalition Scorecard allows an in-depth review of the standards, local laws, ordinances, and codes (i.e., the development rules) that shape how development occurs in your municipality. You are guided through a systematic comparison of your local development rules against recognized green infrastructure practices. Institutional frameworks, regulatory structures and incentive programs are included in this review. A combination of documents were used including the Center for Watershed Protection Code and Ordinance Worksheet; the Code and Ordinance Worksheet for Development Rules in New York State (a document developed by NYS Department of Environmental Conservation Hudson River Estuary Program, NYS Water Resources Institute in Cooperation with the Center For Watershed Protection); and the U.S. EPA Managing Wet Weather with Green Infrastructure Municipal Handbook-Water Quality Scorecard. The scorecard consists of a series of questions organized into four categories. Points are assigned based on how well the current development rules agree with suggested development principles that support green infrastructure. Green infrastructure practices are included within the NYSDEC MS4 Permit and the NYSDEC Stormwater Management Design Manual (August, 2010).

#### **PREPARING TO COMPLETE THE COALITION SCORECARD**

Two tasks need to be performed before you begin the scorecard. First, you must identify all the development rules that apply in your municipality. Second, you must identify the local, state, and federal authorities that actually administer or enforce the development rules within your municipality. Both tasks require a large investment of time. The development process is usually shaped by a complex labyrinth of regulations, criteria, and authorities. A team approach may be helpful. You may wish to enlist the help of a local plan reviewer, land planner, land use attorney, or civil engineer. Their real-world experience with the development process is often very useful in completing the worksheet.

#### **Identify the Development Rules**

Gather the key documents that contain the development rules in your municipality. A list of potential documents to look for is provided in Table 1. Keep in mind that the information you may want on a particular development rule is not always found in code or regulation, and may be hidden in supporting design manuals, review checklists, guidance documents or construction specifications. In most cases, this will require an extensive search. Few communities include all of their rules in a single document. Be prepared to contact state, federal, or local agencies to obtain copies of the needed documents.

QUESTIONS	Yes	No	Score	Local Law ID reference: code name/section/page #	Clarification notes
<b>Category I: Reduction of Impervious Cover</b>					
<b>Street width and length:</b>					
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)? <i>If your answer is <b>between 18-22 feet</b>, give yourself 1 point</i>					
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)? <i>If your answer is YES, give yourself 1 point</i>					
3. Do street standards promote the most efficient street layouts that reduce overall street length? <i>If your answer is YES, give yourself 1 point</i>					
<b>Right-of-Way Width:</b>					
4. What is the minimum right of way (ROW) width for a residential street? <i>If your answer is <b>less than 55 feet</b>, give yourself 1 point</i>					
5. Does the code allow utilities to be placed under the paved section of the ROW? <i>If your answer is YES, give yourself 1 point</i>					
<b>Cul-de-Sacs:</b>					
6. What is the minimum radius allowed for cul-de-sacs? <i>If your answer is <b>less than 35 feet</b>, give yourself 1 point</i> <i>If your answer is <b>36 feet to 45 feet</b>, give yourself .5 point</i>					
7. Can a landscaped island be created within the cul-de-sac? <i>If your answer is YES, give yourself 1 point</i>					
8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments? <i>If your answer is YES, give yourself 1 point</i>					
<b>Subtotal</b>					

# Preliminary Scorecard Analysis

- The following outlines the detailed process Ms. Lombardo undertook to analyze the scorecards:
  - Checked, and corrected if necessary, the math on scorecard subtotals
  - Confirmed references to municipal code, where provided, and added clarification if needed
  - Added a column to each scorecard labeled “real score if no code”, and went back through scorecards to add or remove points based on MS4 notes such as “No code” or “Handled by review process of Planning Board or staff”, etc
  - Added clarification notes as needed to assist in consultant analysis

QUESTIONS	Yes	No	Score	Real score if no code	Local Law ID reference: code name/section/page #	Clarification notes
<b>Sidewalks and Curbs</b>						
9. What is the minimum sidewalk width allowed in the municipality? ___5___ feet If your answer is 4 feet or less, give yourself 1 point.		X			ADA requires 5 ft minimum	
10. Are sidewalks always required on both sides of residential streets? If your answer is NO, give yourself 1 point.		X	1			
11. Are sidewalks allowed to be sloped to drain to the front yard instead of the street? If your answer is YES, give yourself 1 point.	X		1	0	Allowed through plan review if site supports it	no code
12. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)? If your answer is YES, give yourself 1 point.	X		1	0		no code
<b>Driveways</b>						
13. What is the minimum driveway width specified in the municipality? ___NA___ feet If your answer is 9 feet or less (one lane) or 18 feet (two lanes), give yourself 1 point.	X					NA
14. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc)? If your answer is YES, give yourself 1 point.	X		1	0	Allowed through plan review	We have a 13 lot residential subdivision which is a case study for porous pavement driveways and road not in code
15. Can a "two track" design be used at single family driveways? (grass in between) If your answer is YES, give yourself 1 point.	X		1	0		*
16. Are shared driveways permitted in residential developments? If your answer is YES, give yourself 1 point.	X		1	0		*
17. Are driveways allowed to be sloped to drain to yard areas instead of the street? If your answer is YES, give yourself 1 point.	X		1	0		All added impervious area are required to be treated onsite if regional controls are not in place not in code?
<b>Subtotal</b>			7	1		no code, no points

# Final Scorecard Analysis

- Revised and original scores were provided to the Consultant Team for analysis
- Consultant Team discovered there were instances in which responses were inconsistent between MS4s
- Some questions did not apply to all MS4s
- Project Team determined that some of the scorecard questions could best be addressed by additional MS4 education rather than provisions in a local law
- Various approaches were analyzed by the Project Team
- Scores were adjusted a final time to ensure that questions such as these were scored consistently

QUESTIONS	C/Alb	C/Coh	C/Wvliet	V/Col	V/Gl	V/Men	V/Voor	T/Beth	T/Col	T/New S	SUNY A	Alb Cty	# NA	# Munis	# Possible	# Attained	% who attained
<b>Category I: Reduction of Impervious Cover</b>	<b>Corrected Scores</b>																
<b>Street width and length:</b>																	
1. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT)?	0	0	0	0	0	0	0	0	0	0	0	1	0	12	12	1	8%
2. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?	0	0	NA	0	0	0	0	1	0	0	NA	NA	3	12	9	1	11%
3. Do street standards promote the most efficient street layouts that reduce overall street length?	0	0	1	0	1	0	0	0	0	0	NA	NA	2	12	10	2	20%
<b>Right-of-Way Width:</b>	<b>Corrected Scores</b>																
4. What is the minimum right of way (ROW) width for a residential street?	0	0	0	1	1	1	1	1	1	0	0	1	0	12	12	7	58%
5. Does the code allow utilities to be placed under the paved section of the ROW?	0	0	1	1	1	1	0	1	1	0	1	1	0	12	12	8	67%
<b>Cul-de-Sacs:</b>	<b>Corrected Scores</b>																
6. What is the minimum radius allowed for cul-de-sacs?	0	0	NA	0	0	0	0	0.5	0	0	0	NA	2	12	10	1	10%
7. Can a landscaped island be created within the cul-de-sac?	0	0.5	NA	0	0	1	0	1	1	0	1	NA	2	12	10	5	50%
8. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments?	0	0	NA	0	0	0	0	0	0	1	NA	NA	3	12	9	1	11%
<b>Sidewalks and Curbs</b>	<b>Corrected Scores</b>																
9. What is the minimum sidewalk width allowed in the municipality?	0	0	0	0	1	0	0	0	0	0	0	0	0	12	12	1	8%
10. Are sidewalks always required on both sides of residential streets?	1	0	0	1	0	0	1	1	1	0	1	1	0	12	12	7	58%
11. Are sidewalks allowed to be sloped to drain to the front yard instead of the street?	1	0	0	0	0	0	0	1	0	0	1	1	0	12	12	4	33%
12. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)?	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	0	0%
<b>Driveways</b>	<b>Corrected Scores</b>																
13. What is the minimum driveway width specified in the municipality?	0	0	0	1	0	0	0	1	NA	0	NA	0	2	12	10	2	20%
14. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc)?	0	0	0	0	0	0	0	0	0	0	NA	NA	2	12	10	0	0%
15. Can a "two track" design be used at single family driveways? (grass in between)	0	0	0	0	0	0	0	0	0	0	NA	NA	2	12	10	0	0%
16. Are shared driveways permitted in residential developments?	0	0	0	0	0	0	0	1	0	0	NA	1	1	12	11	2	18%
17. Are driveways allowed to be sloped to drain to yard areas instead of the street?	0	0	0	1	0	0	0	0	0	0	NA	1	1	12	11	2	18%
<b>Parking Ratios</b>	<b>Corrected Scores</b>																
18. What is the minimum parking ratio for a professional office building (per 1000 ft2 of gross floor area)?	0	0	0	0	0	0	0	0	0	0	0	NA	1	12	11	0	0%
19. What is the minimum required parking ratio for shopping centers (per 1,000 ft2 gross floor area)?	0	1	0	0	1	0	0	1	1	0	NA	NA	2	12	10	4	40%
20. What is the minimum required parking ratio for single family homes (per home)?	1	1	1	1	0	1	1	1	1	1	NA	NA	2	12	10	9	90%
_____ spaces																	
If your answer is <b>less than or equal to 2.0 spaces</b> , give yourself 1 point																	
21. Are your parking requirements set at maximum or median (rather than minimum) requirements?	<b>QUESTIONS REMOVED FROM ANALYSIS - BEST ADDRESSED THROUGH EDUCATION RATHER THAN PROJECT SCOPE</b>													12			
If your answer is <b>YES</b> , give yourself 1 point														12			

