This study investigates the influence of L1 dialects on the perception and production of English tense/lax vowel contrasts by native speakers of Korean from two dialectal backgrounds whose dialects differ in their use of vowel duration, namely Seoul Korean (SK) and Kyungsang Korean (KK). A perception test examined their ability to discriminate English tense/lax vowel contrasts in /pVb/ and /pVp/ contexts. A production test measured Korean speakers’ production accuracy of English tense/lax vowel contrasts in voiced (/CVd/) and voiceless (/CVt/) contexts. The perception test revealed that both Korean groups showed similar patterns of perceptual sensitivity to the target vowels. The effect of consonantal context indicated that both Korean groups were sensitive to durational cues. However, there existed an easier vowel contrast in one context than the other despite the similar duration differences between the two vowels across contexts, suggesting that they use both durational and spectral information. The production test showed that both Korean groups have difficulty in accurately producing English tense/lax vowel contrasts. Both Korean groups over-relied on vowel duration to distinguish the English /i/-/ɪ/, but showed no or minimal duration differences in the English /u/-/ʊ/. Overall, Korean speakers’ degree of accuracy in perceiving and producing English tense/lax vowel contrasts in different consonantal contexts did not vary as a function of dialectal background. This suggests that the availability of durational information in an L1 dialect may not affect the process of making use of spectral and durational information in an L2.