# Gap Analysis

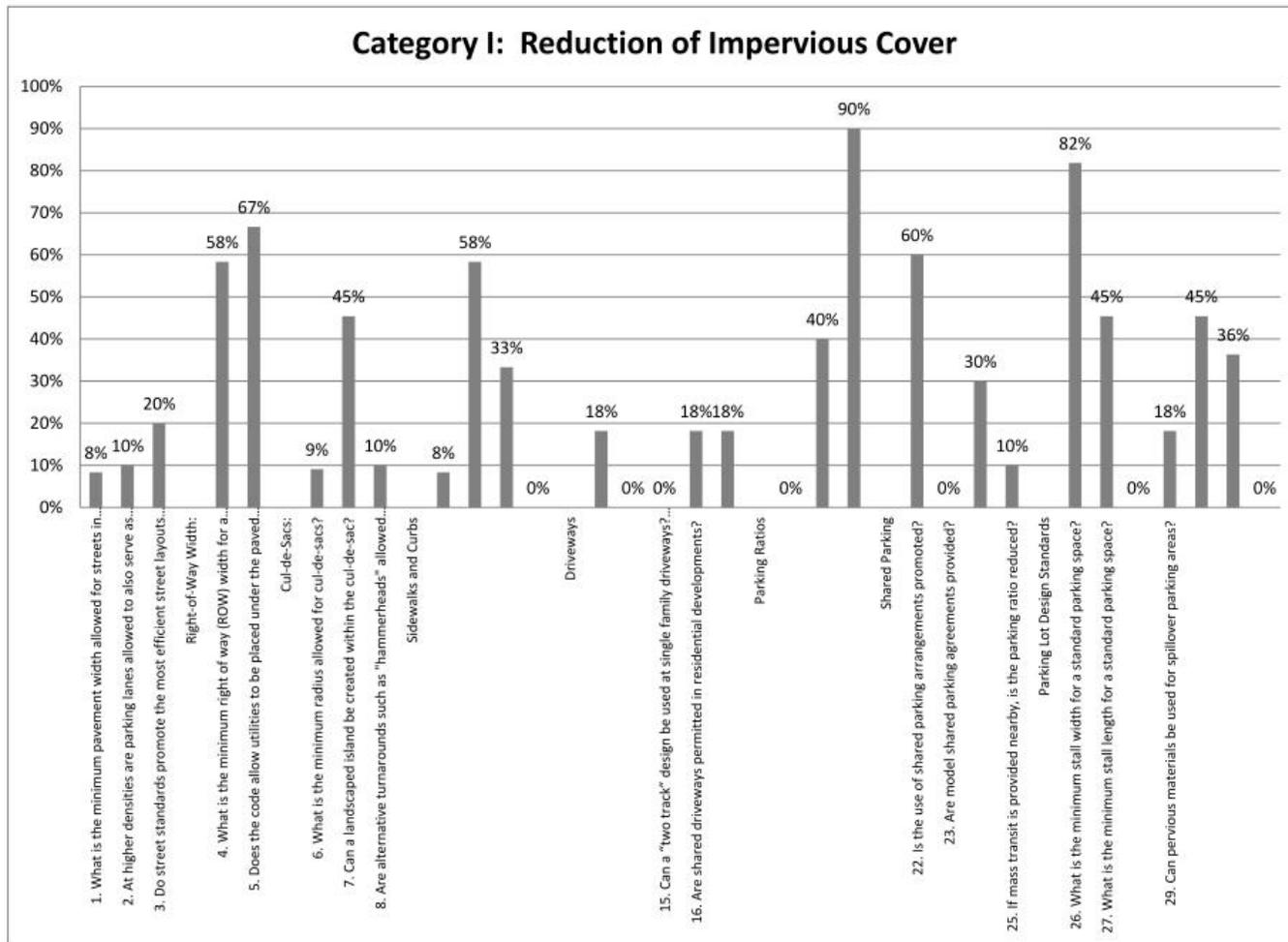
- The Project Team did not believe that comparing all scores to one another would provide a consistent review approach
- The Project Team decided to provide an overall Gap Analysis based on numeric percentages, as in the percent responding yes to using a green infrastructure practice
- Analysis incorporated all MS4s as well as separate Gap Analysis for Cities, Towns, Villages, and University at Albany & Albany County
- Analysis indicated that questions that were not applicable to University at Albany and Albany County (cul-de-sacs, etc) were artificially lowering overall Coalition scores
- Separate gap analysis were prepared

# Category 1

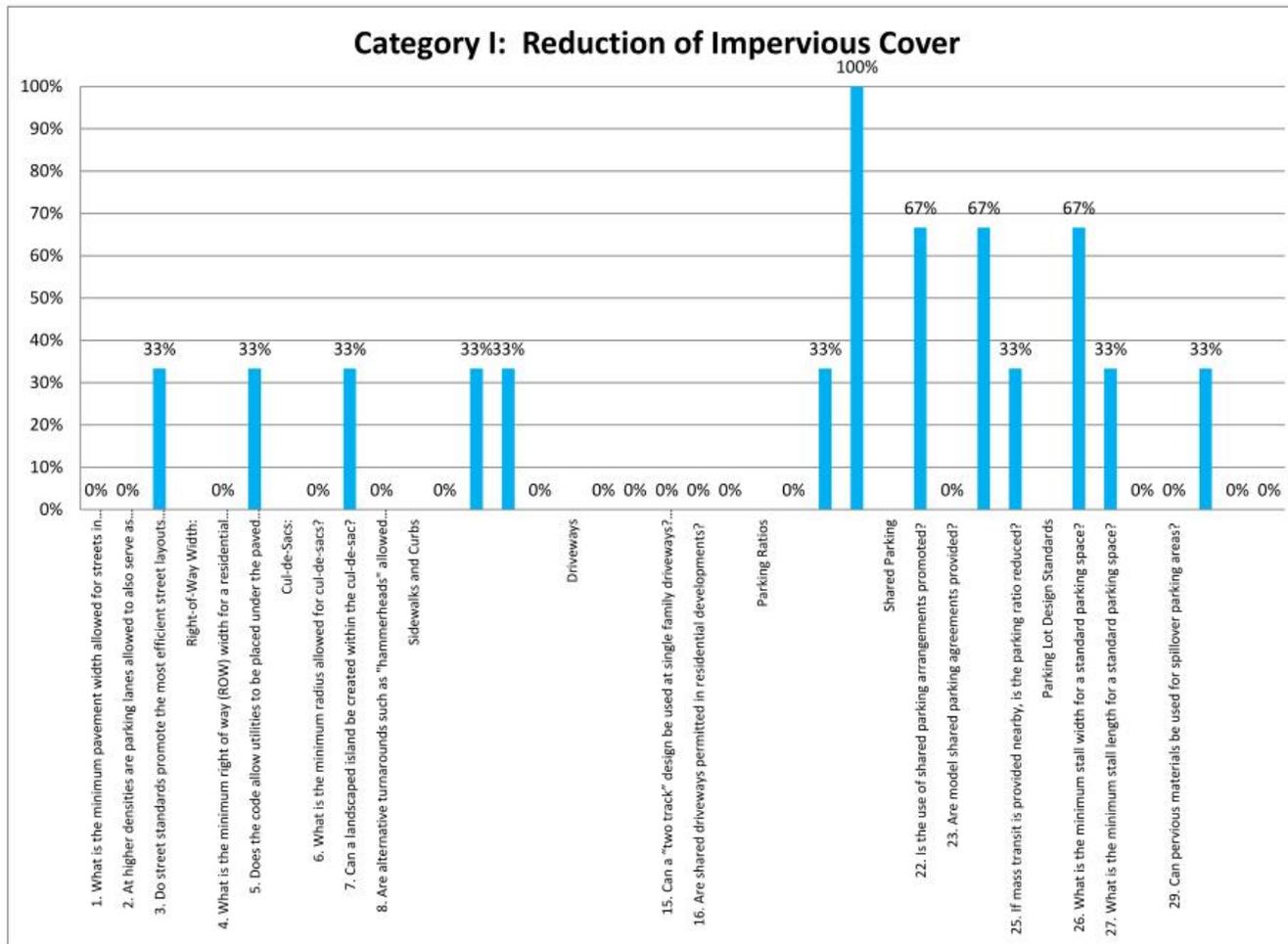
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Reduction of Impervious Cover

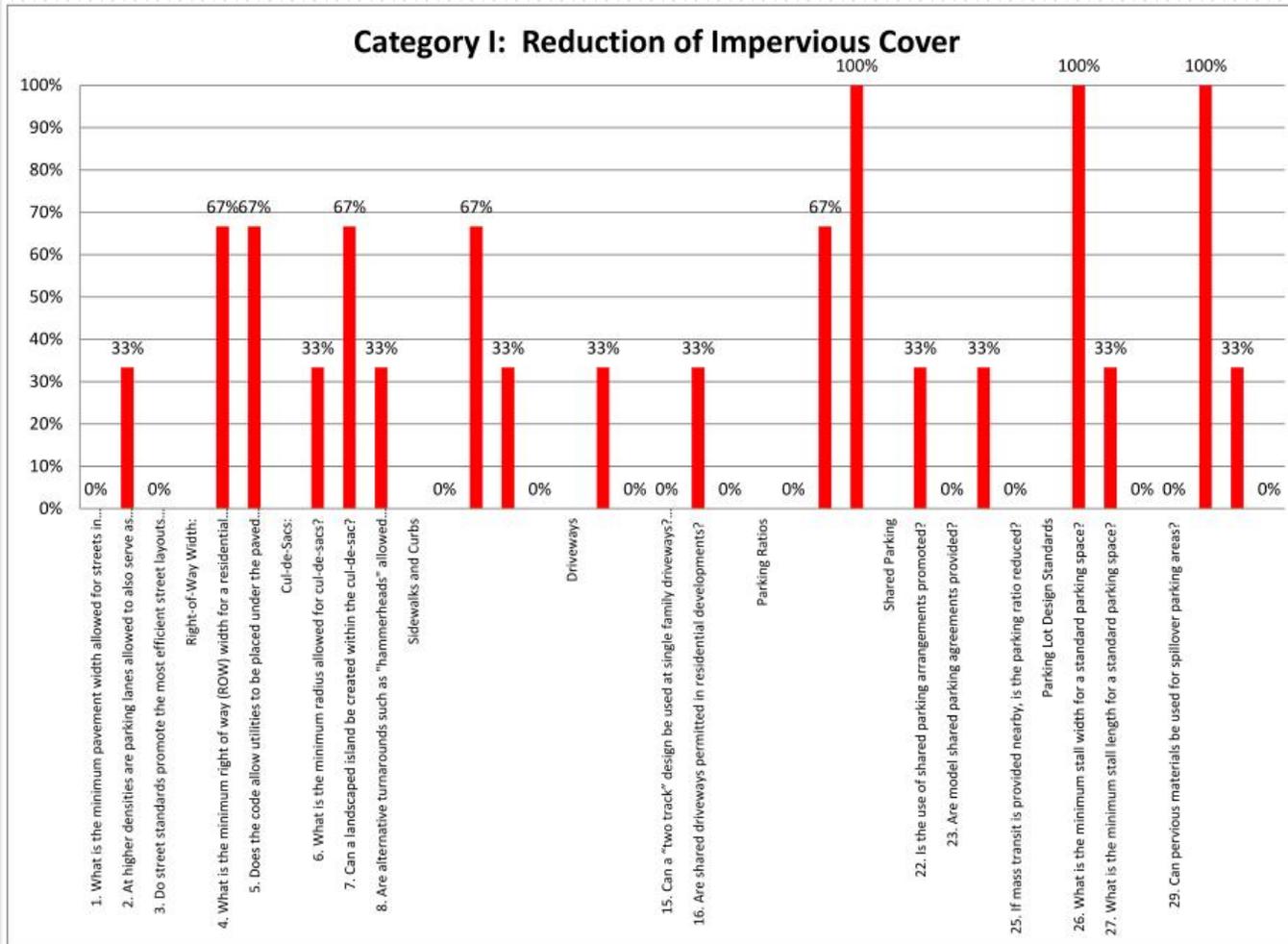
# All MS4 Gap Analysis



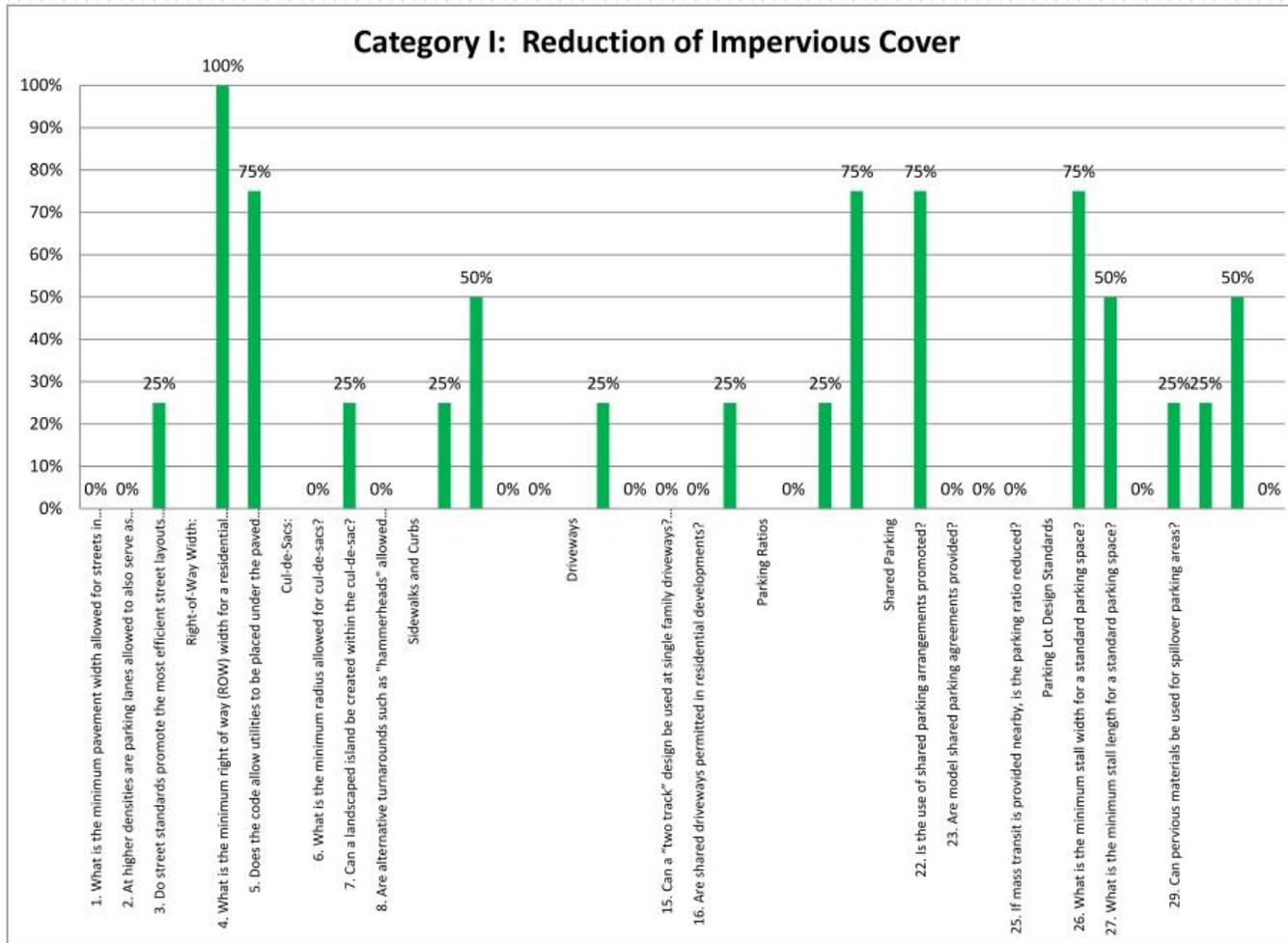
# Cities Gap Analysis



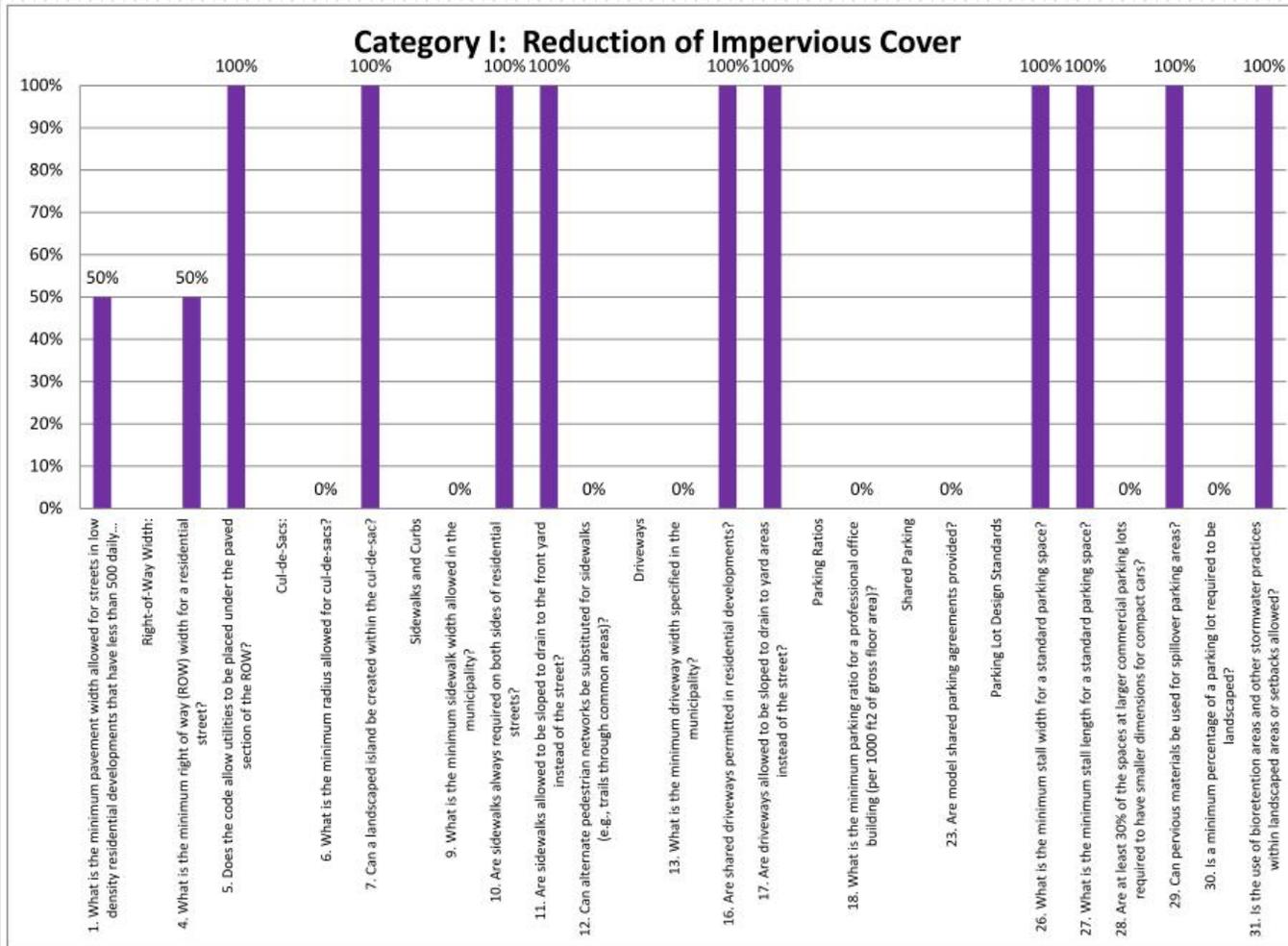
# Towns Gap Analysis



# Villages Gap Analysis



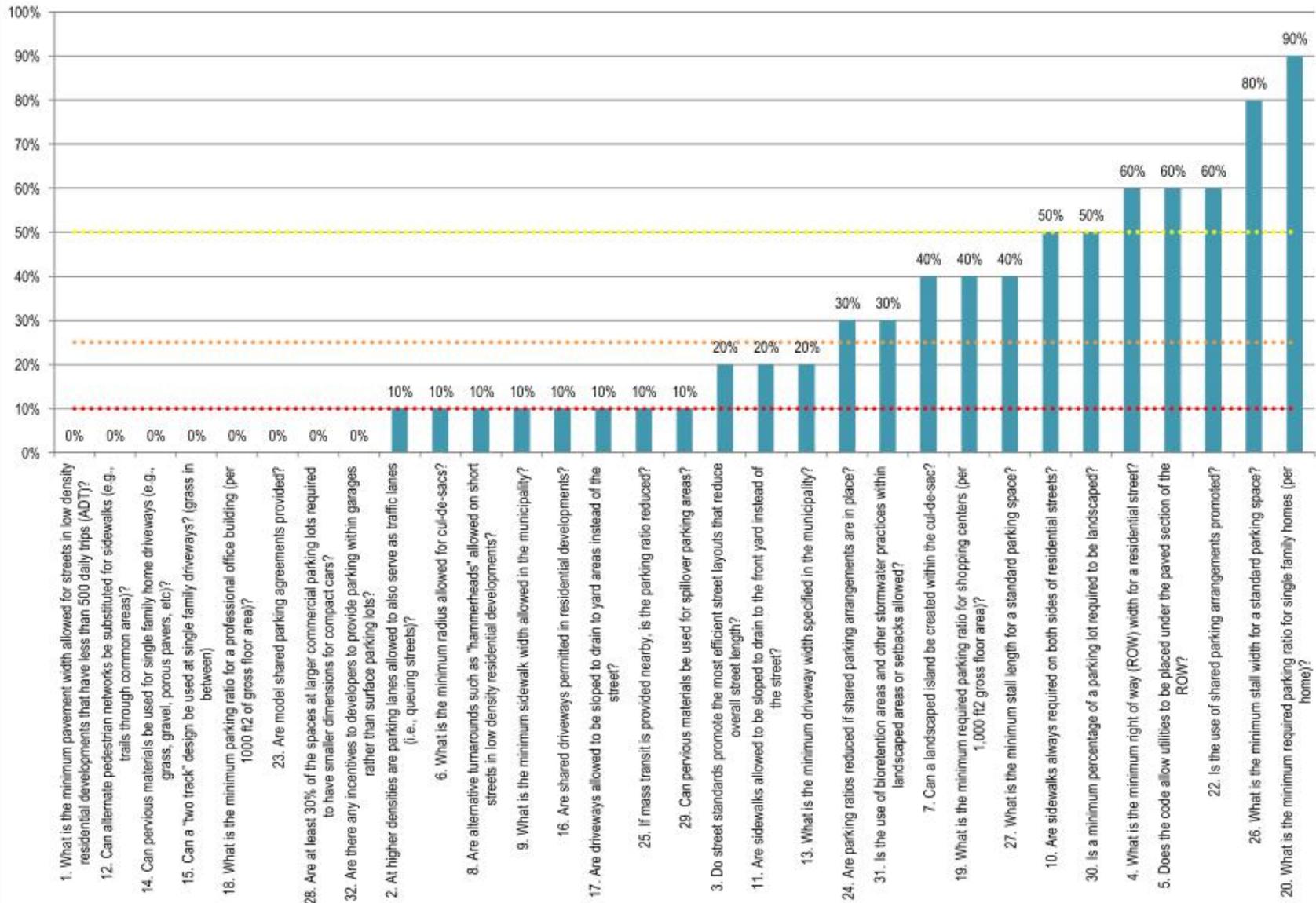
# University at Albany/Albany County Gap Analysis



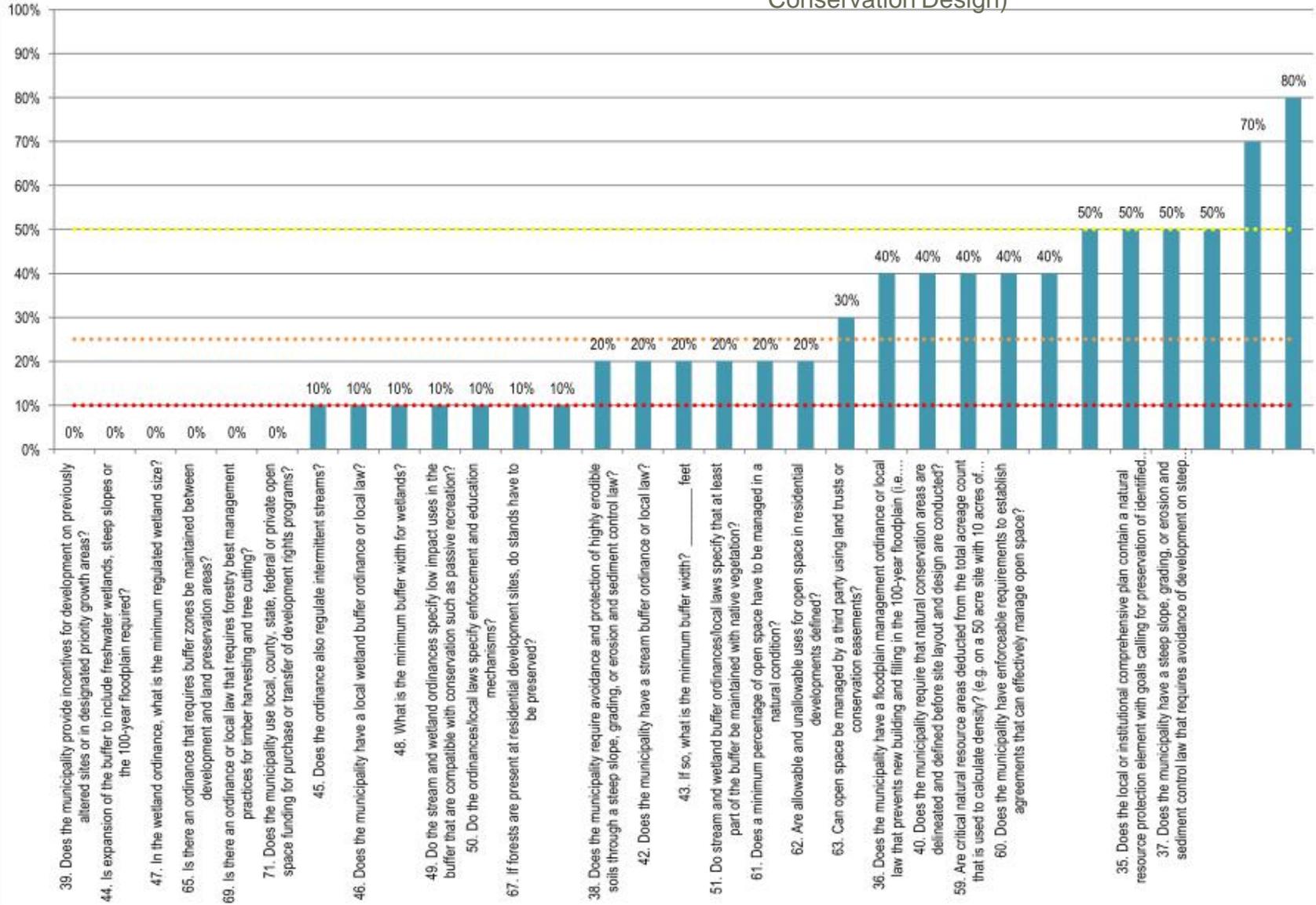
# Gap Identification & Selection

- The Consultant Team created “Sorted Final Gap Identification” spreadsheets
  - Visually presents the percentage of MS4s who answered positively to each question on the scorecard; focusing on MS4s with land-use control (traditional)
  - Bar charts that graph scorecard questions against the percentage of positive results
  - Three additional thresholds (lines) of 10%, 25%, and 50% were added to the graph to illustrate % of positive answers
  - Questions addressed by a majority (over 50%) were determined to not be priority gaps for the Coalition

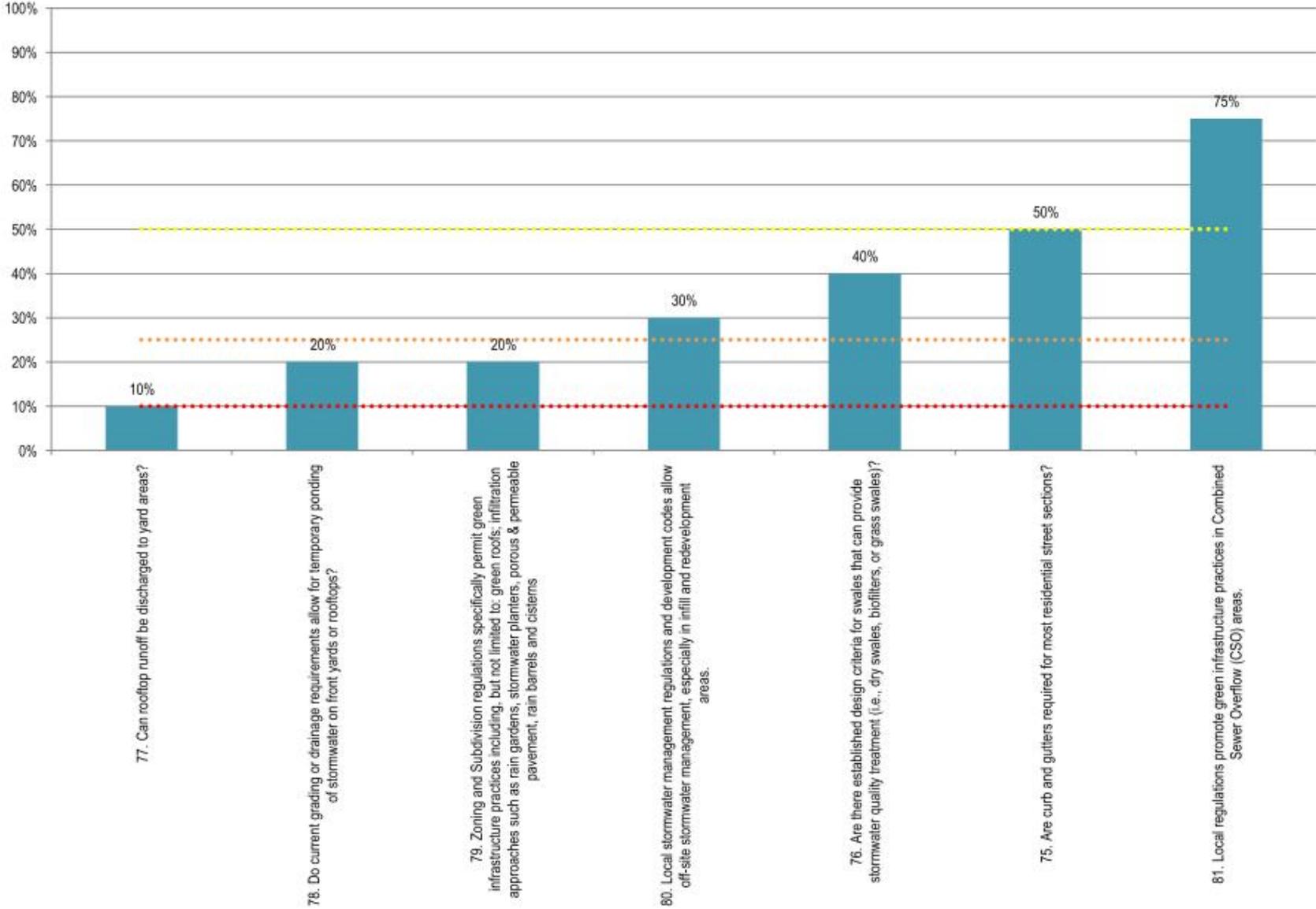
## Cat 1 Traditionals (Reduction of Impervious Cover)



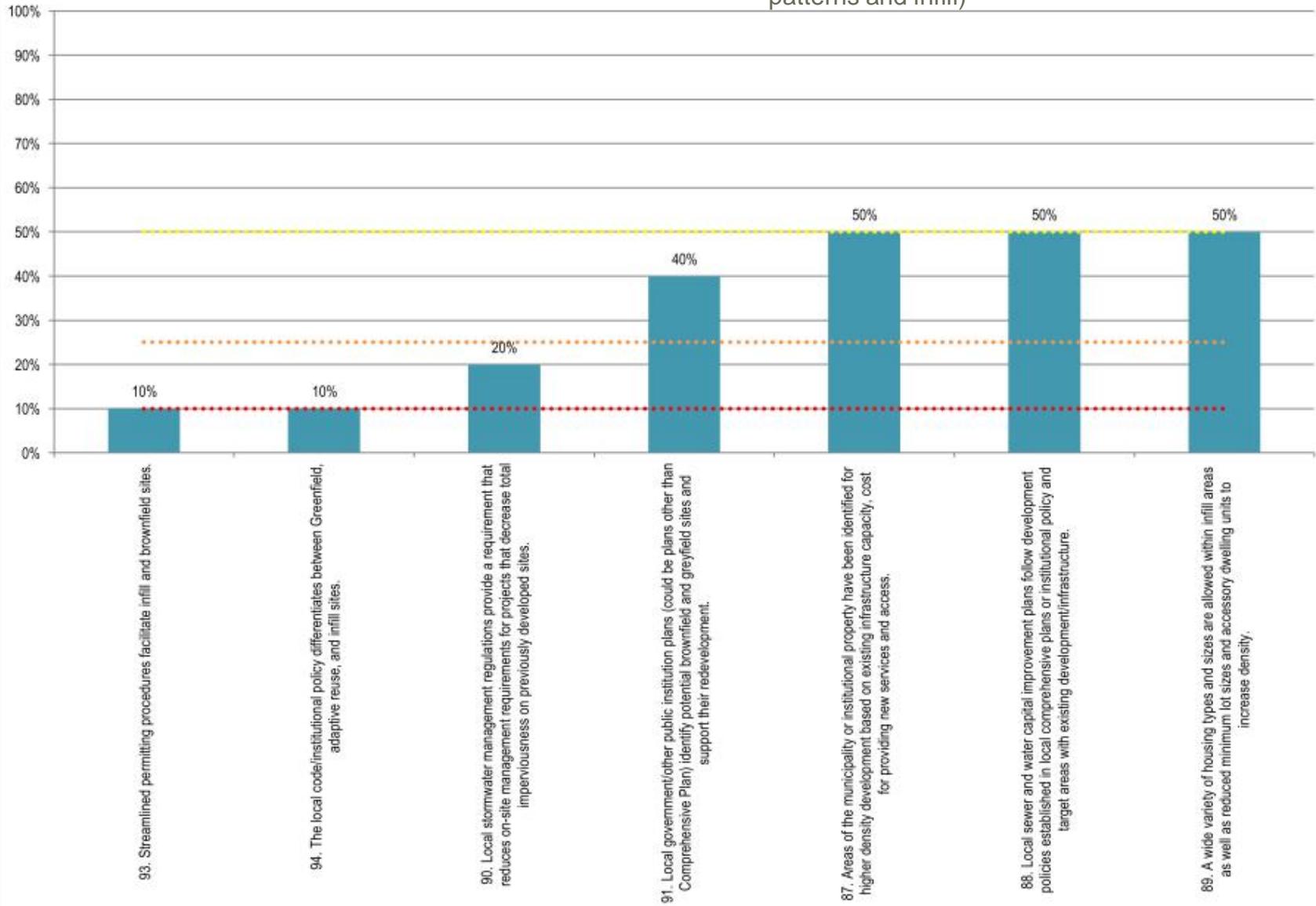
## Cat 2 Traditional (Preservation of Natural Features and Conservation Design)



**Cat 3 Traditional** (Design Elements for Stormwater Management)



**Cat 4 Traditional** (Promotion of efficient, compact development patterns and infill)



# Gap Selection

- Across all categories, Project Team came up with 14 potential gaps, out of which only 8 would be addressed
- Comprised of groupings of similar scorecard questions
- GILLAC met to discuss the draft gap list, and to determine which of the 14 they would select for the project deliverables
- All members of GILLAC determined that they wanted to consider the gaps more thoroughly and discuss them with relevant MS4 staff before committing to a set of deliverables
- Each MS4 ranked the 14 gaps in order of 1-14 (1 being the gap they feel most relevant and 14 being the gap they feel least relevant) and provided this to the GILLAC Chairs
- GILLAC Co-Chairs produced a summary ranking of all gaps which they then provided to the Consultant Team
- Top 8 became the selected gaps



# Selected Gaps, in order of ranking

- Gap 1: Parking (Parking Ratios, Parking Lot Design, Shared Parking)
- Gap 2: Rooftop Runoff
- Gap 3: Vegetated Open Channels
- Gap 4: Locating Sites in Less Sensitive Areas & Clearing and Grading
- Gap 5: Open Space Management
- Gap 6: Model Local Law Language/Guidance for Albany County and University at Albany
- Gap 7: Cul-de-Sacs
- Gap 8: Sidewalks and Curbs

# Local Law Language/Guidance for Albany County & University at Albany

- Ranked as number 6 in the final gap ranking process
- To better understand their unique needs, the Project Team prepared a questionnaire for each of the two MS4s
- Upon review of those questionnaires, the Consultant team proposed the following:
  - Albany County: The Consultant Team proposed to prepare a local law that clarifies the relationships between the County Departments when it comes to facility planning, and provides clarity for complying with the MS4 requirements
  - University at Albany: Substantively similar to the County document. References the departments under which this guidance will be relevant (derived from the list provided by SUNY). This document will also reference the SPDES General Permit requirements to enhance the backbone of the document.
- These documents reference and include the other gaps, as deemed relevant by Albany County and University at Albany

# Gap Research

- B&L began to research relevant guidance, laws, and design standards throughout the state, as well as to document those learned or developed through industry experience
- GILLAC Chairs provided documents they felt were useful and relevant to the process as well

# Research Resources

- Cleveland Heights, OH Parking Code
- City of Boston Parking Ratio Guidelines for their ZBA
- New York State Stormwater Management Design Manual
- Alexandria, VA Shared Parking Fact Sheet
- LEED for Neighborhood Development
- Victoria, BC, Canada Shared Parking Code
- Stormwater Center Open Space Model Ordinance
- Zoning Ordinance, Calvert County, MD
- Land Preservation District Model Zoning, Montgomery County, PA
- Zoning Ordinance: Open Space Community, Hamburg Township, MI
- New York City Green Council Task Force proposed laws

# B&L Gap Language Reviewers

- The panel of professionals included the following designations and certifications: CPESC, CPSWQ, CESSWI, LEED AP, PE, RLA, and AICP
  - Environmental Scientist
  - Civil Engineer
  - Environmental Engineer
  - Highway Engineer
  - Landscape Architect
  - Land Use Planners
  - Town Designated Engineers
- Draft gap language was distributed to the GILLAC Chairs

# GILLAC Gap Review

- GILLAC members were asked to review the draft gap language
- Comments and questions were provided verbally during a series of two meetings
- Comments were provided to the Consultant Team
- Consultant Team was then tasked with reviewing and addressing the comments
- Consultant Team addressed those that were feasible within the scope and not best address by clarifying the project intent
- Consultant Team provided feedback to GILLAC

# Drafting of Laws

- After addressing GILLAC's comments, Consultant Team organized the language to ensure that the tiered approach
- Included separating the various requirements identified in each local law into one of three categories
  - Minimum Action Level: Majority of MS4 communities incorporated, either by regulation or by unwritten policy of a local board, the topic area within the gap category.
  - Best Management Action Level: Language was included or considered in the review process by a few MS4s with newer code language. In this category, very few municipalities identified equivalent language in their policies and, in several cases, the existing language could better serve green infrastructure if strengthened or added to. This level assumes that MS4s have adopted the Minimum Action Level language.
  - Model Community Action Level: Language was regarding topics that are relatively new to be incorporated to municipal code based on new information in engineering design for stormwater or more recent land use planning ideas, or if it represents ideas that have traditionally been considered incentives within zoning ordinance language. This level assumes that MS4s have adopted each of the preceding levels.

# Drafting of Laws

- Several numbers (dimensions, ratios, percentages, etc) within the local law language are bolded
  - Indicates that the number represents the gold standard
  - Can be modified to best suit the MS4
- Local law language represents a collection of codes that can be pulled from as deemed applicable, or used as a whole
- Sections can be relaxed or made more stringent, and not all sections are necessary to use if not pertinent
- Each section represents a stand-alone suggested practice/language, and MS4s can decide which to implement

# Implementation

- Coalition members had the opportunity to take the language back to their governing boards
- A decision matrix was provided to each Coalition member to solicit feedback as to whether they intended to adopt the local law language
- Separate matrix for Albany County and University at Albany
- Results of the decision matrix will be included in final report

# Albany Co & University at Albany

Stormwater Coalition of Albany County  
 NYSDEC Grant Contract C304384 Round 10

Decision Matrix Form: Green Infrastructure Model Local Laws  
 Albany County and University at Albany

Gap 6 UAlbany

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level					No Action Level		
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
1.0 Purpose and Objectives																				
2.0 Applicability																				
3.0 Administration																				
4.0 Avoiding Locating Projects in Sensitive Areas																				

# Traditional MS4s (T/V/C)

Stormwater Coalition of Albany County  
 NYSDEC Grant Contract C304384 Round 10

Decision Matrix Form: Green Infrastructure Model Local Laws  
 Towns, Villages, Cities

Gap 1 Parking Lot Design

Name of MS4:	Decision: Will begin the process of including this in our local code. Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
Gap 1 Parking Lot Design	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
1.0 Purpose and Objectives																				
2.0 Parking Ratios.																				
2.1 Determination of Required Off-Street Parking.																				
Schedule A Required Off Street Parking Spaces																				

# QUESTIONS?

**Appendix P**  
**Implementation Questionnaires**

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 1 Parking Lot Design	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
1.0 Purpose and Objectives																			
2.0 Parking Ratios.																			
2.1 Determination of Required Off-Street Parking.																			
Schedule A Required Off Street Parking Spaces																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 1 Parking Lot Design	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
Notes to Schedule A:																			
2.2 Shared Parking.																			
2.3 Maximum Off-Street Parking.																			
2.4 Proximity to Mass Transit.																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 1 Parking Lot Design	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
2.5 Credits for On-Street Parking.																			
2.6 Reduction of Minimum Off-Street Parking for Certain Residential Uses.																			
2.7 Land Banked Parking.																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 1 Parking Lot Design	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
3.0 Parking Lot Design.																			
3.1 Bicycle Parking.																			
Schedule B Required Bicycle Parking Spaces																			
4.0 Landscaping.																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 2 Rooftop Runoff	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
1.0 Purpose and Objectives																			
2.0 Control of Rooftop Runoff																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 3 Vegetated Open Channels	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
1.0 Purpose and Objectives																			
2.0 Vegetated Open Channels																			
2.1 a. New Developments and Redevelopment of Previously Developed Properties																			
2.1 b. Improvement of (Town, Village, or City) Roads																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 3 Vegetated Open Channels	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
2.2 a. New Developments and Redevelopment of Previously Developed Properties																			
2.2 b. Improvement of (Town, Village, or City) Roads																			
2.3 In addition to the standards in Sections 2.1 and 2.2, municipalities may...																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																			
	Name/Title of Decision Makers: _____																			
Gap 4 Locating Sites in Sensitive Areas/Clearing and Grading	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
1.0 Purpose and Objectives																				
2.0 Avoiding Sensitive Areas																				
2.1 Site Plan Contents.																				
2.2 Site Plan Review Standards.																				

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 4 Locating Sites in Sensitive Areas/Clearing and Grading	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
2.3 Site Plan Review Standards.																			
2.4 Natural Resource Buffers.																			
2.5 Tree Protection.																			

<b>Name of MS4:</b>	<b>Decision: Will begin the process of including this in our local code.</b>					
	<b>Name/Title of Decision Makers:</b> _____					
	<b>No Action Level</b>					
<b>Gap 5 Open Space Management/Cluster Subdivisions</b>	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments
<b>Introduction (Italics)</b>						
<b>1.0 Authority</b>						
<b>2.0 Purpose</b>						
<b>3.0 Definitions</b>						

Name of MS4:	Decision: Will begin the process of including this in our local code.					
	Name/Title of Decision Makers: _____					
No Action Level						
Gap 5 Open Space Management/Cluster Subdivisions	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments
4.0 Eligibility for Cluster Development						
5.0 Design Criteria						
6.0 Open Space Requirements						
7.0 Open Space Management						

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 7 Cul-de-Sac Design	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
1.0 Purpose and Objectives																			
2.0 Cul-de-Sac Design																			
2.1 No title..."Internal roads..."																			
2.2 No title..."In addition to the standards..."																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 8 Sidewalks and Curbs	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
1.0 Purpose and Objectives																			
2.0 Sidewalks and Curbs																			
2.1 Sidewalk Design																			
2.2 Curb Design																			

Name of MS4:	Decision: Will begin the process of including this in our local code.																		
	Name/Title of Decision Makers: _____																		
Gap 8 Sidewalks and Curbs	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
2.3 Design and Maintenance of Permeable Strips																			

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
1.0 Purpose and Objectives																				
2.0 Applicability																				
3.0 Administration																				
4.0 Avoiding Locating Projects in Sensitive Areas																				

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
4.1 Design Plan Contents																				
4.2 Site Design Standards																				
4.3 Natural Resource Buffers																				
4.4 Tree Protection																				

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
5.0 Facility Design Standards																				
5.1 Stormwater Conveyance Design																				
5.2 Building Roof Drains																				
5.3 Parking Ratios																				

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
5.4 Parking Lot Design																				
5.5 Bicycle Parking																				
5.6 Sidewalks																				
5.7 Curb Design																				

Name of MS4: UAlbany	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level					Best Management Action Level					Model Community Action Level					No Action Level				
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
5.8 Landscaping and Permeable Strips																				

Name of MS4: Albany County	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
1.0 Purpose and Objectives																				
2.0 Applicability																				
3.0 Administration																				
4.0 Avoiding Locating Projects in Sensitive Areas																				

Name of MS4: Albany County	Decision: Will begin the process of including this as Policy																		
	Name/Title of Decision Makers: _____																		
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
4.1 Design Plan Contents																			
4.2 Site Design Standards																			
4.3 Natural Resource Buffers																			
4.4 Tree Protection																			

Name of MS4: Albany County	Decision: Will begin the process of including this as Policy																		
	Name/Title of Decision Makers: _____																		
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
5.0 Facility Design Standards																			
5.1 Stormwater Conveyance Design																			
5.2 Building Roof Drains																			
5.3 Parking Ratios																			

Name of MS4: Albany County	Decision: Will begin the process of including this as Policy																			
	Name/Title of Decision Makers: _____																			
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level	
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments	
5.4 Parking Lot Design																				
5.5 Shared Parking																				
5.6 Proximity to Mass Transit																				
5.7 Bicycle Parking																				

Name of MS4: Albany County	Decision: Will begin the process of including this as Policy																		
	Name/Title of Decision Makers: _____																		
	Minimum Action Level						Best Management Action Level						Model Community Action Level						No Action Level
	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Yes	No	Maybe	Convert to Guideline(s)	Start when?	Comments	Comments
5.8 Sidewalks																			
5.9 Curb Design																			
5.10 Landscaping and Permeable Strips																			

**Appendix Q**  
**List of Project Meetings**

## **Appendix Q**

### **List of Project Meetings and Participants**

#### **I. List of Meetings (Includes Training Workshops)**

##### **January 6, 2011 Kick Off Meeting for Coalition Members**

Location: Town of Colonie, Public Operations Center, Latham, NY

Attendees: 16 participants from 12 different MS4s

Purpose:

- Establish the Green Infrastructure Local Law Advisory Committee (GILLAC), a sub-committee of the Stormwater Coalition Working Group
- Describe NYSDEC Stormwater Grant Work Plan Deliverables and Schedule
- Seek suggestions from Coalition members regarding the Work Plan (survey, assessment tool, green infrastructure training workshops)

##### **January 25, 2011 GILLAC Meeting (Training Needs Survey)**

Location: Albany County Department of Public Works, Voorheesville, NY

Attendees: 5 participants from 5 different MS4s (from notes)

Purpose:

- Develop Green Infrastructure Awareness and Training Needs Survey

##### **April 8, 2011 GILLAC Meeting**

Location: Village of Voorheesville, Village Hall, Voorheesville, NY

Attendees: 10 participants from 9 different MS4s

Purpose:

- Review and approve Final Green Infrastructure Awareness and Training Needs Survey
- Analyze response of 7 MS4s who took a close look at the pros and cons of the Center for Watershed Protection Code Ordinance Worksheet “COW” and the EPA Water Quality Scorecard
- Decide what next, use one local law assessment form as is, or merge best of all of them into one local law assessment tool?
- Review scope of services for consultant hired to develop model local law(s)

##### **May 25, 2011 GILLAC Meeting**

Location: City of Watervliet, City Hall, Watervliet, NY

Attendees: 10 participants from 9 MS4s

Purpose:

- Distribute Final Green Infrastructure Awareness Survey which includes Green Infrastructure Images
- Review revised Local Law Inventory Tool (merging of two “COWs”, one from the Center for Watershed Protection, the other from the NYSDEC Hudson River Estuary Program with the EPA Water Quality Scorecard. Format to match the EPA Water Quality Scorecard)
- Workshop update
  - NYSDEC/Green Infrastructure NE Stormwater Training Center with John Dunkle – a good program, possible grant funded Workshop?

- Green Infrastructure Tour-existing practices where?

### **July 14, 2011 GILLAC Meeting**

Location: Village of Colonie, Village Hall, Colonie, NY

Attendees: 9 participants from 7 MS4s

Purpose:

- Review GI Awareness Survey results and select Workshop topics (GI Bus Tour; Dunkle NE SWT GI Workshop; Mock Application Planning Board Role Play; GI Issues; Stream Daylighting)
- Discuss consultant scope of services RFP for developing Model Green Infrastructure Local Law(s)

### **August 30, 2011 GILLAC Meeting**

Location: City of Cohoes, City Hall, Cohoes, NY

Attendees: 8 participants from 7 MS4s

Purpose:

- Present Final RFP, Vendor List, and County Scoring Form for approval
- Schedule proposal scoring sessions
- Critique local law assessment tool, now called the Stormwater Coalition Scorecard
- Discuss how best to research Scorecard information (by whom? by when? municipalities need help, or do it all in-house?)

### **September 21, 2012 GILLAC Meeting**

Location: Town of Bethlehem, Town Hall, Delmar, NY

Attendees: 11 participants from 10 MS4s

Purpose:

- Explain progress to date with consultant RFP (sent to whom, responses)
- Clarify how best to fill out Stormwater Coalition Scorecard and purpose of Scorecard
- Plan Workshops (speakers, educational objective, logistics)
  - NYSDEC/Green Infrastructure Stormwater Training Center Dunkle program
  - Mock Application Role Play of Planning Board meeting
  - Stream Daylighting

### **September 26, 2012 Albany County Pre-Proposal Conference**

Location: Albany County, 112 State Street, Cahill Room, Albany, NY

Attendees: GILLAC Co-Chairs; County Purchasing Staff; Interested Vendors

Purpose:

- Pre-Proposal Conference for interested vendors (County Purchasing Department procedure)
- Overview of project provided for vendors and questions addressed

### **October 14, 2011 GILLAC Meeting**

Location: City of Watervliet, City Hall, Watervliet, NY

Attendees: 9 participants from 8 MS4s

Purpose:

- Plan Workshops

- January 31, 2012 GI Workshop w/John Dunkle and Blue Neils NE SW Training Center; The Crossings of Colonie (logistics, food, promotion, location)
- Mock Application Role Play (concept, formation of sub-committee)
- Stream Daylighting (rough draft of content and concepts)
- GI Bus Tour (sites)

**October 25, 2011 GILLAC Meeting**

Location: City of Cohoes, City Hall, Cohoes, NY

Attendees: 7 participants from 6 MS4s (GILLAC)

Purpose:

- Evaluate proposals submitted by interested consulting firms for Model GI Local Law services
- Clarify criteria for scoring proposals
- Set deadlines for completing scoring process
- Establish scoring sub-committee

**November 1, 2011 GILLAC Meeting (Consultant Selection Sub-Committee)**

Location: City of Watervliet, City Hall, Watervliet, NY

Attendees: 7 participants from 6 MS4s

Purpose:

- Evaluate scoring data
- Select short list to interview

**November 10, 2011 GILLAC Meeting (Consultant Selection Sub-Committee)**

Location: Town of Colonie, Public Operations Center, Latham, NY

Attendees: 7 participants from 6 MS4s

Purpose:

- Plan consultant interviews
- Prepare questions

**November 18, 2011 GILLAC Meeting (Consultant Selection Sub-Committee)**

Location: Town of Colonie, Public Operations Center, Latham, NY

Attendees: 7 participants from 6 MS4s

Purpose:

- Interview short list of consulting firms

**November 22, 2011 GILLAC Meeting (Consultant Selection Sub-Committee)**

Location: Village of Voorheesville, Village Hall, Voorheesville, NY

Attendees: 10 participants from 8 MS4s

Purpose:

- Evaluate final scores based on interviews
- Select consulting firm
- Updates related to Workshops

**December 20, 2011 GILLAC Meeting, plus others**

Location: Town of Bethlehem, Town Hall, Bethlehem, NY

Attendees: 11 participants from 11 MS4s

Purpose:

- Collect completed Stormwater Coalition Scorecards
- Discuss issues with Scorecards, likely Scoring procedures
- Review logistics and registration for January 31, 2013 Green Infrastructure Workshop with John Dunkle
- Discuss Green Infrastructure Mock Application Role Play (casting, audio visual aids, and pre-session with CDRPC)

### **January 11, 2012 GILLAC Meeting**

Location: Public Operations Center, Town of Colonie, Latham, NY

Attendees: 8 participants from 6 MS4s

Purpose:

- Updates regarding consultant contract, Workshops, and status of January 31 Workshop (registrations to date)
- Prepare Green Infrastructure Mock Application Roles (site plan details, script and roles)

### **January 31, 2012 Green Infrastructure Training Workshop**

**Program Title: "Applied Green Infrastructure Design"; John Dunkle, Presenter**

Training Provider: Eastern NE Stormwater Training Center, participants receive 7 PDH hours

Other Details: Co-sponsored with Capital District Regional Planning Commission; participants receive 7 planning and zoning board training hours

Location: The Crossings of Colonie; Colonie, NY

Attendees: 87 attendees from 12 MS4s

Purpose:

- Train local land use decision makers in green infrastructure concepts (purpose of green infrastructure, specific practices, connection to stormwater regulations, mapping tools which support use of green infrastructure, and maintenance requirements)
- Enable local land use decision makers to make informed decisions regarding the Green Infrastructure Model Local Law(s) to be provided to them as grant funded deliverable

### **February 2, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street

Attendees: GILLAC Co-Chairs; consultants, Barton and Loguidice and Young/Sommer

Purpose:

- Transfer Stormwater Coalition Scorecard documents to consultants
  - Individual MS4 Scorecards
  - Tracking Sheets
  - Hard Copies of Local Laws
  - CDs of Documents
- Discuss Time Line

### **February 17, 2012 GILLAC Meeting of “GILLAC Players”**

Note: A sub-committee was formed to develop the Green Infrastructure Planning Board Role Play Training Workshop. For convenience the group called themselves, the “GILLAC Players”.

Location: City of Albany Water Department, Albany, NY

Attendees: 7 participants from 6 MS4s

Purpose:

- Develop an effective demonstration for local land use decision makers of how a site plan review might be conducted by planning board members which currently does not include many green infrastructure practices but could include more
- Role play the current version of the Green Infrastructure Mock Site Plan Review script (address issues with script and identify materials to develop further)

### **March 20, 2012 GILLAC Meeting of “GILLAC Players”**

Location: Capital District Regional Planning Commission (CDRPC); 1 Park Place, #102, Albany, NY

Attendees: 10 participants from 7 MS4s

Purpose:

- Demonstrate Mock Planning Board Meeting Role Play to CDRPC staff responsible for organizing the June 20, 2012 Local Government Planning and Zoning Workshop
- Decide if Role Play is suitable for presentation
- Change and improve Role Play as needed

### **March 30, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street, Albany, NY

Attendees: GILLAC Co-Chairs, consultant from Barton and Loguidice

Purpose:

- Analyze Scorecard Data
- Discuss methodology to identify gaps

### **April 20, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street, Albany, NY

Attendees: GILLAC Co-Chairs, consultant from Barton and Loguidice

Purpose:

- Finalize methodology for analyzing data and numerical approach
- Address issues related to open space type questions in Scorecard
- Decide on best approach to describe data and Scorecard results to MS4/municipalities
- Discuss which questions from which Scorecard categories constitute a gap

### **June 14, 2012 GILLAC Meeting of “GILLAC Players”**

Location: Bulmer Telecommunications Center, Hudson Valley Community College, Troy, NY

Attendees: 11 participants from 8 MS4s

Purpose:

- Present Mock Planning Board Meeting Role Play using all handouts, visuals, and mock meeting set up (dress rehearsal)
- Submit audience Role Play handouts to CDRPC for printing (includes set up information, 3 site plan drawings to be reviewed by Mock Planning Board, and power point)

### **June 20, 2012 Green Infrastructure Training Workshop**

#### **Program Title: "Planning Board Review for Green Infrastructure"**

Details: 2 hr presentation at CDRPC Local Government Planning and Zoning Workshop event; participants of day-long program receive credits towards Planning and Zoning Board training

Location: Hudson Valley Community College, Bulmer Telecommunications Center, Troy, NY

Attendees: GILLAC Players and CDRPC Local Government Training attendees (152 registered; 43 from Albany County and of these, 21 participants from 6 MS4s in Albany County)

#### **Purpose:**

- Demonstrate for planning and zoning board appointees how a planning board could review a site plan such that additional green infrastructure practices are included in the final approval
- Explain, as part of a typical planning board meeting, some of the pros and cons of green infrastructure practices and offer suggestions for how to resolve recognized issues

### **June 22, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street, Albany, NY

Attendees: GILLAC Co-Chairs, consultants from Barton and Loguidice and Young/Sommer

#### **Purpose:**

- Discuss which Scorecard topics and questions, when grouped, qualify as a gap for which the consultant would develop model local law language, as stated in scope of service (14 gaps identified, of these 8 would be selected by Coalition members)
- Discuss unique needs of University at Albany and Albany County, both MS4s without land use control authority and develop options
- Set a deadline for selecting the eight gaps

### **July 23, 2012 GILLAC Meeting, plus others**

Location: Public Operations Center, Town of Colonie, Latham, NY

Attendees: 14 participants from 11 MS4s

#### **Purpose:**

- Describe and discuss with Coalition members the Scorecard results and analysis
- Describe the 14 identified Gaps
- Explain a proposed ranking method suitable to all Coalition members for selecting the final eight gaps
- Decide selection method
- Set a deadline for each Coalition member to submit their ranking decision (form provided)

### **August 20, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street, Albany, NY

Attendees: GILLAC Co-Chairs, consultants from Barton and Loguidice and Young/Sommer

#### **Purpose:**

- Discuss the 8 gaps selected by Coalition members

- Discuss municipalities nation-wide likely to have useful green infrastructure and/or sustainability related code language
- Discuss County and U Albany “Gap 6”
- Discuss procedures for reviewing proposed code language, by when, by whom

### **September 12, 2012 GILLAC Meeting**

Location: Municipal Center, Village of Green Island

Attendees: 10 participants from 9 MS4s (GILLAC)

Purpose:

- Discuss progress by consultant researching green infrastructure local laws
- Set date for Gap 6 Meeting with Albany County and U Albany staff
- Discuss list of remaining Workshop to organize and training needs at this point
- Discuss organizing the GI Tour event to cover the topic of stream day-lighting by including a stream restoration site on the Tour, to be discussed with NYSDEC staff for their approval. This would eliminate a stand-alone workshop on the topic.
- Explain that the topic of Green Infrastructure Issues, one of the workshop topics highlighted in survey results can be dropped, as much of that was covered in in the Dunkle program and the Planning Board Role Play
- Develop list of possible Green Infrastructure Tour sites

### **November 1, 2012 Gap 6 Meeting**

Location: Barton and Loguidice office; 10 Airline Drive, Suite 200, Albany, NY

Attendees:

- Project Team-Model Local Law(s): GILLAC Co-Chairs, consultants from Barton and Loguidice and Young/Sommer
- University at Albany staff
- Albany County staff

Purpose:

- Explain local law project to University at Albany and Albany County staff (consultants and GILLAC Co-Chairs)
- Discuss results of the Gap 6 Albany County/University at Albany questionnaire, a questionnaire prepared by GILLAC Co-Chairs as a way to better identify existing procedures and needs of Albany County and University at Albany
- Explain revised grant deliverable, specific to Albany County and U Albany (Gap 6) and discuss adequacy of this deliverable
- Decide whether or not to accept revised deliverable

### **December 13, 2012 GILLAC, plus others-Gap Review Meeting**

Location: Town of New Scotland, Town Hall, New Scotland, NY

Attendees: 21 attendees from 13 MS4s

Purpose:

- Review and discuss concepts and code language provided by the consultant for seven of the eight gaps (reviewed Gap 1 Parking-Parking Ratios, Parking Lot Design)

### **January 3, 2012 GILLAC, plus others-Gap Review Meeting**

Location: Town of Bethlehem, Town Hall, Bethlehem, NY

Attendees: 17 attendees from 13 MS4s

Purpose:

- Review and discuss concepts and code language provided by the consultant for seven of the eight gaps
  - Finished reviewing Gap 1 Parking-Parking Ratios; Parking Lot Design; Shared Parking
  - Reviewed remaining 6 Gaps, specifically:
    - Gap 2 Rooftop Runoff;
    - Gap 3 Vegetated Open Channels;
    - Gap 4 Sensitive Areas/Clearing and Grading;
    - Gap 5 Open Space Management (Better Site Design);
    - Gap 7 Cul-De-Sacs; Gap 8 Sidewalks and Curbs
    - Gap 8 Sidewalks and Curbs

### **March 18, 2012 Project Team Meeting-Model Local Law(s)**

Location: Albany County, 112 State Street, Albany, NY

Participants: GILLAC Co-Chairs, consultants from Barton and Loguidice and Young/Sommer

Purpose:

- Discuss structure of “GI Model Local Law” (policy guidelines or local law?)
- Explain unclear comments in the notes provided to the consultants of the Gap Review meetings
- Discuss options for addressing specific concerns of individual municipalities
- Discuss the general outline of the final report

### **June 28, 2013 GILLAC Meeting**

Location: Town of Colonie, Public Operations Center, Latham, NY

Attendees: 10 participants from 7 MS4s

Purpose:

- Finalize plans for the Green Infrastructure Tour
- Assign tasks: order food, visit sites for suitability and content, arrange transportation, develop promotional material
- Provide attendees with update of Green Infrastructure Model Local Law project (drafting local law language)

### **September 24, 2013 Green Infrastructure Training Workshop**

**Program Title: Green Infrastructure Bus Tour**

Details: Co-sponsored with Capital District Regional Planning Commissions; Planning and Zoning Board participants, courtesy of CDRPC receive 5 training hours

Tour Locations:

- Village of Colonie, Cook Park, Lunch and Registration (Rain Garden);
- Pine Bush Preserve and Rapp Road Landfill (Stream and Habitat Restoration);
- University at Albany-Uptown Campus (Green Roof);
- Town of Colonie Antoinette Estates (Porous Asphalt and Downspout Disconnect)

Purpose:

- Provide an opportunity for municipal staff, planning/zoning board appointees, elected officials, engineers, NYS agency staff, and interested citizens to see how green infrastructure practices function in the field
- Provide for local land use decision makers a visual, hands on understanding of green infrastructure practices named in the model local law language to be considered by their MS4/municipality as a grant deliverable

Attendees:

99 participants (municipal staff, planning/zoning board appointees, elected officials, engineers, plus NYS agency staff, and interested citizens); 13 presenters. Of the 99 participants, representatives from 12 MS4s participated in Tour

**October 22, 2013 GILLAC Meeting and Final Presentation of Model Local Law(s) Project**

Location: Municipal Center, Village of Green Island, Green Island, NY

Attendees: 12 participants from 7 MS4s

Purpose:

- Present an overview of the Green Infrastructure Local Law project (power point presentation by consultant from Barton and Loguidice)
- Explain the content as needed of model local law language delivered to Coalition members for their consideration (all 8 Gaps)
- Explain how to fill in the Decision Matrix form, the tool developed by the GILLAC Co-Chairs to document what Coalition members intend to do with the Green infrastructure Model Local Law language, as required by the grant

**II. Participation**

**Project Team**

**Note:** The Project Team refers to those individuals involved with developing Green Infrastructure Model Local Law(s)

<p><b>Stormwater Coalition of Albany County</b>  <i>Tasks: Evaluate and guide consultant work; coordinate input from Coalition members; review, correct, and clarify Stormwater Coalition Scorecard results from all Coalition members</i></p>	<p><b>Consultants</b>  <i>Tasks: Analyze local law assessment tool data (Stormwater Coalition Scorecard) and present results; identify gaps and gap content; research other code and ordinance language; develop model local language for identified gaps; final presentation and final report</i></p>
<p>Nancy Heinzen, Stormwater Coalition Coordinator, Project Manager  GILLAC Co-Chair</p>	<p>Nadine Medina, PE, CPESC  Barton and LoGuidice, PC</p>
<p>Leslie Lombardo, Senior Planner  Albany County Senior Planner  GILLAC Co-Chair</p>	<p>Jeffrey Baker, Attorney,  Young/Sommer, LLC</p>

**Green Infrastructure Local Law Advisory Committee**  
**(GILLAC)**

*Tasks: 1) Provided guidance and direction for Green Infrastructure Model Local Law project and communicate MS4/municipal interests and concerns to GILLAC Co-Chairs; 2) Developed and implemented a Green Infrastructure Awareness and Training Needs Survey; and 3) Developed and implemented Green Infrastructure Training Workshops*

*Note: Throughout this project, there were personnel changes within MS4/municipalities. The list below includes all participants, from the beginning until the end of the project who typically participated in GILLAC meetings.*

**GILLAC Co-Chairs:**

Nancy Heinzen, Program Coordinator, Stormwater Coalition of Albany County,  
Leslie Lombardo, Senior Planner, Albany County Department of Public Works

**Participants:**

Michael Lyons, Senior Planner, Town of Colonie  
Maryella Bell, Engineer and Stormwater Officer, CSO LTCP, City of Albany  
Jeff Lipnicky, Senior Planner, Town of Bethlehem  
Melissa Ashline-Heil, Director of Building and Planning, City of Cohoes  
Lisa Merwin, LaBarge Group, Representing Village of Colonie  
Rosemary Nichols, Attorney and Planner, City of Watervliet  
Paul Cantlin, Building Department, Town of New Scotland  
Jeremy Cramer, Building Department, Town of New Scotland  
Gerry Gordinier, Stormwater Program Coordinator, Village of Voorheesville  
Frank Fazio, PE, Office of Campus Planning, University at Albany-SUNY

**Stormwater Coalition of Albany County**  
**Working Group & Others**

*Participated in select meetings and tasks related to Green Infrastructure Model Local Law Project plus other activities as indicated below:*

- *Ranked and selected gaps for consultants to address*
- *Critiqued proposed local law(s) concepts and language*
- *Discussed and filled out Decision Matrix form describing MS4 Green Infrastructure Model Local Law(s) intentions*
- *Coordinated the participation of others from within MS4/municipality, as needed*

**Participants:**

Laura DeGaetano, Natural Resource Planner, Albany County  
Margaret Della Rocco, Engineering Aide, Albany County DPW  
Bradley Fisher, County Executive's office, Albany County  
Tracy Murphy, Law Department, Albany County  
Scott Siegel, Policy Analyst, County Executive, Albany County

Dave Melnick, Director of Planning, City of Albany  
Brad Glass, Senior Planner, City of Albany  
Brian Kise, PE, Stormwater Program Coordinator, Town of Bethlehem  
Monika King, PE, "GILLAC Player", Town of Bethlehem  
Michael Morelli, Director of Planning, Town of Bethlehem  
Garry Nathan, City Engineer, Stormwater and CSO LTCP, City of Cohoes  
Barbara Decker, Engineering Assistant, City of Cohoes  
John Dzialo, Stormwater Program Coordinator, Town of Colonie  
Sean Ward, Executive Assistant to Mayor, Representative to CSO LTCP, Village of Green Island  
Maggie Alix, Parks and Recreation, "GILLAC Player", Village of Green Island  
Joe Legnard, Village Attorney, Village of Green Island  
Kristen Swinton, Chair Planning Board, Village of Green Island  
Ken d'Arpino, Stormwater Officer, Town of Guilderland  
Paul Reuss, Executive Assistant to Mayor, Village of Menands  
Glenn Hebert, Building Department, Village of Voorheesville  
Mark Gilchrist, Building Department, City of Watervliet  
David Dressel, Water Treatment Plant, Stormwater Coordinator, CSO LTCP, City of Watervliet  
Erroll Millington, Director of Office of Campus Planning, University at Albany, SUNY  
Randy O'Lockey, Office of Campus Planning, University at Albany, SUNY

### **Administrative Support**

*Tasks: 1. Project Management, Grant Administration, Consultant Contract; and 2. Meeting Notes and Other Tasks*

#### **Participants:**

Nancy Heinzen, Stormwater Program Coordinator, Stormwater Coalition of Albany County  
Leslie Lombardo, Senior Planner, Albany County Department of Public Works  
Patricia Shultis, Stormwater Coalition of Albany County; Student Intern, U Albany-SUNY, M.S  
Biology, Conservation, and Policy  
Lori Catucci, Albany County Purchasing Department, Consultant Services Support